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A Qualitative Study of Implications of Meaning in Hawraman-Takht Architecture from Semiotics Perspective*

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Abstract

Meaning is the fundamental requirement of the human and the architecture as a signifying process in the cultural context tries to realize this aspect of human requirement by emphasizing on the intellectual specification of human mind and the exterior form and structure of the environment. The semiotics is an approach that looks beyond the meanings and seeks for the implicit significations and the layers of meaning in the phenomena. Hawraman is a valuable settlement with multiple residential areas that have a significant role in defining the cultural values of this country especially in the field of architecture. Ignoring the meaning implications in the physical improvement of settlements can lead to negative outcomes in tourism attraction. Thus, it is necessary to answer the following question: “what are the special meanings and semantic implications in the formation of the Hawraman-Takht architecture in Kurdistan of Iran in terms of textual and semiotic points of view?” This research aims to discover and formulate the meanings of Hawraman architecture and the meaning system that can be derived from signs/representations to be used in future improvement and renovation programs of the region. The semiotics is used as an interpretive system and the approach of this research while qualitative methodology was employed for system analysis, and grounded theory was used for data analysis and presentation of the final theory. In this regard, Hawraman architecture, as a text, was studied in the following five systems: establishment, structure, space and performance, movement and access, and landscape. Representative elements and components of these systems were identified and were open-coded under 43 initial concepts. In the next step, each of the signs/representations was interpreted and its subject was determined in some levels of meaning under the codes of social, scientific and aesthetic by using axial and selective coding. Finally, 11 major categories which represent sociability of this architecture were identified and formulated. Ultimately, through integrating, comparing, and contemplating in these categories, a core category entitled “Hawraman architecture as a social phenomenon to promote collective life” was selected as a symbolic meaning for Hawraman-Takht architecture in Kurdistan of Iran.

Keywords

Meaning, Architecture, Semiotics, Grounded theory, Hawraman-Takht.

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Introduction and Problem Statement

"Meaning is a fundamental requirement for human beings" (Schultz, 2012: 531), and semiotics is an approach that looks beyond meanings. "Man is among the creatures of nature that strongly desires to be meaningful and to create meaning through the production and interpretation of signs." (Chandler, 2013: 41). In this regard, architecture is a sign/representation of human thoughts that interprets the world and human worldview through symbolic means. Following the population growth and the expansion of settlements in Iran during the past few decades, a special paradigm in the field of art and architecture has been emerged in which the semantic aspects and levels of architecture are disregarded and sometimes forgotten. In this approach, architecture is degraded to a manifestation of form in practical, cultural, social and economic conditions, according to which the relationship of man and the man-made environment has diminished. For instance, in the geographical area of Hawraman valuable human settlements exist that represent the realities of human life and encompass a wide range of values. Regarding the rapid development, the hidden values of these fabrics have been neglected, and this elaborately cultivated land has become an endangered legacy.

According to the aforementioned ideas and regarding the dispersed and inconsistent researches carried out about architectural semiotics in this land, the present research tries to analyze the architecture of Hawraman-Takht in order to decode and formulate semantic implications in terms of semiotics, and to reveal the different representations and production of meaning in this area. Therefore, after studying the concepts and foundations of semiotics in the theoretical literature and research methodology, the spatial experiences in the structure of single buildings and the spatial relationship of the buildings are studied in a macro scale. To achieve the research goal, the followings will be proceeded: 1- A contextual view to architecture in order to understand its relations and meanings in terms of semiotics. 2- Formulation of a scientific method for semantic reading of architecture

in qualitative method using semiotic knowledge. 3- The discovery and formulation of the meanings in Hawraman-Takht architecture and the semantic system derived from its signs / representations to be used in renovation and modernization programs.

So the current research seeks to answer two main questions:

- 1- How can the architecture be semantically read using textual signs and semiotic system?
- 2- What are the specific meanings in the architecture of Iran's Hawraman-Takht of Kurdistan in terms of semiotics?

Research Background

Considerable research has been carried out in western countries and in Iran in the recent decades about the semantic implications of architecture in terms of semiotics. There are also various researches that specifically address the semantic implications of architecture in terms of semiotics; However, they are limited to reviewing the literature of semiotics and the implications of meaning in architecture and ultimately do not attempt to create a connection between these themes and theoretical foundations of architecture or to provide a method for reading architecture based on semiotic ideas (Walker, 1987; Moustafa, 198; Aqili and Ahmadi, 2011; Sasani, 2012; Soheili, 2014). Some other researches investigate the features and differences of diverse types of semiotics in architectural readings (Pellegrino, 2006; Ghafari and Falamaki, 2015; Dabbagh, et al., 2011; Dabbagh, 2011). Other studies focus on presenting the differences and similarities of perceiving environmental meanings in different social groups, or introducing author-centered and authoritative attitudes in the process of understanding an artwork (Kazemi and Behzadfar, 2013; Raeesi, 2010), or investigation of a specific function (such as residential function) among which and architecture has not been considered as the subject of study (Noghrekar & Raeesi, 2011; Raeesi, 2013; Dabbagh & Mokhtabad Amrei, 2014; Shafik Ramzy, 2013).

Finally, in empirical research on the meaning of Hawraman, some writings discuss non-architectural issues and phenomena such as the semantic understanding of the phenomena of modernization and globalization-localization in Hawraman, which are helpful in terms of research methodology (Mohammadpour and Rezaei, 2009; Azkia, Vosoughi, and Abdollahi, 2013).

Nevertheless, the studies of the Hawraman architecture, which are very few, merely deal with the semantic implications of a visual factor (color) or the explanation of the semantic potential of a ritual (Pire Shaliar ritual ceremony) to create a sense of place and cultural landscape (Pourjafar et al., 2009; Memarian, Azimi, & Kaboodi, 2014; Hanifi, Ebrahimi Dehkordi and Beladi Dehbozorg, 2015). Therefore, two fundamental issues should be highlighted: Firstly, all the studies are carried out by adopting an external, urban, spatial, and physical planning approach to address the meaning of architecture and none of them have investigated the semantic processes of finding the meaning through emic or experience-based approach according to the residents' experience. Secondly, the case study research in this field has mostly analyzed the physical and spatial aspects of the individual monuments or fabrics; hence, indigenous architecture, especially rural areas, has not been the subject of investigation.

Theoretical Foundations and Conceptual Model

• Semiotics as a Method of Text Analysis

Knowledge in its broadest sense is the study of the formation and exchange of meaning based on the system of signs" (Sojoodi, 2011: 128). "Semiotics is the science of studying the system of signs such as languages, codes, symbols, etc." (Guiraud, 2013: 13). It is a science whose aim is to understand the conventions and the functions of the system of signs that shape the human world. In other words, "Semiotics considers the objects or acts that are the signs of a culture, and thus tries to create and recognize the rules and conventions that are deliberately or unconsciously

internalized by the members of that culture and the meaning of the phenomenon" (Culler, 2011: 76). "Semiotics is a method of text analysis. But then again, semiotics looks for text analysis in the form of structural totals and in search of implicit and implicit meanings" (Chandler, 2015: 29).

Signs according to Pierce

"The sign ... (in the form of representation) is something that conveys a meaning regarding its direction or capacity, according to an observer (Pierce, 1931, quoted by Sojoodi, 2014: 21). Pierce introduced his three-dimensional pattern of signs which includes representation, interpretation, and object:

"Representation (presentation): the form in which the sign is presented (and it is not necessarily materialistic).

Interpretation: Not an interpretant, but the meaning that is derived from the sign.

Object: to which the sign refers.

The interaction between representation, object, and interpretation is called Pierce's "Signification" (which may be called the whole process of meaning) (Sojoodi, 2014: 21 and Chandler, 2015: 61).

There are different presented categorizations of signs. One of these categorizations is the Pierce's triad categorization which divides the signs into icons, indexes and symbols, which is still considered a reference in semiotic studies. "It should be noted that there are no decisive lines separating between these three forms of sign: a sign might be an icon, a symbol, an index, or any combination of them" (Chandler, 2015: 75) which play several different roles at the same time. According to Pierce, every sign creates another sign (signifier) that should be interpreted by itself. In this way, signs create other signs, and the meaning of any sign is interrelated to the meaning of another sign. "In fact, the meaning is in a chain of scattered implications" (Zaimran, 2016: 40). Umberto Eco calls the concept of uninterrupted sequential interpretations as "Semiosis", meaning that a signifier can act as another sign of its own (Diagram 1).

Codes

"Codes are interpretative templates used by their producers and text interpretants" (Zaimran 2004: 135). "The codes create a framework in which the signs become meaningful and a relationship between the sign and the signified is created" (Majedi, Saiedeh Zarabadi, 2010: 51). Accordingly, in order to discover the meanings and decode the signs in every cultural network, using the special codes of that system is inevitable. Several classifications of codes are presented, one of which is the three-fold codes of Scientific (logical), Social, and Aesthetics (Guiraud, 1392- Danesi, 2007) which is in congruence with Peirce's categorization.

Scientific codes have essentially a single meaning due to being confined by constraining contracts. In other words, the logical or indexing signs are related to an objective perception of the outside world. However, "the aesthetic signs are much less confined than the conventional logical signs because of their iconic character, and therefore, fewer of them are codified and socialized. This attribute gives the power of creating the aesthetic signs" (Guiraud, 2013: 97). Moreover, "the social codes are a kind of social organizations and signifying societies." These codes represent human beings and groups and their interrelationship" (Guiraud, 2013: 116) and represent themselves through symbolic signs (Diagram 2).

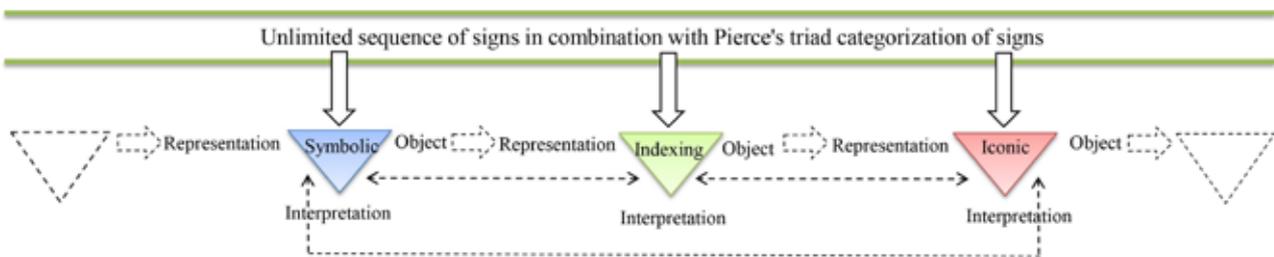


Diagram 1. Unlimited sequential expressions of signs. Source: authors according to Peirce's theory. Source: authors.

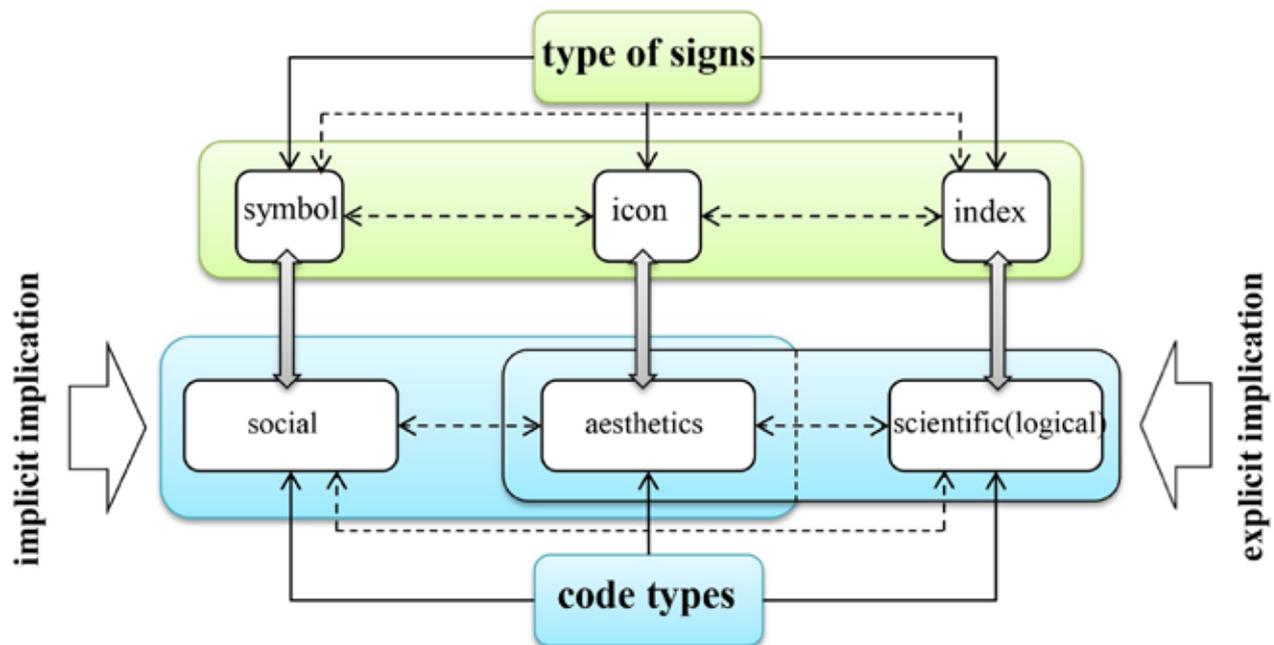


Diagram 2. Relationship of signs and codes. Source: authors.

Meaning

Meaning is a key concept and meaningfulness is one of the main factors in evaluating the quality of architectural spaces. "Meaning is a sensory-perceptual incident. The sense of the subject interacts with the sense of the world, and the result of this interaction is the aesthetics that make sense" (Gross, 2010: 8). "Meaning is resulted from the subjectivities that create stimuli for the addresses after comparing it with his/her own experiences, goals, and purposes" (Habib, 2006: 7). Generally, meanings can be categorized into two levels: 1) explicit meanings; 2) implicit meanings (Sojoodi, 2014: 71; Guiraud, 2013: 47; Zaimran, 2003: 119). "The explicit implication is what individuals are involved in with their minds after facing a phenomenon." (Panofsky, 1970: 51-53, quoted by Zaimran, 2003: 119). Nevertheless, "the term implicit implications or subjunctive meaning relies more on the cultural-social and historical aspects of a signifier" (Zaimran, 2003: 120), and they can also be called as valued or symbolic meanings.

Architecture as a text

"A linguistic approach to architecture has shown that the city and the buildings can be considered and interpreted as a text" (Roshan, Sheibani, 2015: 152). "A text is a physical phenomenon, but not a definite one. A text is composed of several layers, each of which is a literal and a textual representation of a code" (Sojoodi, 2011: 334). Every syntax with an encoded function and message can be considered as a text. "A like a text, architecture offers a world of ideas and values of design to the addressees in its own language" (Dabbagh et al., 2011: 60). The words of this text are structural elements, buildings, masses and volumes, collective spaces, open spaces, paths and nodes, which provide a single whole for being interrelated. They imply their message through the logical, aesthetic, and social codes. Therefore, anything that can be identified as a distinguishing element of a sign in architecture, can be represented and symbolized in all forms of icons, indexes, and symbols.

Architecture is an integral whole shaped to meet the needs of its inhabitants whose natural, artificial and human aspects of life are inseparable. In addition, "a village is an integrated phenomenon, not a collection of combined elements. However, the limitations in the scientific study of a phenomenon require us to analyze and classify the village into the separated elements and factors that affect the formation of the village" (Haji-Ebrahim-e-Zargar, 2007: 31). Therefore, in order to describe the different aspects of architecture, the present research identifies and introduces five categories of a settlement, construction, space and function, movement and accessibility, and the landscape to fully cover the concept of architecture as a united whole. It should be noted that there are no vivid separating lines between these five systems, and the components of each system have a decisive role and influence in shaping these settlements as a whole (Diagram 3).

The Conceptual Framework of Research

In order to achieve the research goals and consider the different aspects of signs in Pierce's theory, the theoretical framework and the conceptual model of the research can be formulated in diagram 3.

Research Methodology

In general, the study is carried out in a qualitative research method in semiotics approach, and the ethnographic method has been used to carry out research activities and field studies. The main purpose of using ethnographic method as the main method of this research, is to present a "deep description" of the underlying reality. The achievement of this deep description requires use of the techniques and tools that can organize and adjust the collected data to achieve the theory based on the obtained data and facts. This kind of theory is called grounded theory. "The purpose of the grounded theory is to find the theory directly based on the extracted data that have been systematically collected and analyzed during the research. In this method, data collection, analysis, and final theory are closely related" (Strauss, Corbin, 2013: 34).|

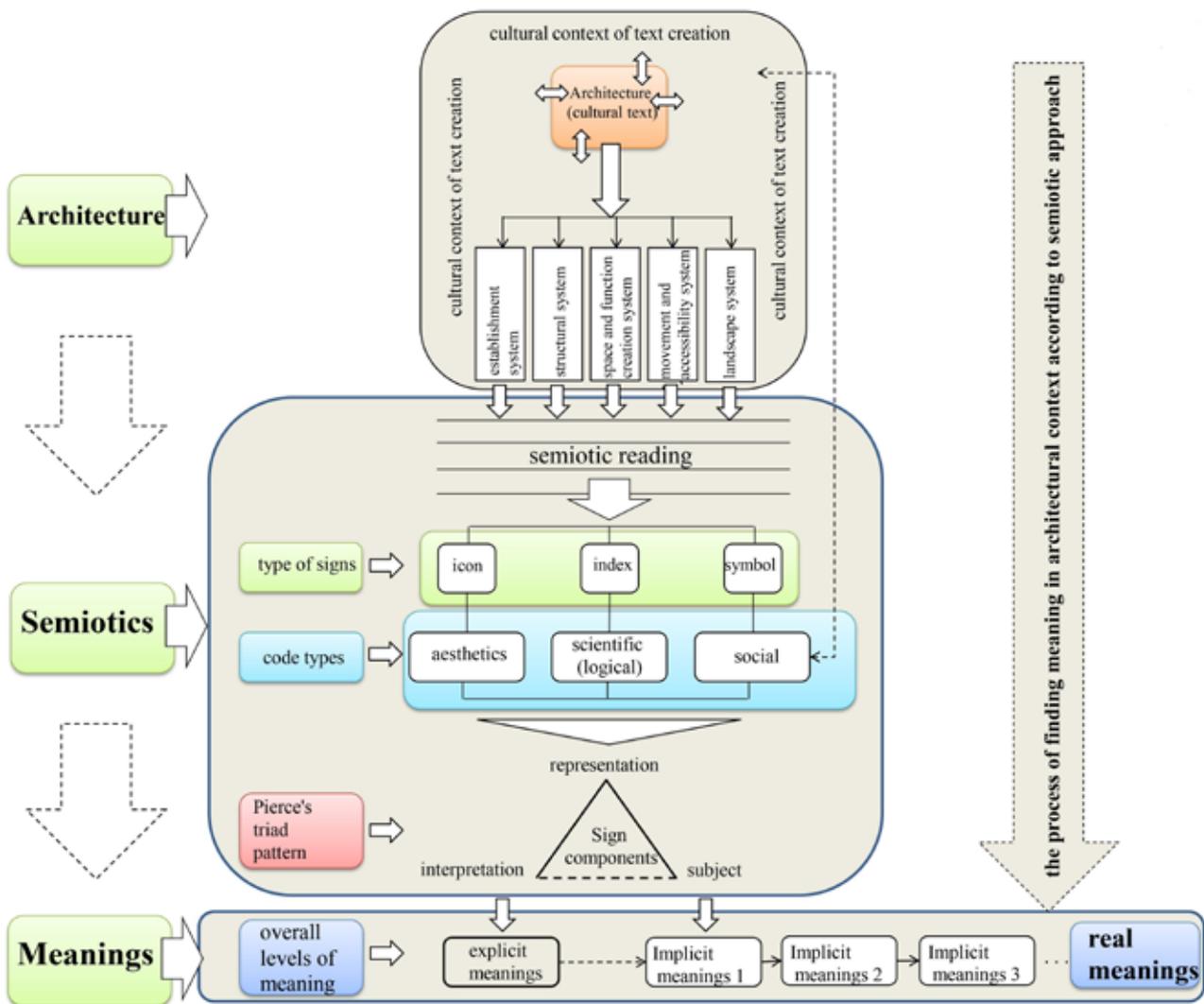


Diagram 3. The conceptual model and theoretical framework of research. Source: authors.

In order to collect the field information in the context based on ethnographic method, multiple proceedings have been carried out including interviewing, deep observation of spaces, taking images, sound recording and providing documentaries, as well as following library research and document research to compile the literature and theoretical basis of the research. The present study will use the coding method in order to analyze the collected data and information and to achieve a deep description for formulating a grounded theory. In other words, in the first step, the recognized signs/representations are interpreted through open coding and their subjects are identified

according to the triad. In the second step, the axial coding is used to link between the identified concepts and their categorization. In the following, the categories are linked to each other by using selective coding to create the main part of the theory and to finalize the grounded theory by providing a broad set of theoretical issues. The central point in this section is the use of the semiotics method in transforming codified concepts into axial categories and core category; because the correct concepts and architectural implications can be read and the representations can be interpreted and the objects can be identified and elaborated based on the type of

selected codes (Diagram 4).

Due to the depth of the ethnographic method, confining the scope of the study is necessary, because the study can go in depth only in a limited realm. The present study investigates Hawraman-Takht village of Sarvabad in the province of Kurdistan in Iran, which includes five villages whose names are: Vaisian, Sarpir, Howraman-Takht, Kamaleh, and Rivari (Fig. 1).

The method of collecting the samples in the field-qualitative investigations is qualitative sampling, which is also referred to as the purposeful sampling or theoretical sampling. In this sampling method, which is specific to the field-qualitative research, the sample size depends on the theoretical saturation of the questions. “Saturation means that no new and important data is obtained, and the categories are well-developed in terms of features and dimensions” (Strauss et al., 2013: 233).

In addition to being present in the space, deep field observations and field studies on the overall structure of the architecture, the documents, and drawings of ten residential buildings of the prevalent types were put into deeper scrutiny, and open interviews were conducted with 27 of informed local people.

Operational Model of the Research

The operational model of research, which is based on the conceptual model and methodology of the research, provides the context of formulating a grounded theory. Diagram 5 shows the operational model of the research.

Hawraman

The historical region of Hawraman is a mountainous geographic region with an area of 1840 square kilometers (Mahmoodi, 2016: 38) a part of which is located in Iran, in Kurdistan and Kermanshah provinces, and another part in the east of the Kurdistan region in Iraq. Hawraman region of Kurdistan Province, located in the city of Sarvabad, consists of two parts: Hawraman-Takht in the central part of Hawraman city and Hawraman-Javaroud. “The name of the city, Oraman or “Hawraman” consists of two parts (Hawra) or (Ahura) and (Maan) meaning home, place, and land. According to the people of this area, Hawraman was once a large city with a special center; therefore, it was considered as Takht (the center) of the government of the Hawraman area” (Pour Jafar, et al., 2009: 11).

Selecting this region for doing a case study is

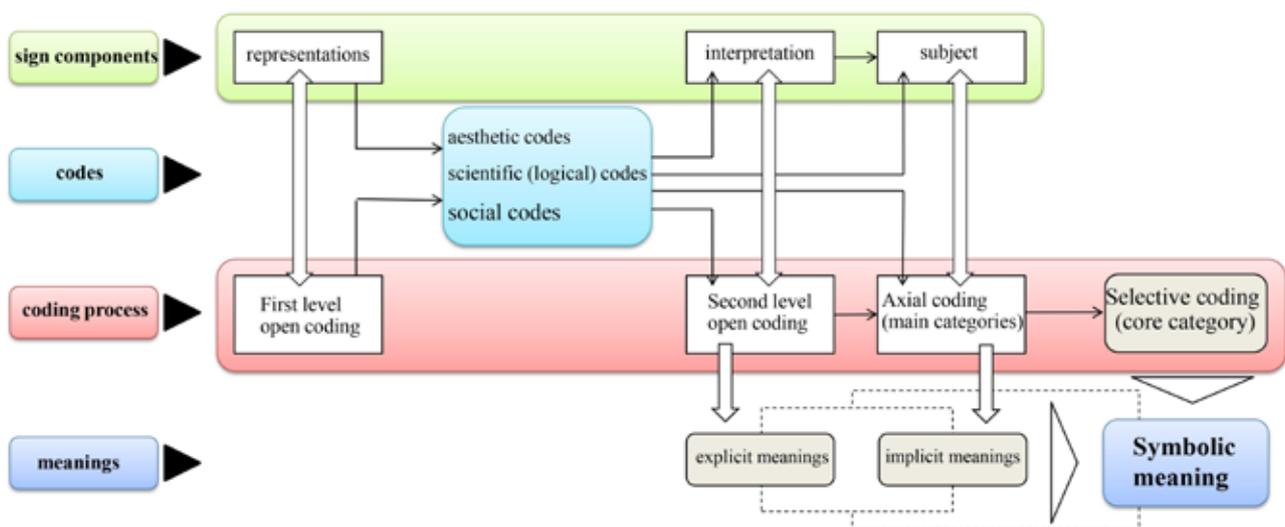


Diagram 4. The coding process in combination with semiotics to read the signs. Source: authors.

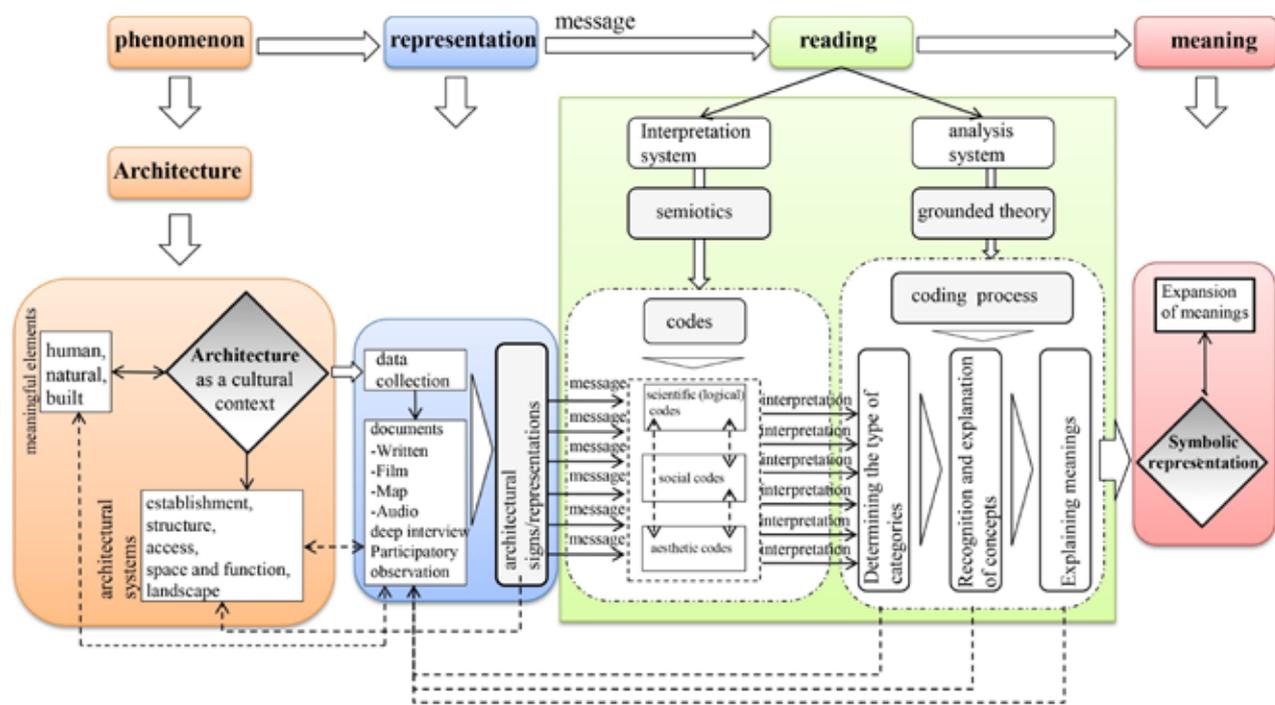


Diagram 5. The operational model of the research based on the theoretical framework of the research (conceptual model). Source: authors.

important in several ways: firstly, the Howraman area is geographically and ecologically distinct from other regions of Kurdistan. Its mountainous and harsh geographical conditions have affected livelihood, lifestyle and architecture. Understanding these features, characteristics and its effects on the architecture of the area is very important. Secondly, the architecture of the Kurdish territory, although more or less studied by researchers in its physical structure, has not been studied in its origins especially in terms of meaning (Fig. 1).

Discussion and Research Achievements

"Perhaps in the first encounter with this mountainous architecture, the minimal spaces look so simple for a life; however, deeper explorations reflect the existence of a fine collective intelligence beyond the architectural elements. This is due to the fact that each case is examined from several aspects and the most appropriate option is implemented" (Memarian, et al., 2014: 56). Accordingly, the Hawraman architecture has been studied in detail in

five categories of establishment, structure, space and function, movement and accessibility and landscape, in order to explore the semantic implications, which are briefly summarized below.

Establishment system

The interaction of various natural and environmental factors and their complex relationship are the main factors in the establishment of rural establishment. In Hawraman, villages form an interconnected tissue that is located on a mountain slope. However, as a result of experience and wisdom, the slope has provided an opportunity instead of being a confining element. In this regard, the overall tissue of the villages is formed in congruence with environmental factors, on the steep slopes to the south, creating a distinct whole as a setback architecture. In addition to the proper and desirable sloping of these establishments in micro and macro scale, paying attention to the position of the river and the southern gardens in locating the village is a prominent aspect in the establishment of this architecture (Fig. 2 and 3).



Fig 1. Geographic map of the studied villages. Source: authors.

This type of establishment provides some of the climatic and ecological needs, which are also influential factors in the establishment of the system, and allows for continuous connection with nature and perception of the human environment. “Nature perception has a significant effect on the sociability of space, causing emphasis on space and resulting in formation of activity centers in particular points of the space” (Daneshgar Moghaddam, Bahrainy, Einifar, 2011: 34).

Structural System

In the structural system, materials with different types of color, texture and layout are used to construct buildings. In Hawraman, due to being distant from urban centers, the lack of access to the roads, and unfamiliarity with construction technologies and artificial building materials, the use of natural materials such as wood, stone and soil, especially natural limestone of different thicknesses, without mortar, have become one of the physical indicators of the region’s architecture for in construction of mainly two-storey buildings (Fig. 4).

Stone walls and wooden ceilings cause physical and visual affinity in the pathways of these rural tissues which create a sense of harmony in the landscape and the overall view of the village. The use of natural materials based on their essence and entity affects the comfort caused by physical environmental variables such as temperature, natural ventilation, etc., and

influences the human perception of nature in the places of activity (Daneshgar Moghaddam, et al., 2011: 33).

Movement and access system

When we consider the origin and the destination of the concept of a place, the image of our mental institutions are very important. Amos Rappaport considers the mental maps as the origin of the imagination of people, and believes that movement in the environment is the starting point of understanding the environment and constructing a mental map. Especially for pedestrian navigation, which allows you to take fuller images of the environment (Rappaport, 1980). When the mind conceives habitats in which a sense of “presence” is felt, social, historical, personality, identity and natural elements become tangible and makes sense. In Hawraman, the access and movement system is pedestrian-oriented. Despite the sloped formation of the rural texture in Hawraman, paying attention to the organization of empty and occupied spaces at different levels of the site provide adequate and proper areas for quantitative and qualitative movement, access and pedestrian presence.

Using the roof of the southern units as the yard of the northern units, and using the courtyard of residential units as the public passageway, and absence of boundaries between yards are the most influential factors in creating ease of movement and walking in the whole fabric of the studied villages. The passages

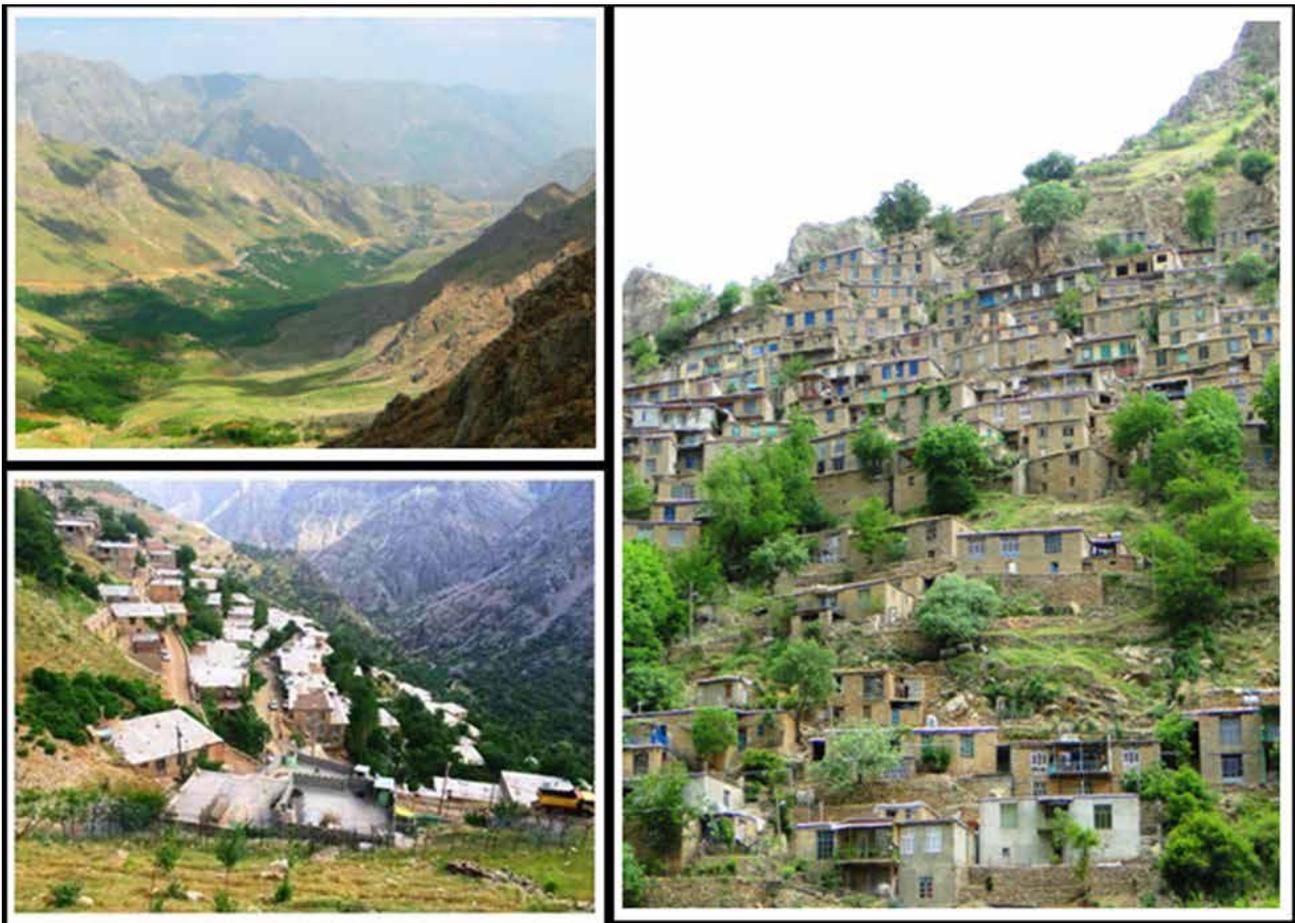


Fig. 2. Representations of the regional establishment system. Source: authors.

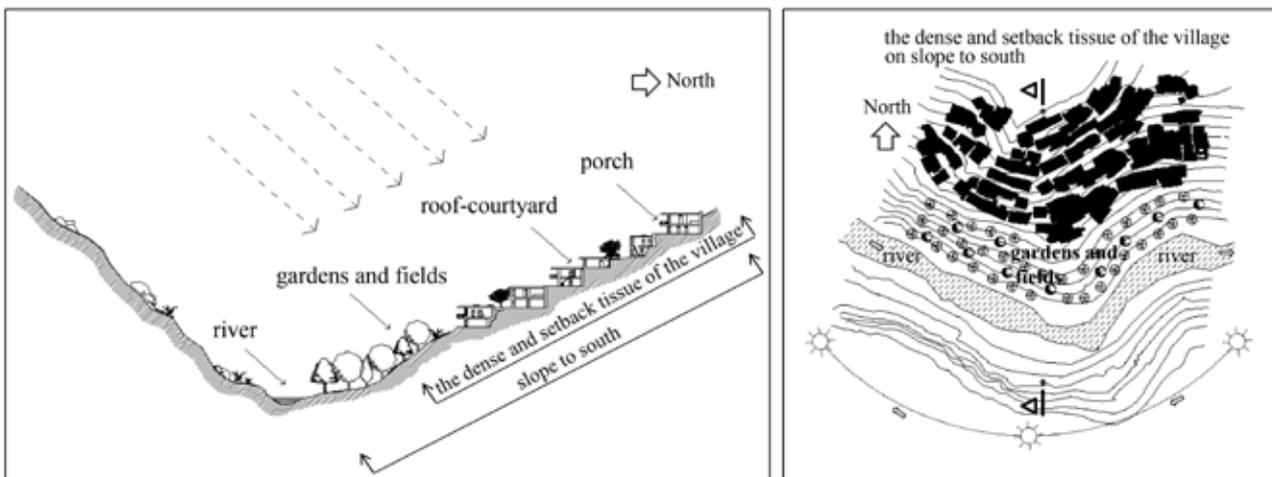


Fig. 3. The pattern of village tissue on the site and the section from village interaction with natural factors. Source: authors' drawings.



Fig. 4. Stone, wood and soil are the main materials of construction on Hawraman. Source: authors.

of Hawraman villages which are generally pedestrian passageways, gather different groups of inhabitants with different thoughts, feelings and perceptions of space, age, gender, and abilities together. These passageways are their place of participation in collective life where livelihood is continuously going on (Fig. 5). Multiple behaviors such as playing, talking, sitting, recreating and interacting in social behaviors, as well as various types of functions and collective needs, and most importantly, the daily activities of families take place in these passages/courtyards. Moreover, the visual control of residential spaces on the passageways, due to the slope, and the general supervision on passageways provides social and psychological safety for residents. "These pedestrian-oriented characteristics have a great influence on the quantitative and the qualitative formation of various types of social interactions and the improvement of quality of life for citizens" (Poormokhtar, 2013: 91).

Spatial and Functional System

"Rural settlements are placed-spatial phenomena that are the result of human interactions with each other and with the environment. They are in interaction with their internal elements (natural, social, economic, physical, space) and external systems and forces" (Moradi-Astalakh-Zir, 2015: 381).

The architectural style of residential units and other spaces of activity in the countryside is influenced by the local environment and the experiences and wisdom of the rural community. "Rural life and the

attitude towards the world and nature, the equipment and knowledge of the inhabitants in production, and their methods of exploitation, make them to arrange the elements of the environment in the most desirable and at the same simple and efficient way through which rational relationship between the elements is established. The physical spatial organization of the village, which reflects its social, economic and physical values, is shaped due to this form of function" (Sartipour, 2005: 44).

In the architecture of Hawraman, the living space of the inhabitants is blended with the natural environment, its livelihoods and economic activities. This combination of functions in a single building is achieved through separation of living space and living services in the first and second floors in an ultimate simplicity. The living space is located on a higher level, so that the residents would benefit from higher spatial quality and light, view, structure, etc (Fig. 6). The ecological issues, observance of the human scale and proportions, and most importantly ensuring continuous communication with nature are the factors whose purpose is to provide physical comfort and psychological safety of the inhabitants, at the initial levels of meaning in the design and construction. At the next levels of meaning the significance of functional spatial structure of the social aspects is revealed. The emphasis on establishing social interactions is evident in all areas of the human environment, including private, semi-public and public spaces.



Fig. 5. Using the roofs as passages, family and public space. Source: authors.

Landscape system

"The environment and landscape in natural and man-made forms are an obvious expression of the activities, expectations and interconnectedness of the inhabitants to that environment" (Tabibian, 2003: 42). "On the one hand, the landscape is a living and dynamic being that is influenced by man and his relation to the environment. On the other hand, it is the recollection of memories that have influenced the relationship between man and the landscape for a long time, followed by the change of culture and civilization of human beings" (Mahan and Mansouri, 2017: 26). The landscape refers to the tangible and the perceptible atmosphere of the surrounding environment, which consists of natural and human environments. In another sense, it implies a favorable mentality that manifests itself in the interaction of human beings and the physical surrounding environment. "Therefore, in a transcendental conception of the landscape, it is considered an objective-minded phenomenon that is brought about by our perception of the environment and our mental interpretation" (Mahan et al., 2017: 26). In fact, "landscape is an image with the mentality and meaning that directs the observer to another horizon" (Mansouri, 2005: 69).

In Hawraman, the human environment is formed in a natural context, in its interaction and full compatibility with its elements and respecting the artistic and aesthetic considerations, where nature has become an inseparable part of the architecture (Fig. 7). This architecture has shaped its identity in

this combination. In this place, the everyday life is a spectacle, and a general form of pure nature, or a "place" in the heart of nature, which is visible from a combination of natural elements. In such places, the public view and vision will realize memorability and sociability (Fig. 7).

Conceptualization and Data Coding

Having reviewed these five systems in detail, open interviews and extensive field researches were carried out in order to achieve the research objectives. According to the documentation, drawings and maps of the existing fabrics in, the plans of ten dominant types of residential units were scrutinized in detail. The textual data derived from these studies were presented in rows and the documentation was reviewed in detail in order to derive the categories and initial statements. The representation elements of each system are identified and coded according to Table 1. Subsequently, each of the subcategories obtained at the first level was coded again in order to extract the basic concepts at the second and third levels by using social, scientific and aesthetic codes, so that the data be interpreted and assigned in several layers of semantic meaning (explicit meaning and implicit meanings of the first level). Obviously, at this stage, each sign / representation can have an explicit meaning as a symbolic interpretation of the sign or it can have multiple implicit meanings as the object of the sign (Table 2).

After the abstraction of concepts from the statements,

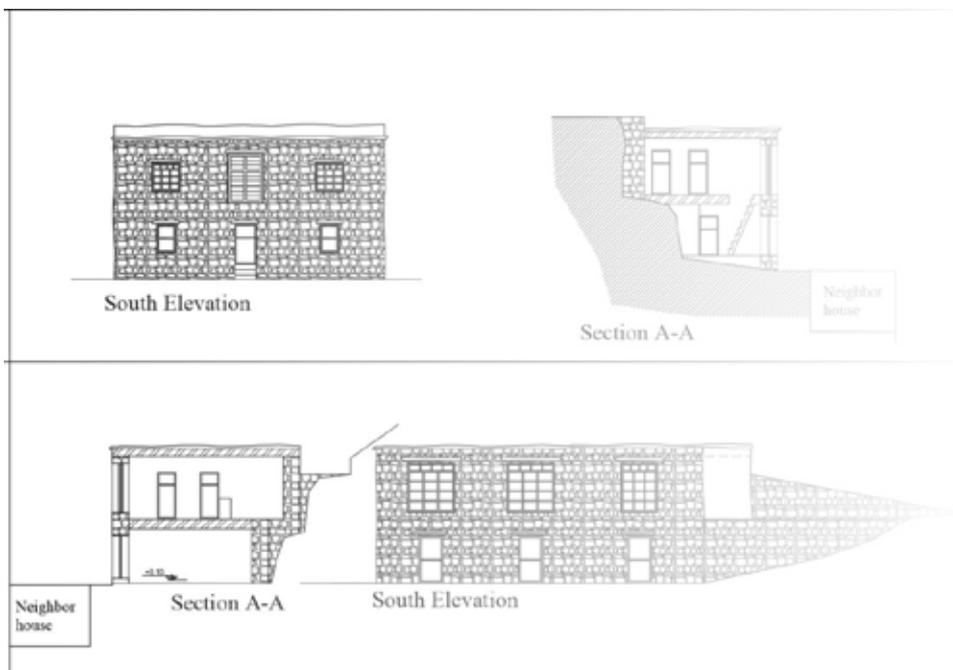
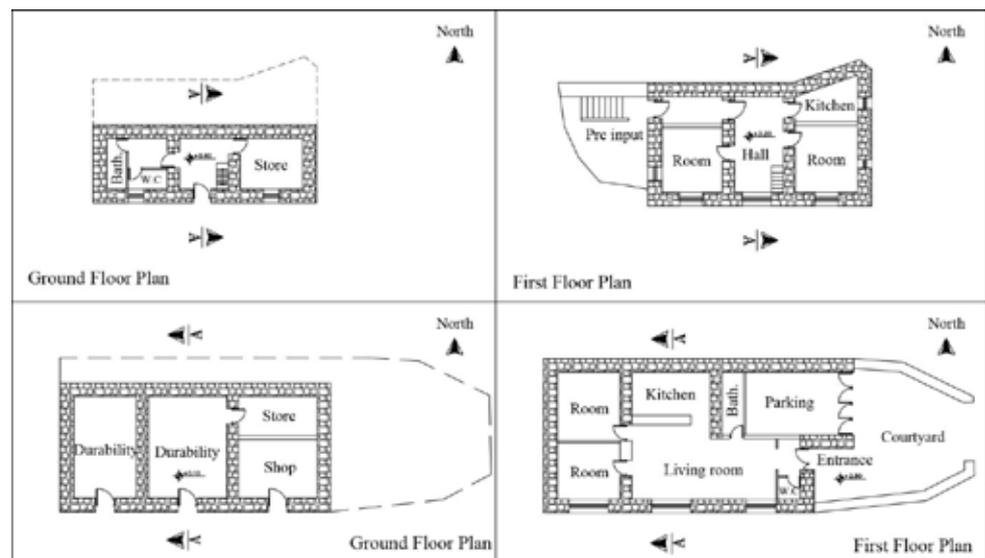


Fig. 6. A part of single building survey of the studied village. Source: authors.

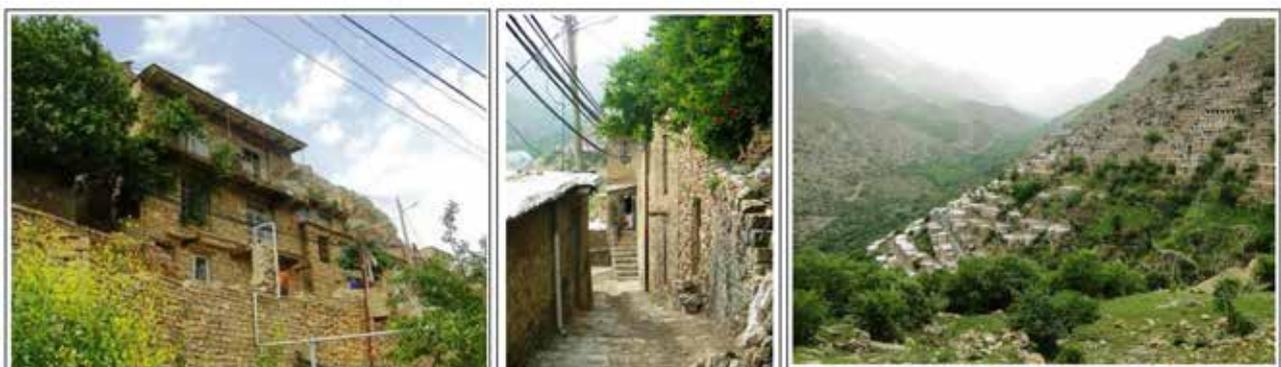


Fig. 7. Hawraman rural landscape combined with nature. Source: authors.

Table 1. Conceptualization of the research data (first level coding). Source: authors.

Architectural systems	The elements of the representation of the signs in each system First level opens coding (Conceptualization)	The codes of representation of sign
Establishment system a	Location of the rural tissue on steep slopes to the south and creation of setback architecture	a1
	Settling and establishment among nature	a2
	Dense tissue	a3
	Locating of the village according to the river and the structure of gardens and fields in the southern domains below the village level	a4
	Continuous rows of buildings in the East-West direction	a5
	Buildings and main roads are aligned in rows corresponding to the topographic lines	a6
	Entanglement of residential units in the rural tissue	a7
	Placement of the northern part of the building in soil	a8
	The southern buildings do not cast shadow on the northern buildings	a9
Structural system b	Stone and wood are the main materials of the buildings	b1
	Use of thick walls to in buildings	b2
	The use of layered stone in a regular system for construction of walls	b3
	The use wooden beams in stone walls and mostly in the corners of the walls	b4
	Multi-layered thick wooden and mud ceilings	b5
	Participation of family and community members in the construction of residential and public buildings	b7
	Apply blue and green colors to the openings	b8
Movement and accessibility system c	Using the roofs of buildings as general public pathways	c1
	Applying the roof of the southern unit as the courtyard of the northern unit	c2
	No boundaries between the courtyards of the units and the general public pathways	c3
	No boundaries between the courtyards of the neighboring units	c4
	The existence of open spaces in different regions of the tissue	c5
	Consisting of the main roads with slopes	c6
	The row of buildings is built between the two northern and southern hills	c7
	Visible accessibility to public passageways	c8
Spatial and functional system d	Flat roofs and roof-yards	d1
	Mainly two-storey buildings	d2
	Low-rise buildings	d3
	Residential functions are located on the first floor	d4
	The service spaces for livestock and agriculture are located on the ground floor	d5
	Few and small openings to the passageways at the ground level	d6
	More and bigger openings in the first level	d7
	The living spaces such as the hall and the main rooms are located on the southern side of the first floor	d8
	Placement of the guest room on the southern and southeastern sides of the first floor	d9
	Proper light and the dimensions of the guest room	d10
	Porticos on the south side	d11
Landscape system e	A whole and patterned totality of the rural landscape in Hawraman of a person who observes the tissue from outside	e1
	Attention to the skyline and spacing for the viewing angle of the observer inside the tissue	e2
	The harmonious exterior walls made of natural stone for buildings and passages	e3
	Observing tangible and visual scales in space	e4
	The combination of man-made environment with nature and natural elements	e5
	The use of vegetation in micro and macro levels of the design in combination with the man-made environment	e6
	Use of plants and fruit trees on the southern slopes of settlements	e7

they are compared and categorized according to their object and integrated into a series of axial and selective categories (implicit meanings) at two semantic levels. Finally, 11 major categories were

distinguished that are psychosocial safety, perception of nature in the built environment, spatial cohesion, legibility of physical environment, distinctiveness, space presence, increased social interactions, ease

Table 2. The general schema of the meanings derived from the open second and third level of coding. Source: authors.

Architectural system	The codes of representation of sign	The type of selected code for interpretation	Second level of open coding Interpretation of signs (Explicit meaning)	Third Level of coding The object of the sign (Implicit meanings of the first level)
Establishment system a	a1	Scientific (logical)	Maximum use of light and solar energy in the cold seasons	Ecological design (adaptation to the environment) Providing comfort and tranquility
		social	Not priority of residential units over each other, creation of privacy	Establishment of comfort and psychological safety
		Aesthetics	Creating a proper view to the southern gardens, the river and the sky	Attention to the principles of aesthetics in space design, perception of nature
		Aesthetics	Ability to perceive and read the human view and scale	Spatial coherence, legibility, distinctiveness
	a9	:	:	:
Structural system b	b1	Scientific (logical)	Use of natural materials, continuous relation to natural elements	Perception of nature in man-made environment
	b8	:	:	:
Movement and accessibility system c	c1	Scientific (logical)	Increase per capita of public spaces and pathways in the city tissue	Space presence
		Scientific (logical)	Ease of movement and pedestrian access	Increased social interaction
		social	Public ownership of roof space traditionally	Increased social interaction
	c8	:	:	:
Spatial and functional system d	d1	Scientific (logical)	Keeping snow in winter as thermal insulation	Ecological design (adaptation to the environment) Providing comfort and tranquility
		social	Ease of access in public pathways Creating a space for the daily activities of the Northern units	Increased social interaction
	d11	:	:	:
Landscape system e	e1	social	Enabling perception and legibility in human view and scale	Spatial coherence, legibility of physical environment, distinctiveness
		Aesthetics	Ability to perceive and the human view and scale Creating a visual image of the settlement, improving the image of the community	Promoting a sense of pride in social affiliation
		social	The result of experience and collective wisdom	Increased social interaction
	e7	:	:	:

Table 3. Axial and selective coding and selecting the core category. Source: authors.

Architectural system	The codes of representation of sign	Axial coding The object of the sign (Implicit meaning of the second level)	Selective coding The object of the sign (Implicit meaning of the third level)	Core category (Symbolic meaning of Hawraman architecture)
Establishment system a	a1	-Providing human's physical and mental comfort	-Providing physical comfort and psychological safety -The perception of nature in man-made environment -Space coherence -Physical legibility -Increased level of social interaction -Ease of movement and pedestrian access -Harmony -Continuous attention to the concept of reproduction and birth -Promoting a sense of pride in social affiliation	Sociality and improved quality of collective life
	a2	-Perception of nature in the man-made environment		
	.	-Space coherence		
	.	-Legibility of physical environment		
	a9	-Distinctiveness -Increasing the level of social interaction -Ease of movement and pedestrian accessibility		
Structural system b	b1	-The perception of nature in man-made environment	-The perception of nature in man-made environment -Space coherence -Physical legibility -Distinctiveness -Presence in space -Increased level of social interaction -Ease of movement and pedestrian access -Harmony -Sense of social affiliation -Continuous attention to the concept of reproduction and birth -Promoting a sense of pride in social affiliation	Sociality and improved quality of collective life
	b2	-Providing human's physical and mental comfort		
	.	-Harmony		
	b8	-Physical legibility -Increasing social interactions -Sense of social affiliation		
Movement and accessibility system c	c1	-Space presence	-Distinctiveness -Presence in space -Increased level of social interaction -Ease of movement and pedestrian access -Harmony -Sense of social affiliation -Continuous attention to the concept of reproduction and birth -Promoting a sense of pride in social affiliation	Sociality and improved quality of collective life
	c2	-Providing for comfort and physical well-being and human psychological safety		
	.	-Increased social interactions		
	c8	-Ecological design (adaptation to the environment) -Perception of nature		
Spatial and functional system d	d1	-Ecological design (adaptation to the environment)	-Harmony -Sense of social affiliation -Continuous attention to the concept of reproduction and birth -Promoting a sense of pride in social affiliation	Sociality and improved quality of collective life
	d2	-Providing physical comfort and psychological safety		
	.	-Increased social interactions		
	d11	-The perception of nature in man-made environment		
Landscape system e	e1	-Natural perception in man-made environment	-Promoting a sense of pride in social affiliation	Sociality and improved quality of collective life
	e2	-Continuous attention to the concepts of reproduction and birth		
	.	-Space coherence, legibility, distinctiveness		
	e7	-Promoting a sense of pride in social affiliation -Increased level of social interaction -Mental safety and comfort		

of movement and pedestrian access, harmony, sense of social affiliation and continuous attention to the concept of birth and creation that indicate the sociability of this architecture. After selecting the codes, and integrating, comparing and pondering on

these categories, a core category called “Hawraman Architecture, a Social Phenomenon for Improving the Quality of Collective Life” was selected as the symbolic meaning of Hawraman architecture of Kurdistan in Iran (Table 3).

Conclusion

According to the study, the main questions of the research can be answered and concluded as follows:

The answer to the first question: According to the operational model of the research that is formulated based on the conceptual model and research methodology, a semantic reading of the signs/representations is achievable through a specific process continuum by using the semiotic system as the interpreting system and the grounded theory as the analysis system.

The answer to the second question: the semiotic analysis of the identifiable signs/ representations of this architecture in the three social, scientific and aesthetic codes, as well as the identification and formulation of 11 major categories from the semantic implications of architectural formation in this area of Iran show that this architecture is the result of a coherent combination of human experience in interaction with nature and in the interest of social benefits over time. In other words, this combination of natural, artificial and human elements according to semiotics reveals an explanatory scheme of a social phenomenon whose main purpose is to increase the level of social interactions and improve the quality of human collective life. Previous research on Hawraman merely examined a single dimension of its architecture, or generally referred to it as a phenomenon to achieve ecological goals.

Suggestions: It is recommended that the designers and planners of these establishments pay further attention to the future development plans of this region in order to increase the level of sociability of these establishments and promote the quality of life of the residents and their users by considering the semantic implications and the original features of this region's architecture in reconstruction and renovation projects.

Therefore, the following strategies based on the results of this study and derived from the original architecture of this region are proposed to achieve the above goal:

- Preserving and using original establishment patterns in micro scale (single buildings) and macro level (the overall fabric) to improve the legibility of the physical environment and public visual perception.
- Emphasizing on the pattern of "passage/courtyard/roof" in formulating the design and construction regulations for residential buildings in order to increase the presence in space.
- Maintaining a visually significant relation with the natural environment, natural elements and view and highlighting the direct perception of natural events in the activity spaces and life.
- Creating and reproducing social spaces as the venue for social interactions.
- Using natural materials based on the essence of materials and paying attention to their type, color, texture, form, and layout methods in the exterior walls to create harmony and to induce the perception of nature and provide physical and mental comfort and health.
- Offering physical and visual permeability of the space to ease the movement, accessibility and visibility of the passageways, and consequently to create safety and social supervision.

Obviously, the understanding and interpretation of Hawraman's architecture as a social phenomenon does not imply the presence of all sociability concepts. The presence of incongruous features with this concept and the functional problems with this rural texture is undeniable, whose explanation has not been the aim of this paper.

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