

Comparative Study of architecture and landscape technologies in Charbagh Street in Safavid Era and Champs/Elysess Axis

Mehdi Haghghatbin^a *, Negin Sadat Moghadassi^b

^a Assistant Professor, Tarbiat Modares University, Tehran, Iran

^b M.A in Landscape Architecture, Tarbiat Modares University, Tehran, Iran

Abstract

In the Islam tradition the garden as Paradise is, perhaps, even stronger, since the Quran (the central religious text of Islam) describes Heaven as a garden. Islam was spread to the Persians, and reciprocally the Muslims adopted the Persian style of garden. Therefore garden has been invaluable to Iranians and includes some different types.

Isfahan as the Capital of Safavid Dynasty has designed as a big garden according garden city model. Therefore, some solutions have used in urban design regarding Isfahan's arid climate. Safavid government followed the realization of cities ideal that rooted in Islamic beliefs and opinions. The investigations in historical perspective of Safavid cities indicates the importance of cities as the place for presence of symbols and signs. The Symbols which has remind as the ideological concepts, power of dominating government and also getting identity to the city.

During the history of Safavid urban design, there were some direct and wide streets (Charbagh) which were the main factors of development and improvement of cities among urban functional and symbolic elements. In historical background of Isfahan garden city is pointed to construction of street (Charbagh) which has attracted the European tourists attention and it will investigate in this article.

Initial section of this article is allocated to explain about historical background of Isfahan in Safavid era and also Charbagh Street as main axis. Then this paper with emphasis on some historical documents and analytical studies, compares the Isfahan Charbagh Street with its similar sample in France (Champs-Elysées Street). The conclusion of this article indicates the similarity of Isfahan Charbagh Street and Champs-Elysées Street in some skeletal specifications and the way of formation. French Boulevards were constructed after Isfahan Charbagh in terms of time and they were formed after publishing itineraries and pictures of tourists from this place in Europe.

Keywords: Charbagh, Garden city, Isfahan, Garden, Champs-Elysées

* Corresponding author. Tel.: +9821828837890; fax: +982188008090. E-mail address: haghghatbin@modares.ac.ir.

1. Introduction

In the Islam tradition the garden as Paradise is, perhaps, even stronger, since the Holy Quran (the central religious text of Islam) describes Heaven as a garden. Islam was spread to the Persians, and reciprocally the Muslims adopted the Persian style of gardenⁱ. According to the four-part (Charbagh) concept, Muslims designed Islamic gardens as an image of Heaven in this world. However, a number of scholars have other thoughts in this regardsⁱⁱ.

Muslims desire to experience on earth the paradise that the Quran describes. In the Quran, Heaven is described as a place surrounded by eight principal gatesⁱⁱⁱ with lofty gardens^{iv}, shady valleys, delicious thorn less fruits in all seasons^v; fountains scented with camphor or ginger^{vi}; rivers of water, milk, honey and wine^{vii}.

Development design of Isfahan during the reign of Shah Abbas I was formed based on a combined structure including Zayande River (as a natural element) and Charbagh (as a man-made factor). These two elements have formed completely match with the Persian garden pattern and also their perpendicular structure have formed main structure of Isfahan. This innovation have remained so far as an outstanding experience in the history of architecture and urban development. The Persian garden pattern has used in the development of Isfahan during the Safavid era to define a new identity for the city. In fact, it is a garden on a city scale.

2. Methods

2-1. Isfahan Garden City

Iskandar Beyk Munshi in "Tarikh-e Aalam Aray Abbasi" book, announced that the change of capital to Isfahan was done on New Year's Eve and on the thirteenth day of the month of Sha'bān in 1006 (1598) . Considerable activity has done for building palaces, bridges, and mosques in order to decorate the capital since that year. "The idea of constructing a promenade place like Charbagh Street was found for the Safavid king in the same year and ordered to construct a wide tree lined street from Darvazeh Dowlat to the foot of Soffeh Mountain." [1]. However, Mulla Jalal, Munajeme Yazdi, wrote about the time when Charbagh had designed: " The Charbagh design has done on 1005 (1597) [2]. Charbagh's axis was formed as Shah Abbas expected after eighteen years from the king's command about building it (Table 1).

Considering the importance of Charbagh Street in Isfahan garden city identity during the Safavid era, this paper will focused on the characteristics of this street compared with the Champs-Élysées street from the viewpoint of historians and tourists.

2-2. Description of the Characteristics of Charbagh Street from the View of Historians and Tourists (16th and 17th Centuries AD)

The Safavids developed a wide connection with the European states and therefore, in this era, many tourists visited Isfahan for business and travel and have stayed in this city for some time. In Table 2, certain features of Charbagh have been quoted that are considered by some travelers who visited Isfahan in the 17th century.

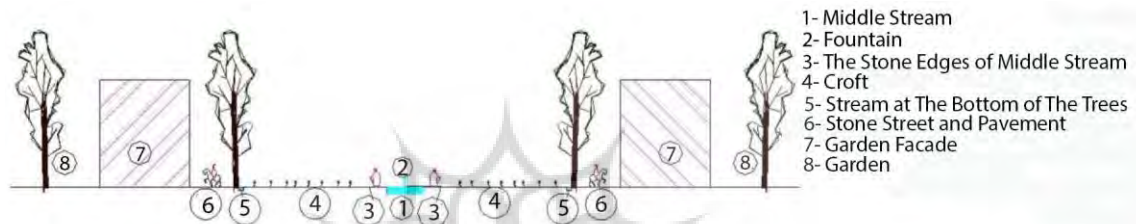
According to the table below (Table 2), some of the specific architectural and landscape features that have been used as identifiers for Charbagh in the descriptions of historians and tourists are as both sides flanks, landscaping (by the main elements (trees and the middle creek), and the secondary elements (flooring, etc.), physical dimensions, types of uses and activities (tourism, communication, government ...) and the special perspective of the route (Map 1).

With the beginning of the Pahlavi era, Charbagh was reformed. The development of green spaces and tree planting, designing the streams and its water routes was considered. Also by continuation of this axis on the north side, a unique street was created [1]. But arrival of the cars to this city and consequently the process of riding down the avenue at this era, led to the removal of stairs, removal and filling of ponds and leveling down the street and, in fact, the historical identity of this street was largely altered and got closer to the French boulevards. Of course, it is worth noting that adding two rows of trees on both sides of this street during Qajar era [3] is also significant. Therefore, in order to make a comparison and clarification of the possible impacts and effects, the history of boulevard constructing in European cities is discussed.

Table 1 - Historical procedure of the construction of Charbagh promenade

Row	Year	Performed Activities
1	1591-1598	The common use of Qazvin and Isfahan as the capital of the Safavid government and the presence of Shah in Isfahan to perform ceremonial ceremonies.
2	1598	Isfahan was officially chosen as the capital of Shah Abbas I-the time when the Charbagh project has done on 1597.
3	1599	Allah-Verdi-Khan's bridge was designed along Charbagh on Zayande River to connect the northern and southern parts.
4	1609	The women's special tour begins on Wednesdays in Charbagh
5	1616	Charbagh promenade is formed as expected by Shah Abbas the Great
6	1704-1714	The Charbagh school is built as the last magnificent building of Safavid during these years on Charbagh Street.

(Source: Writers)



Map 1- Cross section of Charbagh Abbasi Street during the Safavid period, Source:[2]

2-3. Boulevard Building Background in European Cities

In Baroque era, it is emphasized on the main axis to point to the infinite vision and to enhance the glory of the garden. During this time, most of the renaissance gardens axes transformed due to the change in width and visual opening of the axis. Boulevard building background in European cities is described in table below (Table 3) in detail. In all of the mentioned cases, we see the use of tree lines on both sides of the path, which is really affected by the axis landscape in Baroque gardens, and became the most attractive and most important part of the garden landscape. From the middle of the eighteenth century, French urban designers used interior tree-lined streets as the main attributes of the city's development in other residential cities (Figure 1). Trees were planted along the streets of commercial and residential areas. The development of Toulouse and Lyon are based on a network of tree-lined streets (Map 2) [4].

Table 2- Specific Features of the architecture and landscape of Charbagh

The Name of the Traveler	Presence in Iran	Noteworthy Feature	Explanation (according to the Text of the Travelogue)
Jean Chardin	1664	Dimensions	The length of the street is three miles and two hundred feet and its width is one hundred and ten feet.
		Central canal	The edges of the water canal, which runs in the middle and across the street, are made of stone.
		Flanks and visual quality	There are a lot of beautiful vast gardens along this street. The garden entrance is open on each side so that you can see the crowd in the street. It is the most beautiful passage I've ever seen or heard.
		Tourism	This passage, which can be called Isfahan's public tree-lined promenade, is a pleasant and cheerful street for evening excursion during nine months of the year.
		Path perspective	The walls of the gardens are lattice and inside the gardens are easily visible from the outside. It's possible to see the ponds, fountains, and waterfalls which are extremely beautiful, pleasing and amazing, both in going and coming back from this avenue.
Pietro Della Valle	1617	Identity	"Another spectacular place in Isfahan is the street that is currently outside the city, but when new neighborhoods ... joined together, it will be completely centered," he writes. Charbagh is really great because it belongs to Shah ".
Engelbert Kaempfer	1683	Identity	He was the guest of the court of Iran at the time (1685-1685). Shah Abbas "took a ruler during the process of planning Charbagh ... to show himself as the true successor of Cyrus the Great".
		Image of heaven	According to him, the gardens around Charbagh are the image of Heaven on earth, and it's very difficult to describe their beauty.
Tavernier	1668-1631	Path perspective	A tourist, who was French merchant and traveled to Iran six times, criticized the old textures of Isfahan. According to him, "the most beautiful and compelling way in the city of Isfahan and the whole of Iran, is this street" but in his opinion, "in France, which has that much good streets and excellent homes, this is not an extraordinary thing."
Garcia de Silva Figueroa	1614-1624	Dimensions	It is a beautiful road with a length of 1,500 feet and a hundred feet width, which is newly built.
		Central canal	A ditch or canal with a width of twelve or fourteen, and a depth of six feet, the floor and walls of which are covered with white stone.
		Sidewalk	A paved side walk has been constructed so that the pedestrians can walk easily along it. The riders and those who have load or furniture can use the remnants of the road's width, which are lower than the sidewalks, and are not paved.
		functions on flanks	There are many gardens on both sides of this vast, very straight and smooth road. There are houses, tents and small shops on the side of the road, where everything is sold.
		Tree planting along the borders	Around the road plane trees(Platanus) and other types of trees are planted.

Charbagh's features according to the travelers

Nicholas Sanson 1683

Fabrics and building of
flanks

In describing Charbagh side monuments "the portal entrance of the garden", he writes: "These buildings are all the same and are facing each other." He also writes: "The sidewalk is very flat and straight. On the two sides of this street a large number of large and bushy Plane trees are planted."

(Source: Writers)

Graph 1: How to combine street, square, and tree in European urban spaces (Source: Writers)

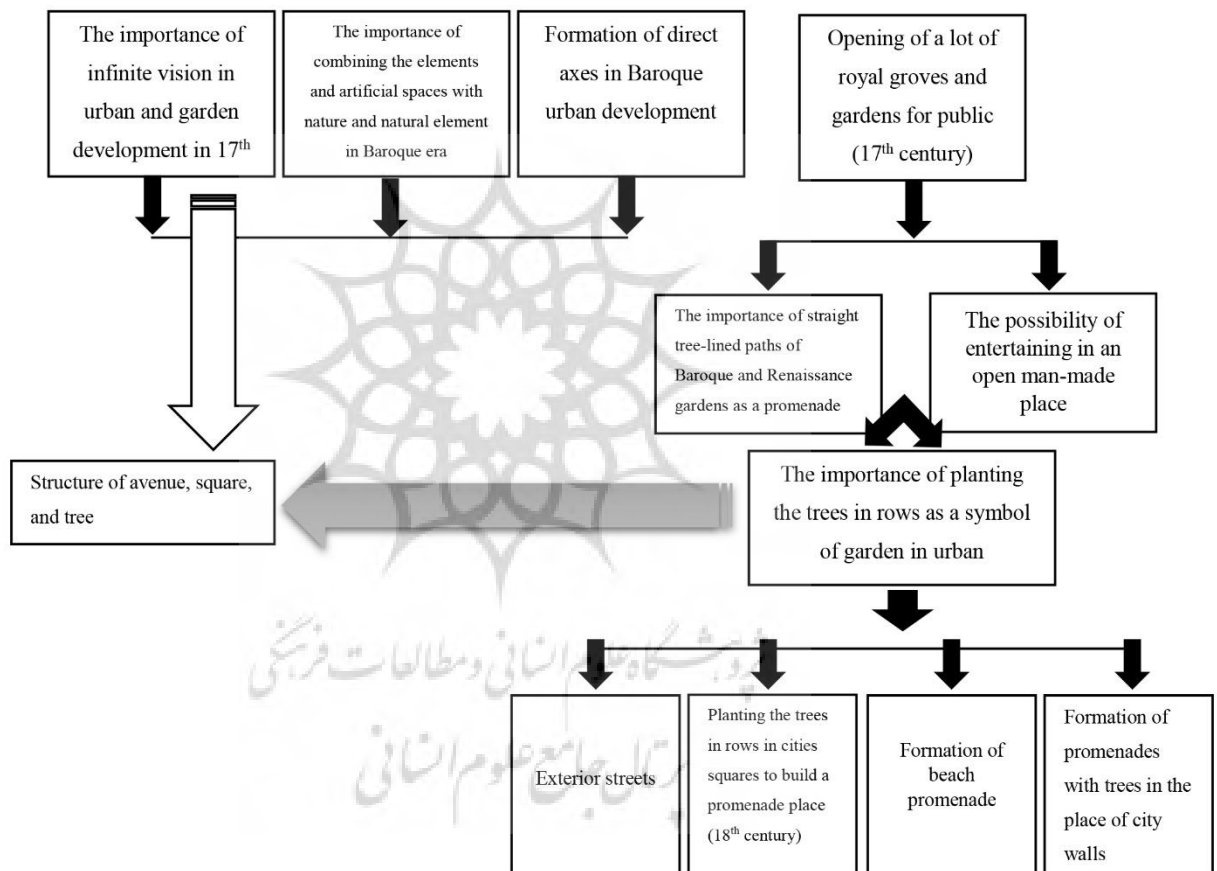
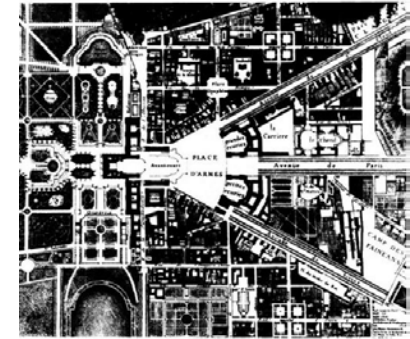


Table 3: Roots of Boulevard building in Europe

Row	the boulevard's construction roots	Time domain	Description
1	Garden alley	Seventeenth century	In Renaissance Italy, pathways lined with trees provided a framework for the spatial organization of a new style of landscape garden [5]. They have continued with changes in perspective in the Baroque garden structure. Garden paths are tree-lined pathways used to excursion and perform some of the popular games from the seventeenth century.
2	Wall Promenades	From the late sixteenth century	Since the Middle Ages, trees had been planted along some city walls or on sites of old walls when city expansion had passed beyond them [6]. However, the greatest use of trees along the protective walls of cities dates back to the late sixteenth century, when new engineers were inventing new weapons (firearms). At this time, in French cities, planting rows of trees in the city's wall was accompanied by the construction of out-of-town promenade walkways. Map of Paris in the year 1700 (M) - two rows of trees planted in the walls of the city are quite clear on this map [7]
3	Waterside Promenades	Seventeenth century	Closely related in both time and space to the wall promenades were waterside ones. They took two slightly different forms, the tree-lined canal and the quay promenade. Both accompanied city building and renovation associated with the seventeenth-century expansion of waterborne commerce in northwestern Europe. Although the form might have begun as a wall- and-moat variation of the wall promenade, the tree-lined canal became a distinct form in its own right during the first decades of the seventeenth century. The leading example occurred after 1615 in an important expansion of Amsterdam called the plan of the three canals. (Casparus Commelin, Beschryvinge van Amsterdam [8])
4	Exterior Avenues	From the late seventeenth	By the late seventeenth century, rural avenues were appearing on urban peripheries, often as grand entryways to city gates or to large new suburban



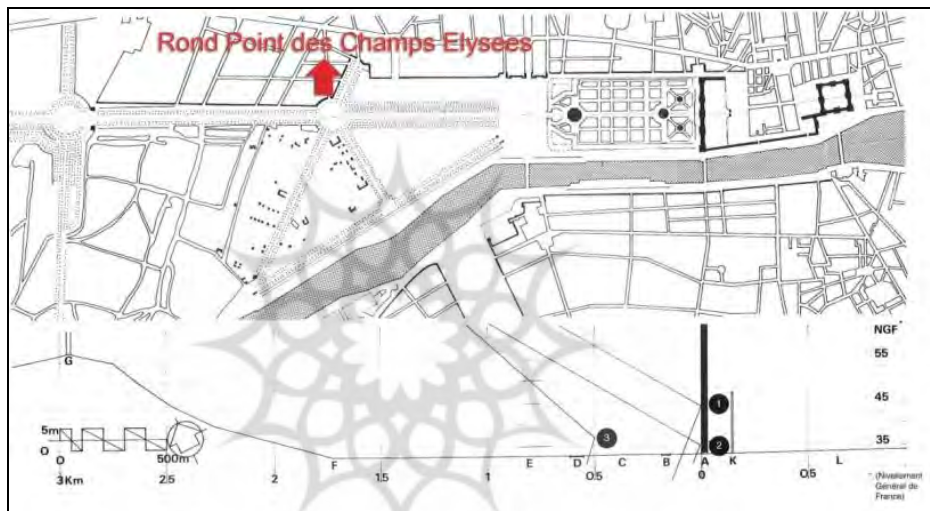
- | | | | |
|---|--|------------------------|--|
| | | century | buildings like a hospital or a chateau [9]. |
| 5 | Place Promenade | Eighteenth century | Use of the rows of trees in the main part Of each square and connection of these squares by tree-lined streets and rows of symmetric houses is very important. |
| 6 | Interior Avenue
(consists of trees,
squares and streets) | Seventeenth
century | In some instances, the trees of a place extended a short distance along the avenue.
The earliest examples appeared to have been two garrison towns in Holland during the 1580s-Willemstad and Klundert [10] This form was not integrated into urban design until after the 1670s. When Louis XIV transformed Versailles from a chateau into a residential cente, three radiating tree-lined avenues constituted the main organizing device for the town. [11] The radial streets (without trees) and their use are based on the design of Piazza del Popolo in Rome (1516) and the design of Pope Sixtus V (1580) |



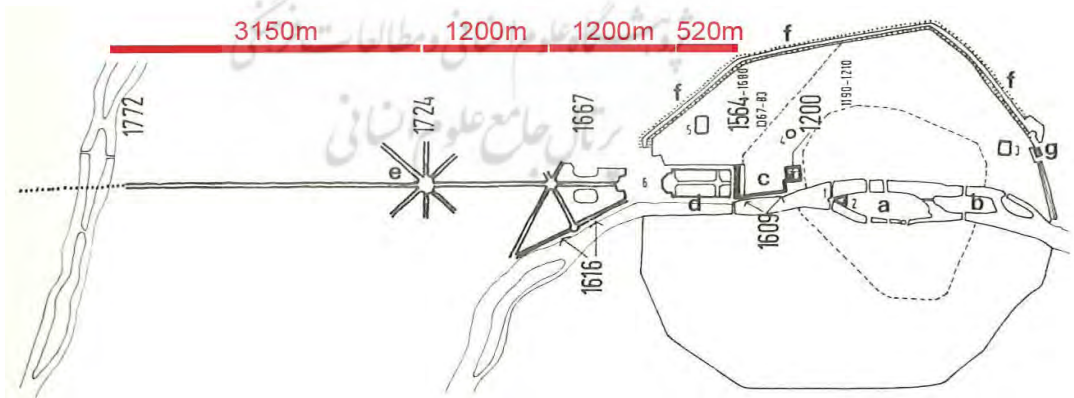
(Source: Writers)



One of the most important urban boulevards, which is considered to be one of the most important axis of urban areas, is Champs-Élysées in the Paris. Building this axis began with the order of Marie de Medici, widow of Henry IV, for the construction of a garden palace (Tuileries Palace) outside the city in the style of Italian gardens. In 1670, the city wall was pulled down so that the garden axis could be extended past the garden boundary. The spatial axes was continued by Le- Notre in the (levelled) landscape as a broad, ascending tree-lined Grand Course (1677). Due to the sheer size of the Grand Course (over two kilometers) in relation to the foreground and its upward slope, the horizon, as a tangent between heaven and earth, was brought in to the Tuileries as if with a telescope[12].



Map 2-Plan and section of Champs-Elysee Street from Thuilery Garden to Rand Point [12]



Map 3- Schematic map of the successive stages of the development of western Paris along the Champs-Elysee axis. Mapping[11]

It seems that Charbagh in Isfahan is comparable in terms of the time of formation, the landscape and some physical and spatial features of the Champs-Élysée axis. Hence, further consideration will be given to this issue.

2-5. Comparative comparison of Isfahan Charbagh and Champs-Élysées streets in terms of construction and development time

Eighteen years before Lady Medici decided to expand the garden of Tuileries (1616 AD), Shah Abbas ordered the construction of Charbagh Street in Isfahan. This street has been constructed as treed and preconceived axis in Isfahan (the capital of the Safavid government). The following diagram compares these two streets in terms of construction and development time. According to the following diagram (Fig. 2), the first section of the Champs-Élysées Avenue, as tree lined street, was formed as a result of the development of the Tuileries axis by Le- Notre in 1667 AD. The extensive tree planting around its developed part dates back to 1709 AD. Therefore, taking into account the time of planting the trees, Champs-Élysées Avenue was formed ninety-three years after Charbagh was organized according to Shah Abbas's view.

2-6- Comparative comparison of Isfahan Charbagh and Champs-Élysées streets (seventeenth and early eighteenth centuries) in terms of landscaping, function and formation

As mentioned, the development of the Champs-Élysées has taken place in different stages and over many years. The analogy in this section includes the Charbagh Street of the Seventeenth Century and the first phase of the formation of Champs-Élysées (from 1667 to 1709 AD) which are related to each other in terms of design features and formation.

The similarity between the two streets of Charbagh and Champs-Élysées can be shown by the visual and physical connection of these streets with the axes of the royal gardens at the beginning of both paths very well. Both paths are formed along the main axis of the two royal gardens of Tuileries and Hezarjarib. In terms of physical characteristics, they follow the characteristics of the main axis of these gardens. "The Garden of Hezarjarib was built in 1006 AH (1598 AD)" [13]. In the same year, the order to construct the Charbagh was issued by Shah Abbas. The Charbagh axis is located exactly along the axis of the Hezarjarib Garden. The Champs-Élysées Street is also formed in 1667 AD along the Tuileries Garden axis and by the development of the main axis of this garden by Lenôtre.

To compare these two streets, some functional, visual and spatial features of these two streets are compared with each other in Table 4. The factors which have compared are including the type and location of trees, the facades and side trunks, type of current activities, how to emphasis on the site identity and the location regarding the city According to Table (4), it seems that Charbagh Street has

unique features as a multi-purpose urban space in comparison to Champs-Élysées. In the nineteenth century, with the development of Champs-Élysées, some characteristics and functions of the 17th century Charbagh such as communication and traffic, general use, performing some government formalities, using sub-elements in landscaping, etc. emerged.

The visual, functional, and spatial features of Charbagh (seventeenth century) compared to the seventeenth century Champs-Élysées was being unique. Also these features were superior to other walkways, boulevards, promenades and courses European cities on seventeenth-century. Therefore, it attracted the attention of many foreign tourists who visited Iran during the seventeenth century and afterwards. These tourists emphasize the unique features of Charbagh Street compared to the famous streets of major cities of that time, such as Paris and Rome. Chardin considers this street as the most beautiful street he has ever seen or heard. Pietro della Valle compares this street with the streets of his country and considers a unique greatness for this street. He states "Popolo Street in Rome, Poggio in Naples and Montreal streets in Palermo were lagged behind this street".

Given the development of Iran-Europe relations during the Safavid period, it is possible that the descriptions of European tourists in their travelogue regarding the Charbagh street may affect the formation of streets like Champs-Élysées in the next centuries. Hence, this is discussed in Table

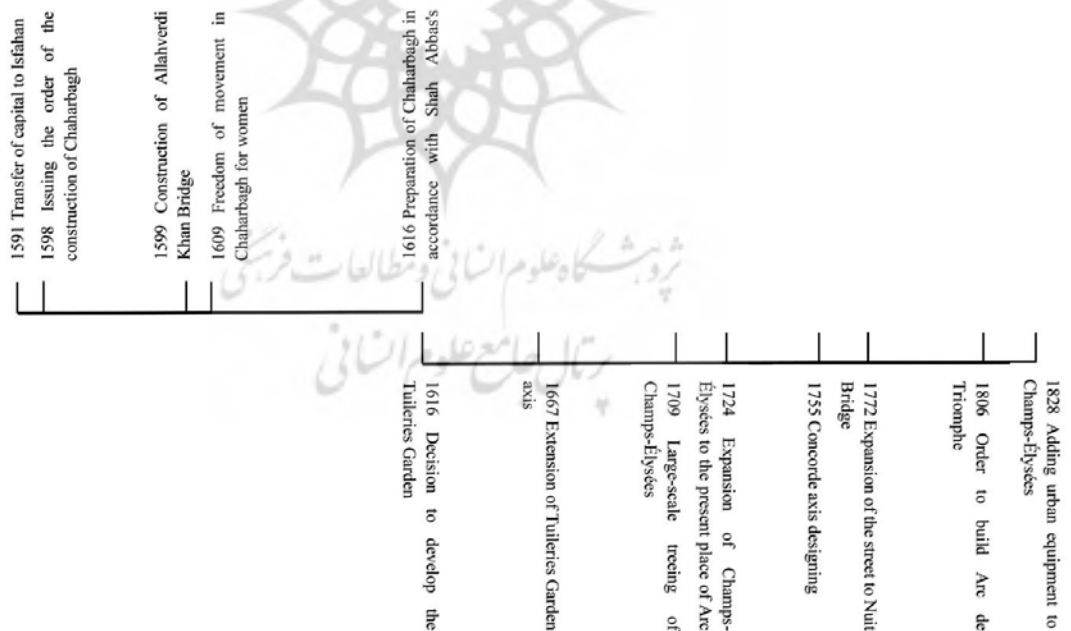


Diagram 2- Diagram historically comparing the formation stages of Champs-Élysées and Charbagh axes

(Source: Writers)

Table 4 - Comparison of physical and functional characteristics of the Charbagh in Isfahan and Champs-Élysées in Paris

Visual, functional and physical features	Charbagh (Isfahan)	Champs-Élysées (Paris)	Similarity level
Type and location of trees	There are two rows of plantains on both sides of the street.	The site around the developed area of Tuileries Garden axis (available plantations and vegetable lands) was planted with parallel rows of slippery elm, chestnut and maple. In the future development of the Champs-Élysées axis, only two rows of trees has planted on each side of the path.	Does not have Less A lot
Side Trunk	According to the writings of Chardin, Kaempfer and Figueroa, some gardens around Street and Zayandeh Rood River had made side trunks of Charbagh. Kaempfer estimated their number to be about 30 gardens in 1096 AH (1685 AD). Generally, gardens and trees have formed the main identity of the side trunks in the Charbagh axis.	The rows of slippery elm, chestnut and maple have formed the sides of Champs-Élysées in initial part (between the Tuileries Garden and Round Point Square).	Does not have Less A lot
Commercial	In travelogues, some of the temporary and permanent commercial activities (such as cafes) in Charbagh have been mentioned, which have added to the vitality to the route.	This section of the route was a promenade site and there is not any report on the existence of commercial activities.	Does not have Less A lot
Recreation	The street started from the mansion of Jahannama. It reached to Hezarjarib Garden. It was used for daily recreation of the king and the public. Many travelers also referred to it as Isfahan treed walkway.	From the beginning, it was constructed along the central axis of Tuileries Garden to create a dynamic axis for recreation. It had a special place as a public promenade among the upper class of the French community.	Does not have Less A lot
Communicational	Charbagh Street in the 17th century served as main street for communication between the Seljuk and Safavid sections of the city. Also, the southern parts of the Safavid government house have been connected to the upper part (Hezarjarib Garden) by this street.	It was not initially created for communication purposes. Only It had a recreational role. It became the city's communication axis after its development during the eighteenth and nineteenth centuries, and especially through the activities carried out by Haussmann.	Does not have Less A lot
Governmental	Many Charbagh gardens belonged to the Government House and Heads of State. Most of government special celebrations have been held on this street.	The Tuileries Palace and the Louvre were state-owned palaces, but the path itself was public (for the upper classes of society).	Does not have Less A lot
Location and position regarding the city	The city is divided into four sections by two perpendicular axes of Charbagh and Zayandeh Rood River. The Charbagh axis is a link between	In the westernmost part of the city and outside the city fence, it has been formed as a suburban promenade.	Does not have

Visual, functional and physical features	Charbagh (Isfahan)	Champs-Élysées (Paris)	Similarity level
	the new and the old city in a north-south direction.		Less A lot Does not have
Using sub-elements in landscaping	In Charbagh axis landscaping, some elements such as water pond, flooring, garden entrance, gardens, signs, rows of trees and memorable elements have been used to create a fascinating, beautiful and unique landscape in the new Safavid capital.	In 1828, by Napoleon's order, sidewalks, ponds and gas lights have been added to the Champs-Élysées.	Less A lot
The Elements which has reinforced the path's image (continuity, direction, beginning and end) (Source: Writers)	Continuity of the path: The rows of plantains, middle water stream and following the uniform principles in side trunk's artificial elements Direction: The slope of the land and symbolic elements at the beginning and end of the path (the mansion of Jahannam and the garden of Hezarjarib)	Continuity: Rows of slippery elms on both sides of the path. Direction: Tuileries palace/garden at the beginning of the path as a symbolic element.	Does not have Less A lot

Table 5- Famous travelers who visited Isfahan during the Safavid period

The name of the traveler	Presence in Iran (AD)	Explanation
García de Silva Figueroa	1614-1624	The Spanish Ambassador was also present at the court of Shah Abbas I and in Isfahan. His travelogue was translated into French and published in Paris in 1667 AD.
Pietro della Valle	1617	The famous Italian traveler and architect came to Iran in the Safavid era and visited Isfahan in the year 1619 AD. His travelogue has been published in Rome on the basis of his letters and in two volumes during the years 1650-1658 AD.
Thomas Herbert	1627-1629	In 1628 AD, he was in Isfahan. His travelogue was published in London in 1634 AD.
Tavernier	First trip in 1632 Second trip in 1668	The French traveler and businessman traveled to Iran six times. His travelogue criticized the old textures of Isfahan. His travelogue was published in Paris in 1676 AD.
Adam Olearius	1636	The German mathematician, geographer and librarian (1603-1671 AD) arrived in Isfahan, Iran's capital, on August 3, 1637 AD. His travelogue was published in Germany in 1647 AD.
Jean Chardin	First trip in 1664-1665 Second trip in 1673-1677	The famous French traveler came to Iran during Safavid era and spent some times in Isfahan. In 1686 AD, he released his second travel report to Iran. Then in 1711 AD, in Amsterdam, he published the book of travels of Jean Chardin to Iran and the Orient.

Engelbert Kaempfer	1683	The German traveler whose travelogue contains geographic information about Iran. He was a guest of the Iranian court in Isfahan (1684-1685 AD). In 1727 AD, he published his travel report in London.
Nicolas Sanson	1683	A missionary who came to Iran during the reign of Shah Soleyman Safavi to promote the religion of Christianity. He has also traveled to Isfahan. He published his travelogue in London in 1695 AD.

(Source: Writers)

According to the table above (Table 5), it is clear that whole of the travelogues of people who travelled to Isfahan on Safavid Era have been published in Europe a few years after returning to their homeland in the seventeenth century. Even some of these travelogues containing pictures and maps of Isfahan, especially Charbagh Street, were translated into several languages and published in different countries.

3. Results

ChaharBaq Abbasi Street of Isfahan constructed on 17th century and it seems it was as same as Champs-Élysées (from 1667 to 1709 AD) in terms of time, designing features and the manner of formation (Fig. 1 and 2 and Table 4). At the beginning of both paths, the visual and structural connection with the royal gardens axes is the most important point of similarity. Both paths are formed along the main axis of two royal gardens of Tuilerielu and a Hezarjarib. Also they have followed the characteristics of the main axis of those gardens in terms of their physical or structural characteristics.

In addition to formation way, these two streets have had many similarities in some features such as "type and location of trees", "recreation", semiotic elements of the beginning and the end and the use of trees as the cause of continuity (Table 4). However, 17th-century Champs-Élysées street being as the special promenade site for rich people category and it has had fundamental differences with ChaharBaq Abbasi which has been public multipurpose urban space.

There is some reasons which have reinforced this thinking and mentality that the drawings and illustrations of Charbagh by tourists have provided the contexts for building similar streets in Europe in the next centuries.

In so far as ChaharBaq Abbasi has preceded its similar examples in Europe (as described) in terms of time Given the fact that science and art of the Orient had been highly considered in Renaissance era by western scientists and engineers according the translation movement that made many eastern works be translated into common European languages

Of course, this does not mean complete adaptation. Because the boulevards construction in Europe has also taken place in stages. In fact, the emphasis of this article is on the existence of similarities and immunity.

4. References

- [1] Honarfar, Lotf Allah, 1969, Do Pol-e Tarikhi-e Mashoor-e Isfahan Az Dore Safavieh (Two Isfahan's Famous Bridge on Safavid Era), Honar va Mardom Journal, Vol 81, pp. 14-19.
- [2] Mull Jalal al Din Monajem Yazdi, Tarikh-i Abbasi ya Ruznama-yi Mulla Jalal, ed. S. Vahidniya, (Tehran, 1366/1987), p. 161.
- [3] Gholipour, Soudabeh, 2014, Regeneration of Chaharbagh Abbasi Avenue in Isfahan in Safavid and Qajar Eras with Emphasis on the Pictorial Expressions of Travelers' Documents, Bagh-e Nazar Journal, Vol 11, No. 29, pp 33-46.
- [4] Monfalcon, J. B., 1866, Histoire Monumentale de la Ville de Lyon, Vol. 3, Paris: Firmin Didot.
- [5] Lawrence, Henry W, 1988, Origins of the Tree-Lined Boulevard, Geographical Review, Vol. 78, No. 4 (Oct., 1988), pp. 355-374.
- [6] Braun and Hogenberg, , Civitates Orbis Terrarum (Cologne: 1572-1618), Published by c.1590, Cologne, Germany (1590)
- [7] Paris in the 1700's, URL: <http://www.history-map.com/picture/002/Paris-1700s-the-in.htm>, recived on 12/23/2017.
- [8] Casparus Commelin, Beschryvinge van Amsterdam (Amsterdam: Aart Dircksz Oossaan, 1693-1694), Vol. 1, 218-222.
- [9] Felibien, Michel, 1725, Histoire de la Ville de Paris , Vol. 2, Paris: Guillaume De Prez.
- [10] Boxhoorn, Marcus, 1632, Theatrum Hollandiae Comitatus ET Urbium Nova Descriptio, Leiden, 308-310.
- [11] Morris, James, History of urban Form, 1974, Elm-o- Sanat University, Tehran.
- [12] Steenbergen, Clemens, 2003, Architecture and Landscape, Amsterdam: Thoth.
- [13] Mojtaba Ansari, Arzesh-haye Bagh-e Irani (The values of the Persian garden)(Safavid-Isfahan), PhD Thesis in Architecture, (University of Tehran, Faculty of Fine Arts, 1999), p195.
- [14] ean-Baptiste Tavernier, Safarnam-e Tavernier (Collections of travels through Turkey into Persia, and the East Indies), Translated into Persian by Aboo Torab Noori, Sanaee Library and Taeid Bookstore,(Isfahan, 1336H/1957) , p. 393.
- [15] Haghighatbin, Mehdi, Mojtaba Ansari, 2011, Study about Havard's garden city Principles and its comparison with Safavid's garden city, Naghsh-e Jahan journal, 2 Issue, Tehran, Tarbiat Modares University.
- [16] Chardin, Jean, 1983, Chardin's Travelogue(Isfahan Section), Negah, Tehran .
- [17] Engelbert Kempfer, Safar Nameh-e Kempfer(Kempfer Itinerary), Translated by K. Jahandari, (Tehran, Kharami Publishers, 1981), p. 196.
- [18] Iskandar Bayk Munshī, Tārīkh-i 'ālam ārā-yi 'abbāsi. Ed. M. Rezvani. (Tehran: Donyaye Ketab, 1377 SH/1998), p. 871.
- [19] Donald N Wilber, Persian Gardens and Garden Pavilions, (Rutland, Tuttle, 1962), p. 54.

i - N. Jardine, J. A. Secord and E. C. Spary, *Culture of Natural History*, (Cambridge, Cambridge University Press, 2000) , p. 41.

ii - Lehrman(1980) argues that: Wherever conditions permitted, gardens were established throughout the Islamic World. Their attraction was threefold. First was the idea of Paradise as a reward for the faithful, based on many references to the Paradise Garden in the Quran. Second was the secular tradition of royal pleasure garden, especially in Iran, a tradition which long predated the Islamic Era. These two attitudes interacted with each other. Third was the particular response to the demands of terrain and climate in this part of the World, with its predominate dryness and heat; Jonas Lehrman, *Earthly Paradise: Garden and Courtyard in Islam*, (Great Britain, Thames and Hudson, 1980), p. 32.

Ruggles (2003) also contends that: The earliest Islamic gardens were likewise the product of local practice and owed much to late Roman (including Byzantine) and Mesopotamian (Achaemenid and Sasanian) forerunners. Gardens with axial plans and fountains existed long before Islam, and thus in neither their form nor their symbolism could they

have been drawn from a Quranic archetype. Islamic societies attached the idea of Quranic paradise to living gardens after the typology of the garden was already formalized; D. Fairchild Ruggles, *Gardens, Landscape, and Vision in the palaces of Islamic Spain* (Pennsylvania, Pennsylvania State University Press, 2003), p. 220.

iii - Muhammad b. Jarir al-Tabarsi, *Jami al-bayan fi tafsir al-Quran*, Translated by E. Mirbagheri, (Tehran, Farahani, 1971), p. 220.

iv - In Quran (Surah 3: Ayah 134), Heaven has been described as ‘a Garden, the extensiveness of which is (as) the heaven and the earth’.

v - According to Quran, Heaven is ‘the gardens of bliss’ (Surah 56: Ayah 12). ‘And extended shade and water flowing constantly, and abundant fruit’ (Surah 56: Ayah 30-32).

vi - In Holy Quran, this matter has been described as: ‘Surely the righteous shall drink of a cup the admixture of which is camphor’ (Surah 76: Ayah 5).

vii - Quran describes that inside the heaven: ‘Therein are rivers of water that does not alter, and rivers of milk the taste whereof does not change, and rivers of drink delicious to those who drink, and river of honey clarified; and for them therein are all fruits and protection from their Lord’ (Surah 47: Ayah 15).

