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Re-Identifying and Evaluation of the Landscape Elements of Neighborhoods in Gorgan City During Evolution *

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Abstract

Neighborhood is one of the most important constituents of the spatial organization of Iranian cities. It also shows how a geographical-historical aspect of the landscape has been conceptualized. The neighborhood, as one of the centers for social life and collective memories, has symbolic dimensions. Understanding the neighborhood landscape requires a careful examination of its symbols. Gorgan as one of the most important centers of civilization in northern Iran has diverse but unique combinations of neighborhoods. However, in the last century, neighborhood-based life seems to have been irreparably damaged by major developments under the influence of the modernist view of cities in the urban system. During this period, life-centers that used to have profound for the lives of past and present inhabitants of the city were ignored and gradually led to a gradual disappearance of their lives. The first step in reviving Gorgan's neighborhoods is to develop a holistic perspective in identifying its spatial dimensions - natural and cultural - during this period. Landscape as an attitude provides an approach to an in-depth understanding of the physical and non-physical dimensions of places. This approach can be helpful in recognizing the spatial dimensions of Gorgan neighborhoods. Therefore, this study seeks to analyze the current status of neighborhood elements by identifying the landscape of Gorgan, presenting its landscape elements, examining the evolutionary factors of these components, and pathology. This study first presents the concept of neighborhood landscape in Iranian cities, then analyzes the natural and cultural layers of Gorgan's neighborhoods to present its landscape elements. Then by introducing the process of transformation and its impact on the urban system of Gorgan, it shows how the landscape of Gorgan's neighborhoods are affected by the developments.

Keywords

Neighborhood View, Gorgan City View Elements, Evolution Period.

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Introduction

Since European industrial revolution, the system of many of the traditional cities have experienced major changes in different aspects including extensive physical structures and semantic changes. However, such changes have not been in line with the previous history of cities.

Similarly, over the past hundred years, many cities of Iran have undergone radical changes in their spatial organization¹. The construction of wide-ranging straight streets with the purpose of accommodating more cars has transformed the neighborhood system of Iranian cities. The Iranian spatial organization used to respond to the needs of its citizen through their neighborhoods. This used to occur through physical, symbolic, functional, livelihood, identity, semantic systems. However, with the advent of the new system, neighborhood centers in many cities in Iran have been physically and meaningfully deteriorated.

The valuable historical texture of Gorgan², the widest texture of northern Iran, has been of no exception. The spatial organization of Gorgan used to be characterized with independent neighborhoods sharing the same neighborhood centers. In Qajar-era, the most important neighborhoods were Saripr, Darb no, Mikhchegaran, Nabalban, Sabze Mashhad, and the squares of sub-neighborhood such as Pasro, Mirkarim Doshanbehei, Shir ksh, Bagh shah, Dabaghan, and Shazdeh Ghasem. However, car-based lifestyle and new needs of residents has begun to change gradually since the late Qajar and early Pahlavi periods. This means that the meaning of the neighborhood has been largely disappeared though its body has not undergone any changes in some neighborhoods. This study seeks to identify the elements of landscape in Gorgan and examine the factors contributing to landscape transformation. It also investigates the impact of these factors on the landscape elements of Gorgan.

Research questions

What elements have shaped the landscape of Gorgan?

What factors have changed the landscape of Gorgan?
How are the landscape elements evaluated through the lens of the landscape transformation of the neighborhood in Gorgan?

Research Methodology

The main purpose of this study was to scrutinize and examine different aspects of Gorgan's landscape and to interpret the data from a holistic perspective. With respect to the purpose of this study, a case study research method was selected. The landscapes of Gorgan's neighborhoods as a system including elements and special cultural relationships was examined. The components and changing processes of this system were analyzed. Quantitative data gathered from the field and through observation were combined with library data.

Landscape of Neighborhood in Iranian Cities

In the organization of the spatial structure of Iranian cities, there are semi-independent units. These units which are called neighborhoods are independent physical and social entities and they have come into existence in the post-Islamic era. Comparing the divisional way of spatial organization of cities (ranging from the micro to the macro) around the world shows that the scale of the "neighborhood" is the oldest but the most popular. This popularity has not been achieved by chance and it reflects the importance and value of the neighborhood in human life (Barati, 2012). Neighborhoods, the main elements of the city system, act as a set of interconnected elements, but they are independent entities. These elements which can be called small whole entities are linked to each other and the center of the city through the structures. Neighborhoods are complex integrated social, political, cultural, economic systems having multiple existential dimensions (Abdullahi, Sarafi & Tavakolinia, 2010). Specific boundaries, a sense of attachment and interactions among its residents, collective identity, collective objectives, unity in

activities and space, the relative self-sufficiency and proportional population are among the definitions of the term neighborhood (Baherini & Majdzadeh, 2013).

Mousavi also believes that neighborhood identity as a systematized unit in urban life has two essential elements of movement and social unity (Mousavi, 2012). In each Islamic city, assigning each neighborhood to a particular tribe, race, or trade union created a deep bond between the members of the neighborhood by highlighting their similarities. Unity among the people of a neighborhood and protecting their social group against others made them rather self-sufficient in terms of services and facilities. Social and cultural unity could develop a sense of attachment to the neighborhood and encouraged people to follow specific customs and this differentiated one neighborhood from another. The residents of each neighborhood felt responsible for others and their neighborhood and they had certain rights. They used to consider themselves part of the whole and believed that their survival and comfort were dependent on the performance and power of this unit. This strong sense of unity and attachment differentiated the member of each neighborhood from another. Dominant social relationships had a great influence on the formation and structure of neighborhoods and used to define the networking and neighborhood centers and other structural elements such as warehouses, mosques, religious site, and the bathroom, saqakhaneh. Economic conditions and the necessity for a rather self-sufficiency resulted in developing special economic facilities in the neighborhood and turned its center to a place where all the daily and short-term necessities used to be provided. The texture of the neighborhood which used to reflect the socio-economic conditions of the society had a particular consistency and homogeneity. In other words, these factors had a key role in determining the structural elements of the neighborhood. A set

of elements in residential centers used to create an environment that reflected the mutual relations of people in their everyday communication (Hosseini & Soltani, 2018).

The landscape as an attitude provides an approach which simultaneously considers the geographical and cultural aspects of the phenomena and discovers their interrelated relations through symbols. Landscape as a common property for living things comprises the geographical environment and the human groups living there. Landscape is a place whose inhabitants reflect on it and consider it as a habitat (donadieu, 2013) According to Taghvaei (2004) landscape refers to the relationship between the natural and cultural patterns, its constituting processes and human perception of its beauty. If the landscape in its totality includes geographical and historical concepts that are human-centered and perceived through its symbols, then the neighborhood landscape can be one of the urban landscapes that are formed in the neighborhood. Mansouri (2010) defines the urban landscape as the perception whose citizens hold about the city through its symbols.

Thus, the neighborhood landscape can also be seen as a perception created by its associated symbols which are part of a larger organization called city. According to UNESCO, understanding historical urban landscape through its natural dimensions, geographical and cultural aspects, or historical aspects is possible: Historical urban landscape is a city area which can be perceived by its cultural and natural properties and values shaped over the course of history. The concept is broader than the mere historical centers and collections and includes the urban settings and its geographical contexts.

This setting includes open spaces and garden, topography and land slope, the morphology of the land, hydrology, historical and artificial environment, land use pattern and organization of

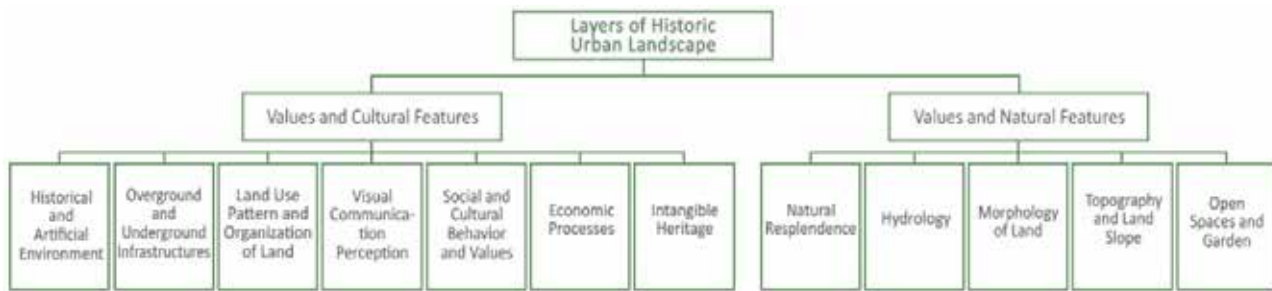


Fig.1. Layers of Historic Urban Landscape. Extracted from the Sections 8 and 9 of UNESCO. Source: Motahari Rad, 2016, 55.

land, overground and underground infrastructures, natural resplendence and other elements of urban structures. It also involves social and cultural behaviors and values and economic processes, and intangible dimensions of a legacy that are related to diversity and identity (Fig. 1).

Gorgan neighborhoods

Gorgan, one of the most important centers of civilization in northern Iran, has diverse patterns and unique mixture of neighborhood life. The urban spatial organization in the historical context of Gorgan is based on independent neighborhoods, each of which presents a set of identifiable bodies, concepts, and functions. During the Qajar period, Gorgan had six main districts and several sub-districts (Fig. 2). The city was divided into several large neighborhoods, each of which was a single socio-physical neighborhood with several thousand inhabitants. The initial texture of the city consisted of three neighborhoods: Sabzeh Mashhad, Nalabandan, and Meydan. As the city started getting expanded gradually, more neighborhoods were added to the east and southeast. Each of the neighborhoods had separate crossings and a square, often had a polygon, square, or rectangular shape. In the field, sometimes there were elements such as Tekiyeh, cemetery, water supply, mosque, bath, and school. An example of this can be found in Abbas Ali Square, Sabzeh Mashhad, Mikhegaran and Darb no (Mousavi Serwineh Bagh, Moradi &

Ranjbar, 2015, 5).

In general, neighborhoods in Gorgan used to be spaces with numerous social, religious and economic functions and they included different natural and cultural dimensions that played an important role in preserving the ancient texture of the city (Fig. 2).

Landscape Components of the Neighborhoods of Gorgan

The definition of landscape comprises two components of the environment - which encompasses human beings - and human beings who attempt to perceive and interact with the environment (Mahan & Mansouri, 2017). As mentioned, the neighborhood landscape, one of the urban landscapes, is the perception that its citizens gain through its symbols. As shown in figure, understanding the landscape requires examining its natural and cultural layers. Therefore, understanding the landscape of Gorgan's neighborhoods requires gaining knowledge of its elements in its natural and historical layers.

Natural Elements: The most prominent natural elements of Gorgan neighborhoods are its "land slope" and "water infrastructure". The neighborhoods of Gorgan have alleys that lie on a variety of slopes originating from the elevations of the southern forest landscapes. The heights have created a relative slope toward the northern coastal landscapes. Interestingly, the steep alleys



Fig. 2. Right: Public path of Mourning Groups in Gorgan City From the Third to the Sixth Night of Muharram. Source: Moghsami and Espo Mahali, 2016. Left: Boundaries of the Historical Neighborhoods in Gorgan. Source: Mousavi Serouineh et al, 2015.

ending neighborhood centers are generally leveled to provide a sociable platform. In addition, slopes are clearly leveled in areas such as houses, mosques, and etc to create a place where people can rest and constantly gather. Therefore, passageways such as alleys and neighborhood crossings are only places where this natural event occurs. The second element is the presence of water infrastructure. Neighborhood elements are places where people are provided with services based on the underwater infrastructure. The neighborhoods of Gorgan are located on the beds of about 80 aqueducts, which both provides water and determines the location of the landscape. Also, the provision of public utilities including historic baths (e.g. Mikhchegaran, Ghazi and Dabaghan), tank-houses (e.g. Mirkarim) aqueducts (e.g. Sabzeh Mashhad, Sare-khajeh) and the use of specific names (e.g. Sar chesmeh stands for spring in English) for neighbourhood suggest a rising water flow that is a component of Gorgan's landscape.

Cultural Elements: The center of the neighborhoods in Gorgan are a coherent artifact characterized by distinctive physical and semantic features. Such properties differentiate it from other examples in central and southern Iranian cities.

These elements are influenced by the historical features of the landscape that is unique to this place. "Neighborhood centers" in Gorgan are one of the most important elements of neighborhoods. In Gorgan, the majority of neighborhood centers have religious functions- such as Mikhchegaran, Pa sarv, Sabze Mashad and Darb no and the upper floors are used to serve religious functions through Tekiyeh while the ground floors are allocated to daily business and services offered by the neighborhood (Matoufi, 2015; Maghsami & Espo Mahali, 2016). Neighborhood centers are a collective place where services are provided and, livelihood, religious and social functions are performed at the neighborhood scale. All neighborhood centers are similar in terms of structural properties. Although the centers of the neighborhoods do not have the same geometrical forms, they are about five-meter-high and come in two floors They are located in open space and the ratio of their length to width is 1.5 (Table 1). Over time, their forms have undergone a marked change by a variety of materials and ornaments. Nowadays, the distinctive characteristics of their alleys have been used for their differentiation from the alleys of the cities in the center of

Iran. The use of a variety of materials such as pottery, brick, wood, and plaster, along with a variety of ornaments, is unique to this city (Fig. 3). Also, one of the most important elements of the landscape of Gorgan's neighborhoods is the

function of 'Tekiyeh' which seems to have been built in the Qajar Period (Mousavi Serwineh Bagh et al., 2015). Neighborhood centers in Gorgan are so intertwined with 'Tekiyeh' that they are sometimes used interchangeably – For instance,



Fig. 3. A variety of materials and extraversion dimension of grains in the neighborhoods of Gorgan, Photo: Sara Shokooh, 2020.

Table 1. Comparison of the proportions of the neighborhoods of Gorgan, Source: Mousavi Sarwineh baghi et al, 2015.

Neighborhood	Length	Width	Ratio of length to Width	Area(M ²)
Sabzeh Mashad	13.5	7	1.93	89
	36	27	1.3	985
Sarcheshmeh	239.95	22.96	1.04	537
	65.5	17	3.85	1352
Mikhchegaran	31	24	1.3	658
Sar pir	40	23	1.7	836
Pa Sarv	37.45	24.46	1.83	787
Nalbandan	22	20.73	1.6	454
Doshanbehei	29.54	18.62	1.56	482
Darbno	72.5	20.4	3.55	1437
Meydan	65.4	48.1	1.35	2284
Mirkarim	44.86	26.05	1.72	1251
Shazdeh Ghasem	26.1	12.4	2.1	383
Shir kesh	38.4	7.8	4.9	334

it is difficult to mark a boundary between Abbas Ali Takiyeh and Sabzeh Mashad. Gorgan’s Tekiyehs share similarities in terms of location and their bodies. All are on the upper floors and have a transparent body facing the center. What is remarkable is the life sustainability promoted by its religious function (Tekiyeh ³) rather than other neighborhood functions. Nazif (2011) says: “Although spaces such as tank-houses, baths, and inns have virtually lost their values due to different social conditions nowadays, religious spaces such as mosques and particularly Takiyehs have continued to play a key role in the sustainability of neighborhood centers”. Other residential landscape elements are “residential grains”. The houses in the alleys of Gorgan’s neighborhoods - unlike Yazd and Kashan -are extravert and their second floor having a distinctive body facing the southern forest landscapes. In addition, their functional extraversion has added variety to materials and forms in the “alley” view by influencing the body. The proportions, materials, and techniques used in this climate - wood, brick,



Fig. 4. The densities of existing buildings range from 1 to 2 stories and the width of passages vary from 3 to 3.5 meters. In second-rate arteries the ratio varies between 1.5 and 3 because the passages are approximately 2 m wide. Source: Authors.

mortar, tile, and so on - are unique to this pace (Fig.4) and have created different views of the alleys. The alleys of Gorgan are the landscape elements of Gorgan neighborhoods (Zarei, Mirza Ali & Hosseini, 2015). The presence of a tree in Gorgan is one of the most prominent features of

Table 2. Elements of the centers of the neighborhoods in Gorgan, Source: Authors.

Elements of the centers of the neighborhoods in Gorgan	Natural elements	Land slope	
		Water infrastructures	Gorgan’s neighborhoods are located on the beds of about 80 aqueducts which supply water and influence the occurrence of neighborhood events.
		of center The neighborhood	Neighborhoods are the most important place for developing social interaction and collective memories of residents. Most of the residents’ collective lives occur in these centers
	Cultural elements	Extravert grains	Unlike Yazd and Kashan, the houses of Gorgan, are extravert and their second floor with a distinctive body facing the southern forest landscapes.
		Different forms of alleys	Alleys with complex and multiple forms are the results of the extravert houses, land slope and urban functions and urban meanings. Alleys of Gorgan have a distinct personality compared to other ancient Iranian urban textures.
		Tekiyeh	Tekiyeh, the most prominent feature of neighborhood centers, is integrated with neighborhood centers so much so that they can hardly be separated from each other. Gorgan’s Tekiyeh are similar in shapes and all are located on the upper floors having glass facades.
		Symbolic tree	The symbolic trees in the neighborhood’s geometric center have been one of the most prominent landmarks of Gorgan. These trees are specific in shape and are evocative of concepts.

its landscape. Evidence suggests that in the past all the centers of Gorgan were recognized by their “symbolic tree” - at their geometric center. The tree was often a sycamore -. Even though most of these trees were destroyed due to the availability of cars during the Pahlavi era, their immortality has been reflected in the names of neighbourhood such as Pa-Sarv, Do chenar, and passages such as burnt sycamore (Table 2) and the trees in Sabzeh Mashhad and Sar cheshmeh still exist –

Evolution of the Landscape of neighborhoods

After the Qajar period, due to new socio-economic developments in the country, the urban system and consequently the neighborhood changed dramatically. Urban life underwent different changes in its form and content due to different factors such as increasing uncontrolled urban growth and the migration wave to the city, shifting the agricultural economy to industrial economy, problems such as environmental pollution, social anomalies, diminished identity and sense of social belonging, economic inequalities. All declined the quality of life. These widespread changes in the foundations of the neighborhood gradually faded the traditional concept of neighborhood in the new urban system. As a result, the functions and benefits of neighborhoods such as giving identity

to inhabitants, developing self-sufficiency and people’s self-governing as well as social cohesion lost their meanings (Ibid). Factors and elements contributing to changing the landscape vary from one location and space to another. The changes depend upon the features of space. Regardless of such differences, the landscape is more or less affected by a set of factors. Table 3 shows factors and driving forces influencing landscape transformation (Kokabi, Akrami, Badri & Rezvani, 2014). As can be seen in Fig. 5, the factors and elements influencing the landscape are physical and fall under the categories of internal and external. The factors directly or indirectly contribute to the changes. Lifestyle as a mediator influences the physical changes but some factors directly affect the changes. In either case, the condition for changes in the physical landscape needs to be provided (Kokabi, Akrami, Badri & Rezvani, 2018).

Evolution of the landscape of neighborhoods in Gorgan

Neighborhoods, one of the main constituent parts of Islamic cities, play a significant role in shaping the collective memory of the inhabitants despite their ethnic or racial, religious, commercial, or other commonalities. In Gorgan, ethnic,

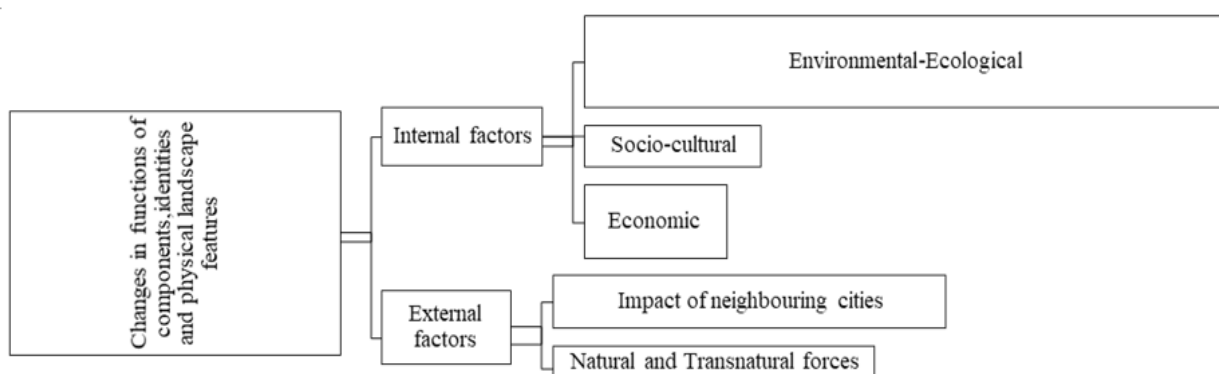


Fig. 5. The Driving Forces of Landscape. Source: Kokabi et al., 2014.

racial, religious, and trade-related factors have been important to neighborhood development. The names of many neighborhoods reflect a commercial unity (Mikhchegardan and Nalbandan) - or signify religious affiliation (Sabze Mashhad, Sare khojo, Sar pir). The selection of names has been associated with the importance of these commonalities. Neighborhood centers have been common places where communal services are provided to its residents. Independent Tekyeh and commercial openings have been of importance in meeting the daily needs of residents such as baths and tank houses. They used to play a key role in shaping the network of neighborhood structure. The twisted main roads and the east-west alleys used to connect neighborhoods to the main structure of the city. Today, Gorgan's neighborhoods appear to be on the verge of destruction and they have been losing their importance. Although the structures of these traditional neighborhoods have been preserved, they are no longer vibrant or dynamic. The landscape of Gorgan's neighborhoods seems to have undergone fundamental changes, and the disappearance of the fundamental components of neighborhoods has led to its destruction.

Cities and their smaller units such as neighborhoods like living, dynamic organisms are subject to many changes (Kitabchi, Hajipour & Hosseinpour, 2012). Destructive factors of traditional Gorgan's neighborhoods are internal or external. Components originating from the inside of the neighborhoods have changed the lives of neighborhoods, while some factors existing outside of the neighborhoods have been influenced by cities. The availability of cars and construction of new streets across the city have had a direct impact on the city's physical structure. This has been imposed by out-of-cities factors caused by advances in technology and the larger

changes which occurred across the country. Due to an increase in the number of cars ⁴ in the cities and changes in the speed of transportation, cutoffs with different width in Gorgan's neighborhoods could not keep up with the changes. The route used to connect the neighborhood center to another center through intermediate routes. To facilitate access to different places and to distant locations, several streets were developed. Due to the construction of Pahlavi and Kakhi streets, much of the neighborhood of Pasro and other neighborhoods in that area were destroyed and this endangered the life of neighborhoods. Also, the need for faster services through new cutoffs connecting the city to its surrounding or landmarks - the street leading to the palace – made cutoffs more attractive to people than passages and alleys within neighborhoods. In addition, the expansion of the city as a result of an increase in population was associated with external changes caused by events such as migration to cities. With the expansion of the city, population growth and migration from villages to cities, housing demand, the neighborhoods failed to meet the needs of the new population. As a result, new settlements were developed out of the neighborhoods or changes were made to existing homes around the texture. These settlements were based on the present-day technology and were better in terms of services provided to residents (e.g. access to gas water). Therefore, there was a greater interest in living in these settlements

Internal factors also had an important influence on the destruction of neighborhoods. By changing the city and the needs of the inhabitants, the functional system of the Gorgan's neighborhood centers failed. Due to access of the houses to the running water, there was no need for a water tank or public bathroom. In this way, the constituents of the neighborhood centers were no longer in use

by its residents. By drying up the water source in Sabze Mashhad, as water infrastructure and place for water resources division, the utility of the neighborhood was questioned. The provision of running water through the piping system and promotion of health services reduced the need of being connected to the neighborhood center as a sharing point of water. In addition, the elimination of guilds and local stores as economic factors brought changes within neighborhoods and influenced their livelihoods.

With the evolution of technology, many of the economic dimensions of neighborhoods were no longer in line with the new conditions. This resulted in the elimination of some guilds (Metal engraving and blacksmithing, etc.) and the economic functions of neighborhoods. Today, the micro-commercial functions that formed in the neighborhood centers are no longer flourishing because they do not meet the basic livelihood needs of neighborhood residents. Though some parts of the historic texture of neighborhood centers in

Gorgan has been intact, the neighborhood that used to meet the needs of its residents has turned to a parking lot.

Discussion

The most significant driving forces contributing to landscape transformation can be divided into four internal and external factors (Table 3) and the elements of Gorgan's landscape can be examined by referring to these factors. First, the natural landscape can be examined through two criteria: land slope and water infrastructure. Land slope seems to have been subject to disintegration due to the construction of standard and straight streets in some areas. Such a change was caused by technological evolution and the introduction of cars into cities, and in some areas the correction of the slope destroyed the integration of the natural slope. Thereafter, the element of water infrastructure was affected by two factors simultaneously. First, there was an intrinsic factor that caused the water infrastructure to collapse due to environmental

Table 3. The Driving Forces of the evolution of Landscape of Gorgan. Source: Authors.

	Driving Forces of Landscape	Cause	Effect	Consequences
Internal factors	Technological changes	in cars of Availability cities	increase to Necessity of speed the	Development of straight streets and destruction part of the local context
	Socio-cultural changes	Migration to cities and population growth	development City	Creation of new settlements outside the texture of neighborhoods
factors External	Environmental and ecological changes	Dryness of existing springs	Lack of easy access to drinking water in the neighborhood system	Migration to the outside of neighborhoods where there is access to the running water.
	Economic changes	The collapse of the traditional economy and its replacement with the industrial economic system and the emergence of large stores with various products at lower costs	Elimination of some local guilds and shops	the local economic cycleWrecking

and ecological changes -dryness of existing water springs. The coincidence of this change with the evolution in the water supply system and the prevalence of the piping system questioned the necessity of maintenance and restoration of former infrastructure. In addition, socio-cultural changes and an increase in migration to cities made water resources insufficient for the new population. Gorgan's cultural landscape elements, including neighborhood center, extravert grains, multiple alleys, Tekiyeh, and symbolic trees can be examined by the aforementioned components. First, the neighborhood center, as the most prominent element of the Gorgan's neighborhoods landscape, was redesigned to be suitable for drivers as soon as cars became available in the cities, and some of their identity features were changed. Also, because many of the grains were not designed to accommodate cars, these centers turned to public parking lots in these neighborhoods. In addition, with the environmental and ecological changes, the function of neighborhoods as a center for water distribution faded away. Following the economic changes and the presence of new stores with more variation in their product available in the city, small livelihood services disappeared. Consequently, extravert grains as the elements of the cultural landscape were widened as cars became available in the city. As a result, the historical identity of the walls, as well as some of the functions adjacent to the grains were distorted. Then, due to the rapid immigration growth and the increase in urban populations, building construction methods underwent drastic changes, and the buildings were replaced with multi-story apartments of different quality. The landscapes of alleys were also affected by these two factors and the section of alleys influenced by these factors. To facilitate transportation, the symbolic trees of neighborhood centers were removed. This occurred because they

were a barrier to cars coming to the city (Figs 6 & 7). Also, drying up natural water resources of the neighborhood ecologically had a significant effect on the vegetation of the centers.

Conclusion

Neighborhoods are one of the main pillars of Iranian cities. The old texture of Gorgan used to be neighborhoods-centered and the life of the city depended on the dynamics of its neighborhoods. It seems that these identity elements have been destroyed over the last century by the fundamental changes in Gorgan. However, understanding the landscape of Gorgan's neighborhoods can be a step towards identifying the elements and recognizing their pathology to restore this tissue. Gorgan's most prominent landscape elements can also be categorized into two major natural elements - including land slope and water infrastructure - and cultural elements comprising neighborhood center, extravert grains, multiple forms of alleys, Tekiyehs and symbolic elements. In addition, for the purpose of pathology and evaluation, changes in the landscape of neighborhoods under the influence of external and internal factors can be studied. According to Table 4, it seems that all the elements of the natural and cultural landscape have had several damages occurred by landscape changes. However, although neighborhood centers have been most influenced by transformational factors, Tekiyehs are the spaces that have been religiously intertwined with the centers of Gorgan's neighborhoods and for religious reasons they have been resistant to change. Finally, it seems that by examining the pathologies of evolutionary factors, we can evaluate the landscape of today's Gorgan's neighborhoods, and develop methods and measures to revitalize and rebuild these neighborhoods.



Fig. 6. The importance of devotion: The entrance of Sayyed Abbas Ali's Tekiyeh. Photo: Azarnush Amiri, 2020.



Fig. 7. Tekiyeh Sayed Abbas Ali. Photo: Azarnush Amiri, 2020.

Table 4. Evaluation of landscape elements of neighborhoods in Gorgan city during evolution. Source: Authors.

	Technological changes (Availability of cars in cities)	Socio-cultural changes (Migration to cities and population growth)	Internal Factors		External Factors	
			Environmental and ecological changes (Dryness of existing springs)	Economic changes (The emergence of new stores with various products at lower costs)		
Landscape Elements of neighborhoods in Gorgan	Natural Elements	Land Slope	Disintegrating and leveling the integrity of the natural slope of the land	-	-	-
		Water Infrastructure	-	Necessity of access to water resources	Deterioration of water infrastructure due to the changes in the water supply system with the prevalence of piping technology	-
	Cultural Elements	The Center of Neighborhood	Preparing the center to respond to the availability of car and turning centers to parking lots	-	Deterioration of service function of the neighborhood to provide water supply	Reduction of the micro-functions of neighborhood centers and the deterioration of the commercial-service
	Extravert Grains	Widening alleys and destroying the historical identity of walls	Changes in construction methods and an increase in tendency for apartment building	-	-	
	Different Forms of Alleys	Adjusting the width of the alley and passages to the standard of transportation.	Changes in the cross sections of alleys based on height and construction density in the alleys	-	-	
	Tekiyeh	-	-	-	-	
	Symbolic Tree	Eliminating the ritual tree to facilitate transportation	-	Dryness of trees in the center of neighborhood	-	

Endnotes

1. The era of evolution is a term coined by Victor Daniel, Bijan Shafé'i, and Sohrab Soroushian to refer to a period in Iranian architecture and urban planning and this term was used by the authors of this paper due to its conceptual similarity to the timeframe of the study. It is introduced as follows: "The architecture of the evolution era deals with an era of Iranian architecture in which transformation is one of its permanent features. This period began in the mid-reign of Nasser al-Din Shah Qajar and has continued to this day.
2. This texture numbered 41 was listed in the National heritage list of Iran in 1931, its area corresponds to the Qajar area in the city of Esterabad.
3. Tekiyehs were one of the main elements of Qajar cities. In fact, Tekiyehs were the center of places used for mourning. Takaya in the Qajar Periods were the center for gathering the residents of neighborhoods and a factor in promoting local identity. Gorgan, as one of the important cities of the Qajar period, has important Tekiyehs formed by the old neighborhoods of the city. These are: Tekiyeh Pastro, Tekiyeh Nalabani, Tekiyeh Mikhegaran, Tekiyeh Sabze Mashhad, Tekiyeh Sarpir known as Abbas Khani, Takhti Tekiyeh Dushanbe, Tekiyeh Darvazehnoor, Tekiyeh Abbas Ali, Tekiyeh Bani karimi (Mousavi Sarvineh Baghi et al. 2015).
4. Although some other factors such as the effect of modernist aesthetics,

increased sovereignty, etc have been reported to contribute to developing new streets in modern cities, the availability of cars was the most prominent factor in this global transformation.

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