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Original Research Article

Narrative Design as a Historical Technique (Case Study: Grand Mosque of Fahraj)*

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Abstract

Problem statement: Though it has not been a long time since design research emerged as a branch of science, the consistent creation of architectural works proves the existence of design methods. Such methods have developed even though knowledge about them is limited. Some methodologists have identified methods characterized by timelessness. These methods are important because they have constantly revealed themselves in the history of design. This research aimed to analyze the Grand Mosque of Fahraj to investigate the role and effect of the narrative method on the way this mosque has been designed using the intertextual analysis method. The research problem concerns the effect of the narrative method on building the Grand Mosque of Fahraj and addresses the quality of narration of the Al-Nabi Mosque's designer as a source of analogy for its design.

Research objective: This study sought to investigate the effects of the narrative method on creating and building the Grand Mosque of Fahraj.

Research method: The research employs a qualitative method. After reviewing the written sources, as data collection method, the theory of intertextuality was used to analyze the work as a text, as the architectural design method was also examined.

Conclusion: The Grand Mosque of Fahraj seems to be designed through a narrative design process. This narration is based on Al-Nabi mosque which is regarded as a source of analogy for design in the Grand Mosque of Fahraj.

Keywords: *Design method, Narration, Grand Mosque of Fahraj, Al-Nabi Mosque.*

Introduction

Though it has not been a long time since design research emerged as a branch of science, the consistent creation of architectural works proves the existence of design methods. Such methods have developed even though knowledge about them is limited. Some methodologists have expanded their views to introduce design methods. For the methodologists, continuous creation of form and space signal the most important indicators of

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such methods. Because an architectural form cannot disregard the creation method, the work creation history is as old as the architecture; even though no self-knowledge of which exists (Rezaei, 2014). A pioneer of process research in recent decades has been Geoffrey Broadbent, who first developed ways for design methodology. Broadbent's methodology consists of four macro methods: i.e., pragmatic, iconic, analogical, and canonic. The methodology applied by Broadbent is important because it examines the continuity of the method, is independent of history, and includes all mainstream methods that constitute form. Consistent with Broadbent's efforts, Lawson introduces a method in an evolutionary process which, not only has an analogical aspect but also draws upon narrations (Lawson, 2013). In fact, the work creation process is largely affected by how a designer interprets the meaning of architecture in his mind. This narration can result from the designer's mind, or obtained from the surrounding environment, or his action against it.

Grand Mosque of Fahraj[1] should be considered the first mosque with Sahebstan (Shabestan is an indoor space with uniform and parallel columns ushering into the central part (nave) of the mosque from one side) in Iran, built in the 6th century. This mosque was established a little after Islam emerged and is based on a narrative design. The mosque's geographical dimension and the architect's first encounter with Islamic architecture led to the hypothesis that the building was erected drawing upon the narrations, the designer had been aware of. The basic problem in this research is: How might we understand the formation process of a historical work through rational reasoning about the design method applied in it? In fact, this research sought to document the formation process of an artwork. The Grand Mosque of Fahraj represents the socio-historical situation of a new-creed community. Part of knowledge about the most important religious, cultural, political, and social institutions originates from available second-hand narrations. Therefore, the way a designer interprets the design and the method he uses in the very design process can suggest the architect's approach to the issue. This issue is important in several ways. First, the background of the method and its roots have focused on form. Although local architecture is assumed to be architecture without an architect, it cannot be conceived of a non-methodic architecture. Second, a narration gains its significance in the creation of a work and through its contribution to shaping the subject. Third, Lawson's narrative method, drawing upon analogical reasoning, is key to this study. Finally, it is imperative to explore the design process of the Fahraj Mosque regarding its historical and cultural significance and the importance of the historical period to which it belongs.

Research questions

- How has the narrative method affected the architectural design process of the Grand Mosque of Fahraj?
- How is the design process of Grand Mosque of Fahraj affected by Al-Nabi Mosque as an analogy source?

Literature review

Scant research is available on a narrative-based design process. The researches focusing on the narrative method can be divided into three main categories; one category concerns the narrative subject of the work and reading of space, another one deals with the effect of narration on education and the other focuses on introducing it as a design method. Consistent with Broadbent's methodology, Lawson for the first time introduced a narrative method within the development of the analogical method, thus going on to describe dialogue and storytelling as a method for architectural design.

In an article entitled "Architecture and Cognition", Cross (2001) provided an interpretive narrative in addition to dialogue, discussing the problem-solving process through dialogue.

In his book entitled "Architectural analysis", Mahmoud Rezaei (2014) briefly referred to

Lawson's narrative method, arguing its essence is based on analogy.

In a study entitled "Narration in Design: A Study of the Types of Narrative Indicators and Functions in Design Practice", Nadimi, Sharifzadeh and Tabatabaei Lotfi (2019), quoted by Grimaldi investigated five definitions of narration based on the Narrative Theory, then providing a typology of narratives in design.

In an article entitled "Sequential Sketches as Visual Problem-Solving in Design," Gabriella Goldschmidt (1992) concerned visual problem solving via designing sequential sketches involving narrative aspects.

The other research on narrative architectural designs is a "comparative study of architectural narration and story", comparing the structural narration in architecture and stories (Karimzadeh, Etesam, Forootan & Dolati, 2018).

Yet another study is "Spatial experience of narration and architecture: the role of place narration in improving the semantic quality of modern Iranian museums" which was performed by Nahid Gilamirrod, Malekjahan Jahani and Salavatian (2019), discussing the extent to which narration could influence the semantic quality of museums.

Research method

Given the subjective nature of the research and the temporal dimension of the selected case study, this research falls under qualitative researches using epistemological assumptions. Two major steps could be conceived of in this research, both of which drawing upon rational reasoning. The analysis method in these two steps was "analogical-causal" and "interpretive-inductive". The research used a combined inductive and deductive approach. In the deductive section, views and theories of methodologists Broadbent and Lawson, were reviewed to compare the methodologies provided and to explore reasoning methods on which the methodologies rely. Appropriate historical documents were gathered using documentary techniques to explore the rational reasoning behind the works. Then historical documents (religious and historical texts and architectural documents) were juxtaposed, and data were analyzed using an intertextuality method so that the applied design method and the source of analogy behind, were defined. In Fig. 1, an attempt is made to show the methodological
structure of the research based on the nature of the methodological steps.

Research limitations

The present study has three structural limitations, which awareness of them might be helpful.

- The first limitation is the subjective nature of the method. Since design is an act that occurs in the mind, coming up with the actions leading to the creation of a work is difficult
- The second limitation is the application of the mind to study the mind. This is important in the sense that the research subject and research tools are the same. Although this is prevalent in studies on mental performance, it can greatly contribute to design-based researches. In fact, the problem arising from this limitation is that the subjects taken for granted in mind are discarded.
-The third limitation is the historical interval from the case study, making it difficult to access the data. In many cases, even though it was possible to access the data, meanings could be manipulated throughout history, suggesting that much of the evidence may not now have the meaning in its past.

Research literature

• Method

The researcher may directly be entangled with his knowledge to find a new solution. However, the way the subject is approached is objectified, with the researcher directing his thought on it before getting involved with it; thus, seeking to deal with it before turning its attention to the way he has

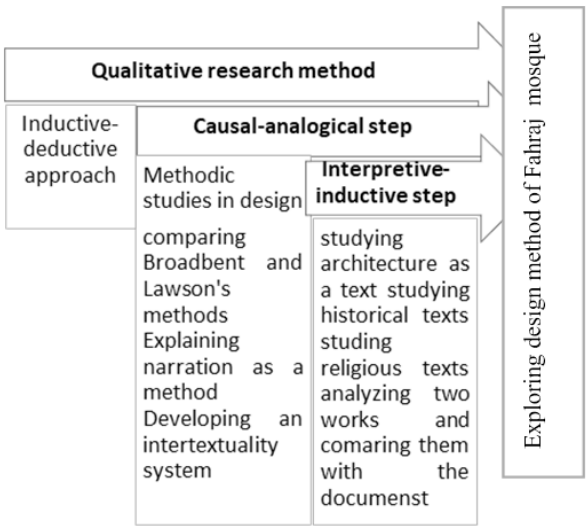


Fig. 1. Research method steps. Sources: Authors.

to go. The subject of knowledge can be divided into three domains:

- "The issue of knowledge": Encounter with "science";
- "Awareness of knowledge": Encounter with the "method of science";
- "Awareness of awareness" or "Method-based science" called methodology. In other words, the issue is one of knowledge, awareness of knowledge, and awareness of awareness (Foroughmand Arabi, 2015). The relationship between these three levels of awareness can be seen in Fig. 2.

• What is the methodology

Methodology is the knowledge of standards and principles based on a given pattern, selection, structuring, process, and application of techniques. As regards philosophical foundations, methodology concerns the logic in sciences, and non-philosophical grounds, it deals not with the knowledge about the very epistemological value of the method per se, but also the way methodological value is added to the work. Architecture and the disciplines of environmental design as interdisciplinary sciences face three methods as basic attitudes to involve in theoretical fields; As shown in Table 1, these methods are:

In this connection, a process method is an act that can bring about benefits in most activities. Therefore, a design project, no matter how complex it is, might narrow down into smaller components. In the process method, strict adherence to the method constitutes the premise of the work, resulting in an environmental design using a generalizable, defensible, regular and systematic manner. the process is a basic characteristic of environmental design. In the meantime, two product and process-oriented perspectives constitute the two ends of a continuum, with points plotted on it, which, while relatively tending to one particular end, are not heedless of the other end (Lang, 2015). For those unacquainted with these processes, the design will turn into an intuitive, negligible, and mysterious thing. However, the approach discussed considers the design as a problem-solving activity dealing with such issues as physical regulation to meet functional needs. The design process should be thought of as a rational and empirical process than a product of inspiration or intuition. Design is made through analogical reasoning, not inductive reasoning. In the design process, the result is not to accumulate realities (Behzadfar & Shakiba Manesh, 2009).

• Design methods

Not all design researchers have embarked on studying, comparing, and categorizing all design methods. Although Yurmaka and his colleagues have studied and classified types of methods, they have failed to find the common ground in all of these methods (Rezaei, 2014). Employing new techniques of a wide spectrum may, at first glance, seem contradictory and impossible. Most methods are

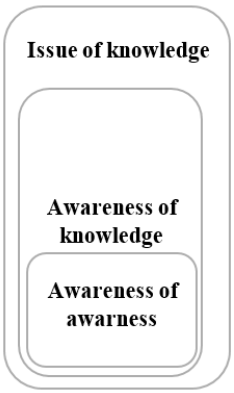


Fig. 2. Types of knowledge and the relationship between them. Source: Authors.

Table 1. Types of reference methods. Source: Roberts & Grad, 2015.

Types of methods	Definitions
Content method	A method concerning the extent to which physical environment features interact with behaviors, perceptions, and feelings in the environment. In content-based theories, it is mainly limited to the product and is interpreted as a product-oriented approach.
Normative method	It is a suggestion about desirable and undesirable theorizing values and features.
Procedural (process) methods and theories	Its conceptual basis is the most desirable and the best way to achieve a desirable status. In the design process, procedural methods are utilized for meeting the standard design.

characterized by making design thinking universal, which has been specific of architects like a personal legacy. Design researchers have used mathematical signs, symbols, narratives, and diagrams (displaying the components of a design problem and their inter-relatedness) to represent design techniques.

In the following, the method in the area of design is studied, as methodology introduced by Geoffrey Broadbent and Lawson serves as the basis for the analysis. This is significant because the opportunity to explore the philosophy and essence of known methods will only be made possible by comparing the methods introduced by methodologists, otherwise, any judgment about the essence of methods and reasoning techniques may engender some sort of dogmatism.

Broadbent and Lawson's design methods

As for the methodologists, Broadbent is considered a pioneer of the design methodology path, concentrating on the process of turning an idea and diagram into an architectural form throughout a historical process (Broadbent, 1973). Lawson also draws upon Broadbent's design methods to conduct a methodological analysis. For Broadbent, designers use four different sources to create a form in the combination stage. The four methods he believes are integrated are:

Pragmatic method: Broadbent believes this method relies on empiricism and also combining different components. For instance, local homes are erected based on climatic conditions (Broadbent, 1973). Lawson maintains that the pragmatic approach tends to engender common results. This method does not require much innovation, as it heavily relies on the direct use of available materials and facilities for construction. This is an old albeit conservative technique (Lawson, 2013).

Iconic method: Iconic method depends on index building forms. The iconic method makes use of popular and recognized architectural images, thus, somehow relying on historicism. Describing this method, Broadbent emphasizes the relationship between the design method and lifestyle patterns (Broadbent, 1973).

The iconic method is historically followed by the pragmatic method, which uses forms resulting from past trial and error and then adopted. Some of the forms studied today in the process of form creation have evolved during a pragmatic process, thereby turning into iconic methods as their functions were demonstrated and their drawbacks were corrected.

Concerning the iconic method, Lawson argues that the designer seeks to effectively copy the existing solutions (Lawson, 2013). This technique is a product of cultural accumulation and of studying the typology and morphology of buildings. Thus, some drawbacks can be replicated in some types (Nadimi, 2019).

Canonical, geometric or integrated method: Broadbent speaks of a set of rules and principles that impact the fate of a project and can be used as a source for design (including grading and networking, employing proportions, and the measurement system). He only considers as effective the source of the analysis in exploring such structural systems (Lindekens & Depuydt, 2004).

Deductive or analogical method: In the analogical method, the designer makes an analogy of the phenomena outside the scope of the design to

visualize and plot the design, in addition to providing details to it in the next step (Broadbent, 1973).

Brian Lawson uses the fourth concept to develop another process of form design and creation, calling it "narrative" design. Broadbent's inclusive method, as well as his consideration of the final combined method, delist Lawson's method from a separate category, as the narrative method should be considered as analogies capable of being replicated and combined.

In the analogical method, the designer lays the premise of his design on other contexts to create a new solution. creation of form using this method along with visual analogies is aimed at finding a structure for the project to be similar to other structures or natural factors. Broadbent also argues this method has a metaphorical aspect. The designer does this comparison to formulate the problem in a new manner (Lawson, 2013).

Narrative method: The designer narrates or juxtaposes a set of eventualities to integrate the main features of the design so that a whole design frame appears, thus, turning the design into a narrator creature for the user (ibid.).

- Dialogue and narration

In the literature, narrative-based design has been cited as a speech-design technique. However, two concepts of dialogue and narrative are sometimes used interchangeably. Design serves as a process based on dialogue and understanding. It is actually how designers understand issues through dialogue and conclude by finding solutions for problems. It is a process that involves changing the way a situation is perceived through "talking it through" (Cross, 2001). One of the most common forms of dialogue is narration or storytelling. Narration can be used as a design technique. The idea of narrating a story is aimed at developing a conventional plot and making it coherent. Some linguistics scholars have examined design dialogues, concluding that states are the premise of dialogue in storytelling (Lawson, 2013). When designers speak together, they have more than one way of dialogue, though turning to another way similar to storytelling. The search process is initiated by investigating the idea of storytelling to raise understanding of dialogue in design. It is common to initiate the narrative by "setting the stage". This can occur at some points in a story, though it is more common to come early in the text. Needless to say, setting the stage involves describing the situation and the characters in a story. This is also seen in the design. Thus, what is salient is the process of introducing objects as characters and defining their desirable features and then, determining the conflicts between them from a structural point of view (ibid.).

- Narration

Narration is a text that gets the story to describe "self" or "the other". Therefore, it also has a narrator or a storyteller (Moin, 1984). The term narration derives from the Latin narrara and the Greek gnarus. Gnarus denotes knowledge and understanding, which is also indicative of seeking knowledge. In his literary theory, Aristotle also considers the imitation-based story to be the "attainment of knowledge" (Ahmadi, 2001).

Narration is the use of a written or spoken commentary to convey a story to an audience. Narration is conveyed by a narrator: a specific person or unspecified literary voice, developed by the creator of the story, to deliver information to the audience, particularly about the plot.

Narration refers to the way of retelling or representing a story. Each narration has two parts of story and discourse. A story includes the content or set of happenings (actions and events) as well as people and the process of setting the stage; however, discourse is an objective manifestation of a story and an instrument that conveys the story. Fig. 3 represents the ratio between the components of the narrative (Karimzadeh et al., 2018). Every architectural work is a text which describes a narration when experienced. Accordingly, it can be regarded as a tool to describe the space. According to the process, a text epistemology suggests reading textual works, hence it is required to interpret latent signs of each architectural text through a new experience to understand it. Taking architecture

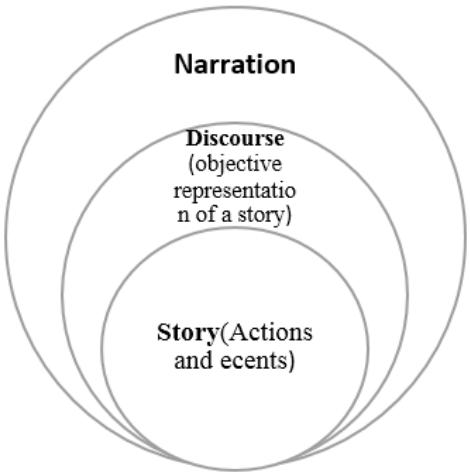


Fig. 3. Components of Narration. Source: Authors.

as text, building components are considered as words, and seeing them is reading them (ibid.).

Theorizing narrative architecture design was focused attention on the development of postmodernism, where architecture could be interpreted as a linguistic approach and as a text. In the early 1980s, many of the architects used to employ the term narration to describe their work. Narration for architects is appealing in that it is a path through which interaction with the city as well as the interaction with the users and the buildings are provided. This led architectural theorists to consider empirical premises of architecture by taking into account narration as forming the space and cultural meanings in architecture. The components constituting buildings can convey messages and describe their link with time. Space experience is redefined through the events existing in a moment in a Spatio-temporal continuum. For Christopher Alexander, "the identity of each space is created of the continuous replication of some given patterns of events in that place" (Alexander, 2011). For some architects (e.g., Bernard Tschumi, Peter Eisenman, Koolhaas), the spatial narration is a key component not only in the way a building is described but also in the way methods are designed (Karimzadeh et al., 2018). Narration is a process of regulating and forming space. Events need space to occur and occupy, thus, in its simplest definition, it is the process of joining different events together, is a process of linking various events together. It is a process consisting of making various spaces, arriving at a more-or-less coherent space through violating this rule. Broadbent maintains that analogical methods direct us towards a more famous instrument aimed to create a form for the designer. A narrative style can originate from an expanded "analogical" manner introduced by Broadbent, though it has functions beyond a simple analogy. In this style, called narrative design, the designer tends to define a story to be employed to link the main features of a design together (Lawson, 2013). Throughout a story or narration, the storyline extends by a "narrator" at his request. The "I" role in space has a determining role in how the spatial narration is developed (Mostaghni, 2016). Narrative design is a type of analogical style that solves the workings of a design through direct or indirect analogy with a narration. As can be seen in Fig. 4, architecture is affected at three levels: instrument, referral, and conceptual (Karimzadeh et al., 2018). Narration and architecture are characterized by some structural similarities, with both regarded as constructing a world with two different tools. There is a close relationship between narration and architecture. Narration is sometimes a design approach, serving as a sign which constitutes a spatial scenario as a narrator. As a result, this relationship can lead to three main areas be used in different stages of an architectural space.

• Essence analogy of Broadbent-Lawson's methodology

Analogical thinking is a reasoning technique known to thinkers as a reasoning mechanism. An analogy is capable of applying previous knowledge to gain new knowledge and can finally produce extensional cognition. Dennis Scott Brown argues that analogy always exists in our mindset. William Gordon identifies four examples of similarities: symbolism, explication, customization, and imagination. Designers apply visual representations when designing and modifying forms. Analogy is

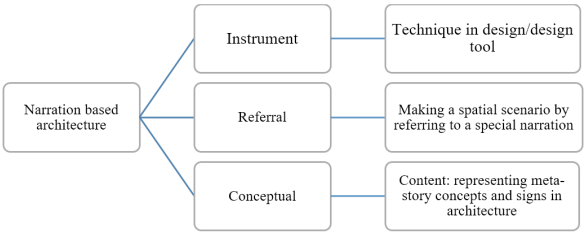


Fig. 4. Architecture as affected by narration. Source: Karimzadeh et al., 2018.

one of the ways to use these representations in the design process. Using analogy requires the creative conveying of relevant information depending on a known situation (i.e., source) to a new one (i.e., end) (Azimi, 2016). Designers usually use visually rich classifications when solving design problems, also known as potential capacities of their analogies in problem-solving. In leading studies on using an analogy in the design process, Goldschmidt suggests that designers seek visual expression signs which, if identified, serve as a source of analogy (Casakin & Goldschmidt, 2000). The previous techniques represent an analogical nature depending on the internal and external mechanisms of a project of different levels. Table 2 juxtaposes the proposed methods to clarify the hidden relations among them. By analogy, it is meant validating the form in the combination stage considering the extent to which it responds to the components of the analysis stage. According to this concept, the designer, considering the surrounding world, forms the design given the selection of a phenomenon being similar to the desired features of the design intended. Table 3 shows the process role of analysis and composition. Speaking of similar phenomena, the designer could face a set of phenomena. This helps choose a style or some sort of architecture or geometric shapes and natural phenomena or even a narrative. An analogy may get its premise founded on the direct and immediate, objective and explicit imitation of solutions available for similar problems, or take place indirectly and implicitly via a subjective phenomenon (metaphorical method).

Reading the Grand Mosque of Fahraj as a text

To interpret a work, it is inevitable to work out a mechanism to understand the reading construct between narratives and news and the architectural work intended. This construct can be effective when it provides a systematic reading of the work. An architectural work might be considered as a text in which building components are the same as words which being semantically linked together, convey their messages mostly through aesthetic and social signs. A study of architecture as a text not only provides a framework for understanding the work but also gives the study a contemporary nature. The time-based architectural reading process as a text is a product of intertextual proportions. Intertextuality involves some layers linking other layers of a phenomenon. This relationship results in the development of the aesthetic and social signs of textual architecture in two types of synchronic (transverse time-based relation) and time-based (longitudinal relation) relations. The audience reads and interprets the text using the links a text may have with the previous knowledge of the reader. Thus, the text will have many subjects that could affect the reading of a text and ushers in the semantic plurality of the text. Thus, the architectural work is affected by the intertextual subject both when it is produced and the work is created. The audience reads the architecture text through a subjective process (Rahimi Atani, Bazrafkan & Re'isi, 2018 & 2020).
As regards intertextual reading, text reading turns into a process constantly moving between the texts to reveal their overt and covert interrelationships. In these processes, the meaning becomes something that finds existence in a text when linked with other texts. Various semantic dimensions in architectural works are read in intra- and intertextual relations, using various layers within themselves, including the vertical axis (time-based axis) of the sign system within it and the horizontal axis (synchronicity axis) representing a code system. As shown in Fig. 5 two time-based and synchronicity axes are created

Table 2. Similarity of the proposed methods and demonstrating the relationship between the origin of the method and the internal and external components of the problem. Source: Rezaei, 2014.

	Analogy sources	Broadbent' ideas	Lawson's ideas
Intra-subject and direct relationship (specialized relation) Extra-subject and indirect relationship (general relation)	Program and site	Practical	-
	Architectural instances	Iconic	-
	Other phenomena	Analogical and metaphorical	-
		Canonical and integrated	Narrative

Table 3. Analysis, combination, and analogy in the design process. Source: Rezaei, 2014.

	Design process
Analogy between analysis and combination	Analysis: Critical thinking based on direct and internal analysis of the subject of the project, employer, legislator, user, designer
	Combination: Creating form based on external combinations and factors outside the project, science, and the world around

consistent with the previous texts and those of their contemporaries (ibid.).

The authors have developed a tool to read an architectural work drawing upon Rahimi et al.'s ideas to read two contemporary mosques (i.e., Vali-e-Asr Mosque and Al-Ghadir Mosque). Textual layers are decoded in the vertical axis (successive axis) to determine its coding systems. The explorable coding systems in an architectural work include semantic, syntactic, and technical systems. In the horizontal axis (collocational axis), the sign system (signifier and signified relations) concern with various meanings. Significations can be examined in three main categories: form (geometry and proportions, array, material, and technique), functional signification (spatial structure, hierarchy), and semantic signification (social systems, semiotics, ownership system, ideology, and moral system). Layers of an architectural work are investigated in the interaction between sign and coding systems. In the intertextual analysis model and critique of architecture in two synchronic and time-based axes, some subdivisions are developed in sign and coding systems.

Looking at mosques of Early Islam, one cannot read the text without having regard for the first architectural reference of the mosques. Mosques can be described as the first doctrinal, political, and

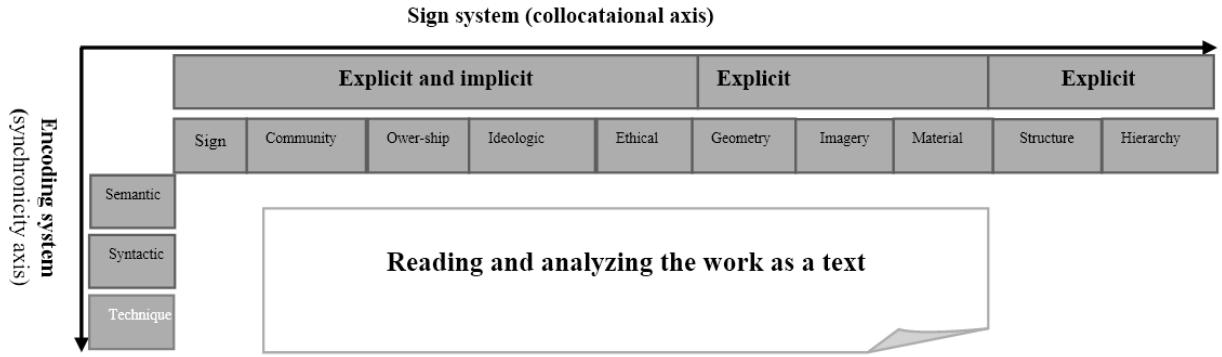


Fig. 5. Syntactical and sign system diagram for text reading. Source: Authors.

social hubs established after the conquest of each region. These new mosques were founded on an analogy of the well-known architecture of the Al-Nabi Mosque, with the imitation becoming a special mosque architecture style being adopted as the main axis of construction; this process developed over the years, and new elements were invented or added to it. Some instances of it include mosques across the world and Iran erected based on the same style (Haj Seyed Javadi & Meshkouri, 1983).

A lack of historical background in the cultural context of Iranian architecture and the need for authorship were characteristics distinguishing early Islamic mosques from other architectural types and functions. On the other hand, because mosques rise from an ideological base, it needs a design process. This will be much more important in a worship space new to the geography of Iran. In addition to all this, the mosque or any other worship place represents religious architecture.

The architect may not have the opportunity to understand the new religion and could only use his experiences in his designs. The distance dimension on the one hand and the need for a worship place on the other hand and the lack of an appropriate model of worship for Muslims were among the factors inspiring Iranian architects to design and construct mosques based on the Al-Nabi Mosque.

Therefore, in designing the Fahraj Mosque, the architect has relied on narrations and dialogues in the design process and mosque construction to make the design appropriate. To answer the main questions of the research and understand the role of the narrative method, Table 4 has collected all the religious and historical narratives on the construction quality of the Al-Nabi Mosque so that they are analyzed intertextuality. On the other hand, by analyzing the map of the Al-Nabi Mosque as a text and juxtaposing it with the Fahraj Mosque.

Architectural features of the Al-Nabi Mosque

Before investigating narratives on the process of constructing the Al-Nabi Mosque, it is imperative to analyze the Mosque's design as a text (Fig. 6). In the Al-Nabi Mosque design, as there are limitations over the type of data available, the spatial hierarchy and the structure governing the plan can only be demonstrated, both geometrically and spatially, with other data obtained from the research text:

- Using right-sided geometry in plan design
- Similarity to square-based geometries
- Western, eastern, and northern entrances undergoing changes according to narrations
- Location of the houses of the Prophet's wives[1] on the east side of the mosque
- Location of a platform for homeless people north of the mosque
- Location of an entrance among the platforms
- Location of Shabestan in the south of the mosque

Rest of Table 4.

Text	Architectural text layers												
	Meaning						Form			Function			
	Implicit			Explicit			Explicit			Explicit	Implicit		
	Semiotic system	Social system	Ownership system	Ethical	Idelogic	Spatial Quality	Geometry	Arrangement / array	Material	Hierarchy	Plan structure		Example
Abi Davood and Bukhari Sonan, quoting Abdulla Ibn Omar: The Al-Nabi Mosque was built by bricks and its ceiling was made of palm tree leafless branches with its columns of palm tree trunk (Khoshnasib, Mohammadi Reyshahri, 2008 & Shah Waliullah, Bokhari, Sandy & Saharnafouri, 2002)							*	*					Mosque
Then the prophet ordered to use bricks. The prophet himself laid the foundation of the house. Then, he dug the foundation and ordered to collect stones from the sabulous. The prophet himself carried a stone on his abdomen. The stones were brought and the foundation was established. It was leveled to the earth level. The stones were arranged in different proportions to the height of a person. The width of the mosque was 10.5 meters (Khoshnasib & Mohammadi Reyshahri, 2008).	*	*		*		*	*						Mosque
The length of the mosque was 35 meters and its width was 30 meters. Its area was 1025 square meters. The stones were used for the base of the walls and the walls were erected out of incombustible raw bricks. The wall foundation of the mosque was 1.5 meters deep and the width of the walls was 35 cm (Saleh Lamei, 1981).	*	*					*		*				Mosque
Ibn Sad and Ata stated: To do this, the prophet began constructing the mosque along with his companions and carried the bricks and stones. In the meantime, the companions of the prophet used to sing songs. Ibn Sa'd stated: Women also helped with the construction of the mosque, as the mosque was being built for all and they had to contribute to constructing it (Ibn Sa'd & Atta, n.d.).		*					*						Mosque
The mosque walls were raised by 2.5 meters. The companions collected some amassed some properties and offered them to the prophet to decorate the mosque ceiling. They asked the prophet. Should we decorate the ceiling with it? The prophet said: I would like to create a canopy-like my brother Moses. The Arabs used to create canopies out of Samam wood, a famous plant in the oasis. This was an example of the prophet's simple living as the canopy could create sufficient light for the space (Khoshnasib & Mohammadi Reyshahri, 2008).			*		*	*		*	*				Mosque
They also stated that the ceiling was constructed with uncoated clay, with the mosque being filled with clay when raining (Papadopoulos & Jazani, 1989).							*	*					Mosque
Eleven columns were raised in the mosque space, woven from palm tree leaves, placed on the surface of the trunks using strong branches in the form of a skein. For Saleh Lamei, it resembled bridges made of wood on the palm trunks covered by leaves, constituting the ceiling of 2 meters in height (Shawazi, 2016).							*	*					Mosque
Some of these 11 columns were reminiscent of the prophet's era with each being named, e.g., repentance column, having some applications, or Mokhlaghah column, on which odor was hanged to make the space of the mosque pleasant, or the Vofood "delegations" columns, where the prophet used it to meet the heads of tribes. Also, one can refer to the Mohras column which was a protection column for the prophet (Mahfouz & Samhoudi, n.d.)	*	*	*										Mosque

Rest of Table 4.

Text	Architectural text layers												
	Meaning						Form			Function			
	Implicit			Explicit			Explicit			Explicit		Implicit	Example
	Semiotic system	Social system	Ownership system	Ethical	Idelogic	Spatial Quality	Material	Arrangement / array	Geometry	Hierarchy		Plan structure	
These columns would cover the mosque ceiling and the Qibla direction with other spaces remaining as courtyard without a ceiling (Shafei & Samhudi, 1998, 440/1 & 450).						*	*						Mosque
Abu Said Khedri narrated: We met with the prophet in the mosque and asked: Which mosque is founded on virtuosity? The prophet gathered a handful of gravels and sprayed to the ground, saying: this s my and your mosque, i.e., the Medina Mosque (Muslim, 1995)										*			Mosque
The Al-Nabi Mosque floor was covered by small pebbles, and since the worshippers used to enter the mosque without shoes, it became common to cover the mosque floor. The prophet used some ground cloth for praying. In the northern part of the mosque, a porch and a canopy were built for poor migrants, known as Soffe porch. It was said as many as 70 migrants had no place to live (Helen Brand, 2012).						*	*			*			Mosque
The numbers of columns on which the mosque was founded were as follows: 1. Columns between the altar and the prophet's place of staying (Roza Al-Nabi): Along the mosque, there were six columns specified today with green and white stones; and across the space, there were 22 columns placed inside the Roza, according to Shiite scholars. 2. The columns were erected at the primary setting of the mosque; two rows of western columns and two rows of northern columns, indicating the Roza, which was roofed during the prophet's time. 3. Post-development columns by the time of the prophet: Two rows on the west ad four rows on the northern parts. 4. Post-development western columns during the prophet's time: In the west of the mosque, eleven columns formed the mosque limits after the conquest of Kheibar. 5. Post-development northern columns: A row of ten columns in the northern part of the mosque, separating the mosque and the courtyard (Mahfouz & Samhoudi, n.d.; Deylami Hamedani, 1986, 35-40).	*		*			*	*	*				*	Mosque
The columns were initially set towards the Qiblah, albeit when the Qiblah was set towards Jerusalem, at which time, the prophet made the northern part of the wall with two rows of roofed columns. Then, the Qiblah changed to the southern wall with the roofed side o the two columns erected. The south side was used for worship (Papadopoulos & Jazani, 1989).	*					*	*					*	Mosque
The Mosque's doors: Gabriel Door: It was a major door to the mosque during the prophet's time. It was laid on the eastern wall of the mosque. Then with the development of the mosque, i.e., after the Kheibar war, it extended several meters to the south, then towards the north. Bab Al-Rahma door: It stood on the western side of the mosque.										*		*	Mosque

Rest of Table 4.

Text	Architectural text layers									
	Meaning				Form		Function			
	Implicit		Explicit		Explicit		Explicit	Implicit		Example
	Semiotic system	Social system / Ownership system	Ethical / Idelogic	Spatial Quality	Geometry / Arrangement / array	Material	Hierarchy	Plan structure		
Atake door: This was on the southern wall against the Atake house, daughter of Abbas. Inside the mosque, it was initially the place of worship towards Jerusalem, with the Aisheh column laying behind it and towards the north (Elias Abdul Ghani, n.d-B).										
After the Kheibar war and expansion of the Muslim population, the mosque did not have the capacity of worshippers and the prophet ordered it to be expanded. The walls of the mosque were demolished and formed in 10.5*10.5-meter dimensions. Tough, it was previously rectangular. In the expansion plot, the prophet chose the square plot, indicating the Ka'abe form. The square form was mostly seen in the oldest mosques (Papadopoulos & Jazani, 1989).						*	*		*	Mosque
This small house was erected like the mosque by palm tree branches as well as bricks. It had a short ceiling to which hand could reach. It had two unlocked doors, opening, on one way, from the west of the house to the mosque, and on the other way, from the northern side to the outside. Ibn Sa'd stated: There were four houses with walls made of clay and straw (bricks using palm tree branches. They had separate rooms, with the five houses erected out of coated clay branches lacked internal divisions. The upper parts of the doors were decorated with curtains made from black cloths with each angle extending 3 meters. The ceiling could be reached by hand (Elias Abdul Ghani, n.d-A).			*		*					House
Davood Gheis narrated: I saw the prophet's rooms with their wall made of palm branches and its floor covered by palm fibers. The house width was 3.5 meters and its length 5 meters (Papadopoulos & Jazani, 1989).		*			*					House
Many of the companions were unhappy with the house destruction, wishing the houses could stand still for people to see how simple was the prophet's life, and how he was sufficing brick-made houses (ibid.).		*			*					House
The houses were as follows: Hafsah room, the first room a small door of which opened to the House of Omar. On the south, laid the Aishah room wherein the prophet's grave was placed. Then, the Fatemeh room was close to the Gabriel door, followed by Om Salmeh room on the north (Elias Abdul Ghani, n.d-B).						*	*			House

- Using a square model to cover the mosque Shabestan
- Lack of altar and minaret in the Mosque

• An investigation of religious and historical texts about the Al-Nabi Mosque

To achieve a more detailed picture of the Al-Nabi Mosque, as well as to form a sign system, it is necessary to study religious and historical texts (which describe the situation of the Mosque). Therefore in Table 4, For this, in the three sub-layers of meaning, form, and function, explicit and implicit references that can be deduced from the texts are discussed in the table. Also, in Fig. 7, an attempt has been made to record the chronological sequence of the developments that took place in the Al-Nabi

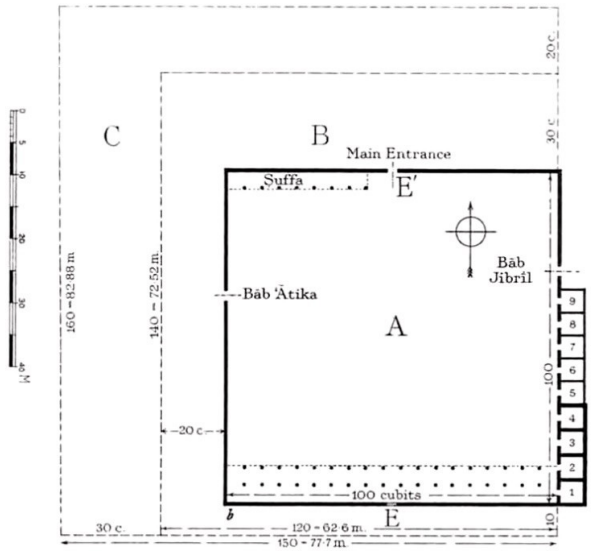


Fig. 6. Initial plan of the Al-Nabi Mosque. Source: Creswell, 1940 .

Mosque during the first century after the Prophet's mission.

It was already stated that the relationship between these two texts can be examined in several different layers after being analyzed and read. Therefore, after reviewing the historical texts in Table 4, an attempt was made to examine the texts with the logical device described in Fig. 5. Therefore, based on the analytical device that was designed, Fig. 8 examines the encoding system of texts and Table 5 analyzes the texts in terms of sign system. To investigate the hypothesis stating that one is regarded as an analogy source and the other as a product of a narration based on the logic governing the narrative method, the following include the examples to confirm this hypothesis:

-The southern part of the Al-Nabi Mosque was covered by data palm leaves and trunks as its ceiling. The ceiling was constructed to avoid the sun (Pirnia, 2008; Helen Brand, 2012). It is important to note that although it was possible to cover the ceiling using such techniques as constructing domes at that period, The Fahraj Mosque used Shabestan in its southern part which is an imitation of the Al-Nabi Mosque (Representing a Shabestan imagery with a data palm trunk that lead to designing Khorasani-style column Shabestan).

- The Al-Nabi Mosque has entrances on the west, east, and north. The location for the entrances in the Mosque can also be seen in the plan of the Grand Mosque of Fahraj, with the western and northern entrances being located in the Grand Mosque as corridors are seen on the eastern side. The eastern entrance of the Al-Nabi Mosque, the house of the Holy Prophet (PBUH) was located in its adjacency, closed down in the following years (Attempt to represent the Al-Nabi Mosque entrances in the Grand Mosque of Fahraj).

- The Al-Nabi Mosque's wall was built as high as the tallest Arab man raising his hands to the sky (Pirnia, 2008; Helen Brand, 2012). The architect who designed and constructed the Grand Mosque of Fahraj was superior to the designs in the Sassanid era, as he has sought to distinguish his design styles from those of the Sassanid era (Attempt to shape the appropriate description of the mosque design).

- The plan of both mosques is characterized by square one by one proportion. The choice of one-to-one proportions for the first mosque and comparison of it with the Al-Nabi Mosque has made this choice totally rational. However, an examination of the plans of the works left from the Sassanid period, including palaces and chapels indicates that the architect was not restricted to confine all the set into a square-like shape (representing the geometry of the Al-Nabi Mosque as a source to shape an appropriate expression for the mosque design).

- As demonstrated by the documents, there were platforms or benches on the northern side of the Al-Nabi Mosque for those having no place for accommodation. For this, on the northern front of the Grand Mosque of Fahraj, platforms are representing the northern side platforms of the Al-Nabi Mosque (representing the social system governing the mosque).

- Another important issue that is indicative of a narrative relationship between these two mosques is the location of the northern entrance of the Grand Mosque of Fahraj in the middle of the northern platform of the building. This

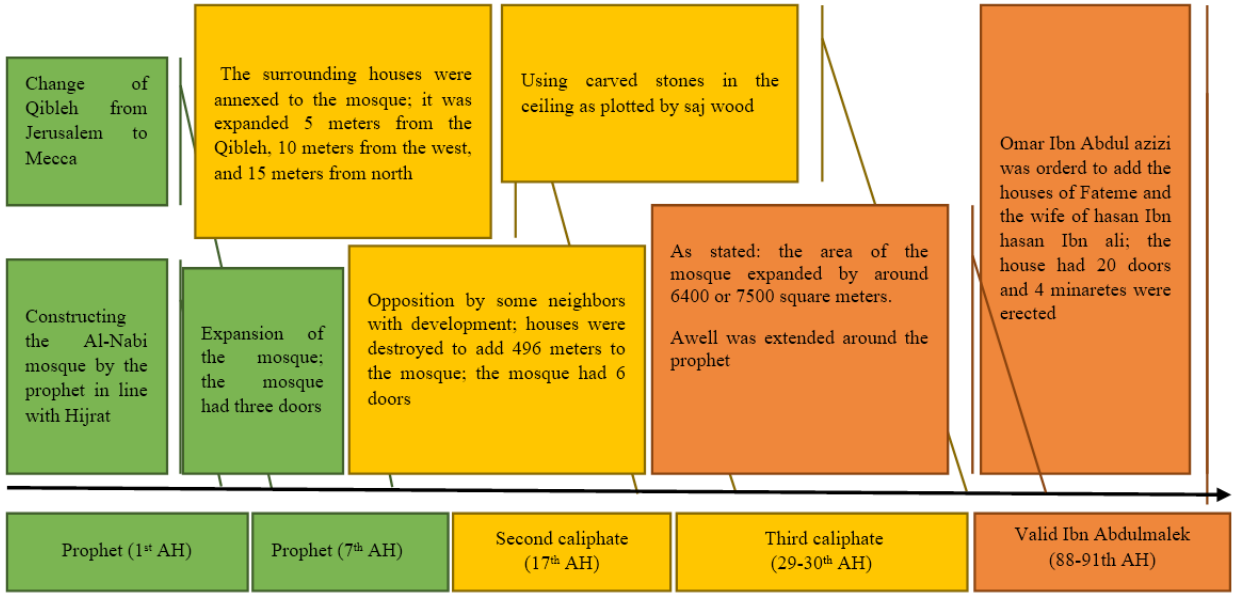


Fig. 7. The physical development trend of the Al-Nabi Mosque. Source: Authors.

combination can also be traced to the plan of the Al-Nabi Mosque. A combination of the platform and the entrance can serve the idea of construction using the Al-Nabi Mosque narration (using common combinations in both mosques).

- Considering the features of Sassanid buildings, either palaces or places of worship, the architect seems to have used arrangements and arrays moderately. As evidenced by reading Iranian mosques during successive centuries, the Grand Mosque of Fahraj is mainly characterized by its simplicity and lack of arrays (Purity and simplicity in both mosques).

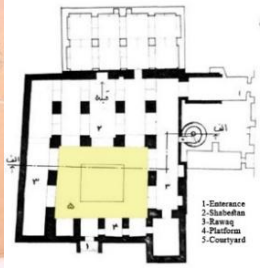
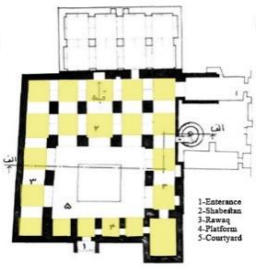
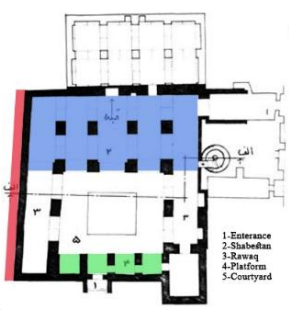
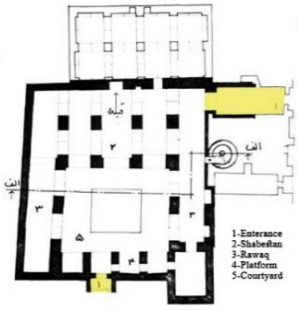
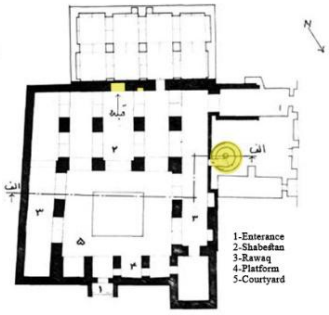
- As Pirnian has stated, the altar and minaret were added to the Fahraj Mosque in the following centuries. One of the most important features of Al-Nabi Mosque is the lack of an altar for its resemblance to Christian places of worship and minarets in it. This may have held true of the Grand Mosque of Fahraj. Elements such as the altar and the minaret have been widely employed in the Al-Nabi Mosque (Both mosques are similar in designs before being developed and expanded during centuries).

- In Fahraj Mosque, the number of columns used to cover the ceiling equals that of columns used for building the Al-Nabi Mosque (10 to 11 columns). This may evidence the designer's effort to refer to the Al-Nabi Mosque to use it as a source (consistency of spatial structures of the mosques together).

- The materials used in constructing the Al-Nabi Mosque were local. Using soil, stones, palms and natural fibers are the main composites mentioned in historical documents. This can also be traced to the construction of the Grand Mosque of Fahraj. In fact, in Fahraj Mosque, like the Al-Nabi Mosque, local materials are used (employing local and environmental materials in both mosques as a hypothesis).

- An important point about the Fahraj Mosque is the three red-colored corridors on the eastern side, which were referred to as some paintings and decorations of pre-Islamic periods. The conformity of these corridors with the rooms housing the wives of the Prophet (PBUH) and using of the red color can suggest the femininity of that part of the space (Zamen bin Shadgham, 2006). The doors involving corridors can be a metaphor for some limits. Of course, one

Table 5. A study of the symbolic system derived from religious and historical texts. Source: Authors.

Form	**Signifier** Employing right-angled forms Employing local materials Employing 1/1 proprtions Using square-based geometry Using shabestan Using yard as a constituting factor Simplicity No altars or minarets Placement of northern entrances in the mid-soffa	**Signified** Using right-sided geometry Employing local materials Employing 1/1 proportions Using square-based geometry Simple organization of plans Addition of altar and minarets in later centuries Placement of entrances in the mid-soffe Using the yard as a building block forthe space
	   	
Functional	**Signifier** Northern and western entrances Spatial structure (soffe in north Shabestan on south, houses in east) Shabestan in north on the soffe Using column Shabestan for covering the ceiling Columns for covering the ceiling Using module as a solution for covering the ceiling No minarets or altars for the primary mosque	**Signified** Blind doors on the eastern walls Simplicity of the Fahraj Mosque Placement of soffe on the northern side for the poor Placement of columns for the Fahraj mosque Arrays indicating from pre-Islamic architecture
	  	
Semantic	**Signifier** Blind doors on the eastern walls Simplicity of the Fahraj mosque Placement of soffe on the northern side for the poor Placement of 10 columns for the Fahraj mosque Arrays indicating from pre-Islamic architecture	**Signified** Hierarchy (house of prophet's wives) Simplicity Intimacy Social links 11 columns in the initial mosque
	   	

should not forget that the corridors emphasize the extension of the space, placing the user in a position where he thinks the space extends even behind the corridors with the mosque looking bigger.

- The location system governing the Fahraj Mosque includes the location of entrances, Sahabestan platforms, and corridors, conforming with the spatial system of the Al-Nabi Mosque. As shown in Figs. 9 & 10, in a way, Fahraj Mosque can be seen to represent a narrative that the architect has had in mind of the worship place of Muslims (one-to-one correspondence between the spatial order governing both mosques).

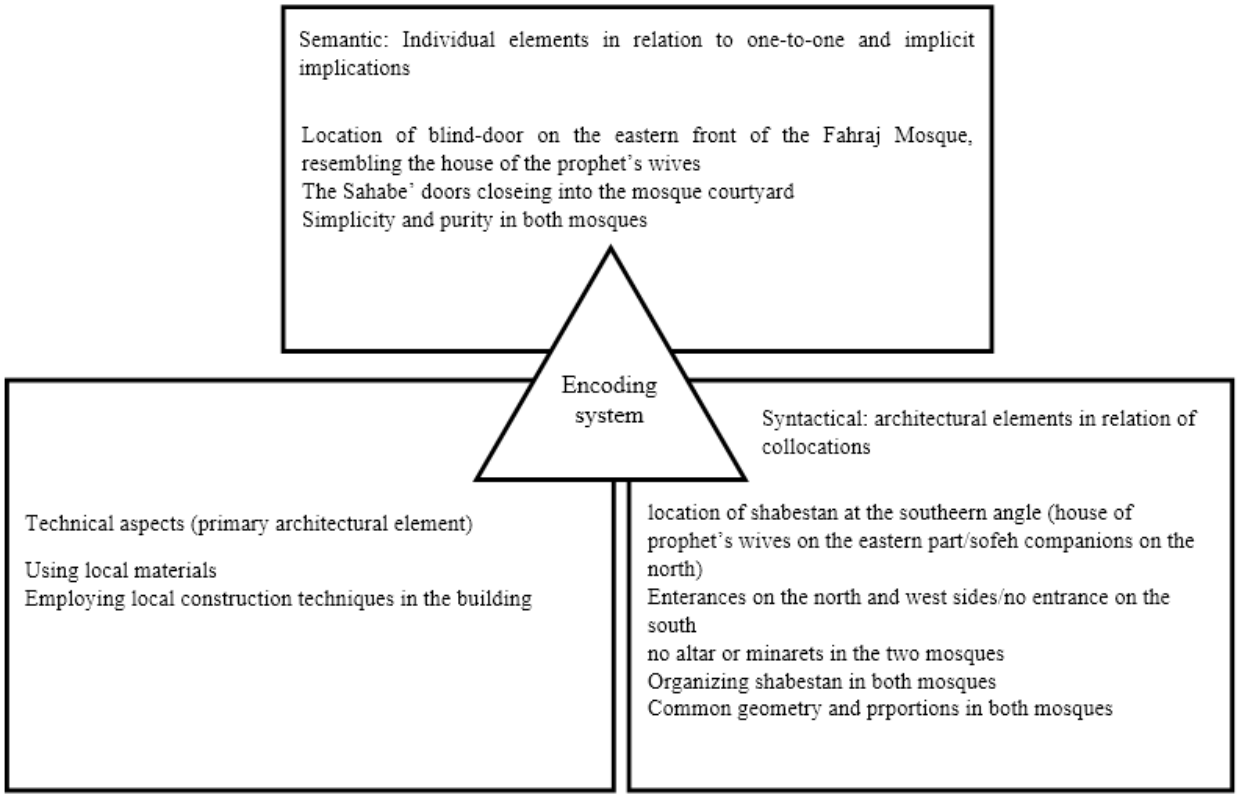


Fig.8. Investigation of encoding system derived from religious and historical texts. Source: Authors.

The most basic features of the Al-Nabi Mosque were transferred to neo-Muslim Iranian architects through a narrative source. For this reason, a semantic and physical layer-based structure has been established as a model of worship building for him. This is a very important subject in the physical transformation that began from the time of the Prophet's life and lasted up until his death. As suggested, developmental work was very limited during the Prophet's life; however, about a century after his death, developments were seen in geometry, the area, minarets, and entrances or reforms were made to the buildings, changing the Al-Nabi Mosque entirely. Thus, one would say that the Iranian architect had acted upon the Prophet's tradition and his conduct. However, after the mosque was constructed, a minaret and an altar were added to the Fahraj Mosque. Juxtaposing the images and texts of the documents from the two mosques, it is possible to suggest that the Grand Mosque of Fahraj was based on a narrative using the Al-Nabi Mosque. The Al-Nabi Mosque has served as an analogical source for the Fahraj Mosque, creating similarities between the two sites.

Conclusion

The findings of the study are discussed in three dimensions. On the one hand, one can speak of the historical and ideological significance of the oldest mosque in Iran which has a direct semantic relationship with one of the early mosques in Islam. Comparing the available documents, one would say that the architect of the Fahraj Mosque has failed to make a uniform decision in some cases, borrowing his syntactical features as well as some physical and decorative elements from the previous architecture, though striving to remain committed to the narrative he had had of the mosque. It is important to understand

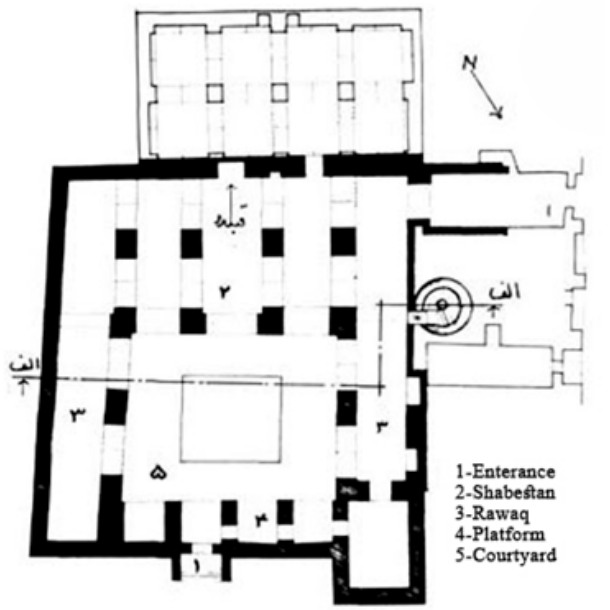


Fig. 9. Comparison of the spatial diagram of Masjid al-abi and Fahraj Mosque. Source: Authors' archive.

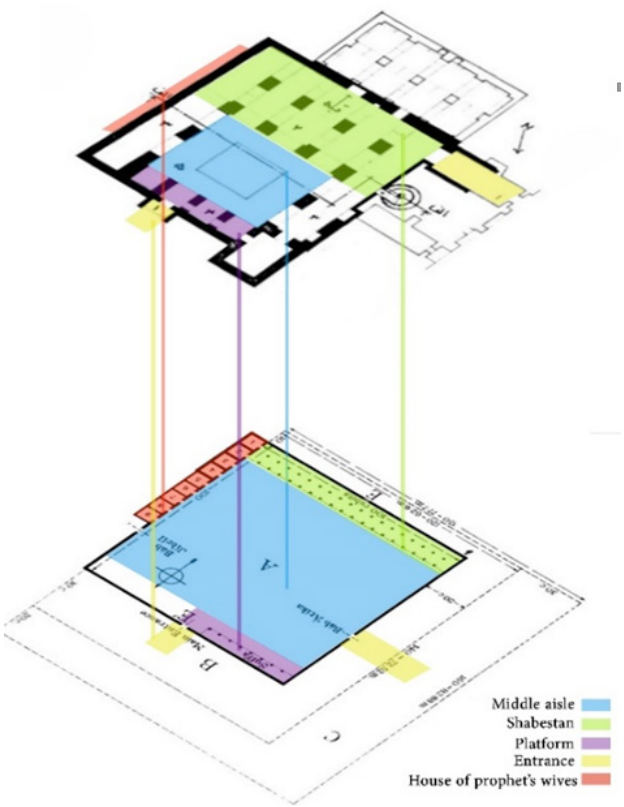


Fig. 10. Plan and section of Fahraj Mosque Source: authors' archive.

such a semantic relationship with the temporal dimension of the subject under study. In fact, this is seen as a manifestation of the Iranian architect's efforts to represent narrative-based mosque designs.

On the other hand, the study aimed to explore a work creation process. In fact, attempts were made to analyze the narrative method Lawson had developed as a timeless technique. Analogy has been used as the central action of the narrative design method and the logical reasoning of the method has been formed based on it. The analogy was used as a central action of the narrative design method with logical reasoning based on its premise.

However, what is important is the way the designing process is viewed. This research is different from others in the way that it sought to explore a historical fact by analyzing a historical architectural work. For this, it aimed to understand the process governing a work and the analogies used in it. The research used a narrative-based design to show that the Fahraj mosque was built from the Al-Nabi Mosque.

Endnotes

1. Aisha, who was called Umm Al-Mu'minin, was one of the influential women of the Prophet, and as narrated by Salem ibn Abi Ja'd, one day the Prophet announced the revolt of some of his wives. Aisheh laughed at this. The prophet said to her: Be careful O' Aishah. Then he turned to Ali to check the affairs.

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