

Original Research Article

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تحلیل شیوه‌ها و نقوش آینه‌کاری ابنیه تاریخی شهر اصفهان

Analysis of the Mirror Work Methods and Motifs in the Historical Buildings of Isfahan City*

Abstract

Problem Definition: Mirror work is one of the delicate and productive arts related to architecture, which is created by putting together small and large mirror pieces. The mentioned array is usually used in the interior parts of various buildings, including sacred places, palaces, and residential houses, which besides the decorative dimension, also has important practical aspects. Traces of this art were observed in various buildings of the Safavid period, and its development and peak can be seen in the buildings of the Qajar period. In the current research, technical studies and content analysis of motifs and symbols of mirror work in fifteen buildings of Isfahan City have been carried out, according to the time frame. Therefore, the present research seeks to answer these questions: 1. What are the characteristics of the mirror work decorations in Isfahan from the Safavid period to the present? 2. What are the techniques used in the historical building of Isfahan?

Objective: This study aims to investigate the techniques and decorative motifs of Isfahan mirror works.

Research Method: In the current study, the research method is qualitative and analytical. The data was collected using library sources and field observations.

Results: According to the research conducted the most common mirror work from the Safavid period to the present is the embossed and semi-embossed mirroring technique, as mirror work on plaster. Also, concerning the motifs, the motifs of «shamsa» and «mirror-frame» among the geometric and decorative bergamot and among the plant category were found to be the most widely used. Among the motifs, «yellow lily flower» and «wagtail» are among the local motifs related to the region of Isfahan, which were observed in Safavid and Qajar houses.

Keywords

Mirror Work, Isfahan Mirror Work, Historical Buildings of Isfahan City, Mirror Work Decorations

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Introduction

One of the original Iranian arts that serve architecture is mirror work. This traditional art is mostly used in the interior decoration of historical and religious places. Mirror work should be considered the latest innovation of Iranian artists in interior architecture and decoration of buildings, which creates a bright and sparkling atmosphere in the interior areas of the building by creating regular and geometric decorative shapes and designs from small and large mirror pieces, and the result is the successive reflection of light in countless pieces of the mirror while creating a pleasant and dreamy bright space. This decoration style was common in Shiraz, Isfahan, and Tehran, and after transferring the capital from Qazvin to Isfahan in 1007 A.H., mirror work was spread in the newly built palaces of Isfahan and this art was used in the decoration of many royal palaces of Isfahan. In the Safavid era, mirror work started with the installation of one-piece mirrors on the body of the building; However, in the Qajar period, in the evolutionary path of this art, the mirror was transformed into smaller pieces, combined with various geometric shapes, and used in the decoration of shrines. In the contemporary period, besides shrines, mirror work was widely used in some residential houses and public centers, such as shops, restaurants, hotels, and private tombs. The question raised in the current research is: «What are the techniques and decorations used in the mirror work of historical buildings in Isfahan?» Also, the purpose of the present research is to study and investigate the artistic and technical characteristics of mirror works from the Safavid era to the contemporary era of Isfahan City.

Research Method

The current research is a qualitative approach and, regarding the goal, it is applied and has a descriptive-analytical basis. The statistical population is mirror work in 15 buildings in Isfahan and the sampling method is purposeful. Therefore, the target building with the maximum difference has been chosen so that it can be a perfect example of the mirror work of Isfahan's historical building.

Research Background

Regarding mirror work in architectural buildings, including Islamic architecture and residential houses, and studies in decorations, motifs, and mirror work techniques, the following can be mentioned: In the article entitled «Inquiry into the form and meaning of mirror art with an emphasis on conceptual art and Islamic architecture», «Delzenderoudi and Tousian Shandiz» (2019), have discussed the characteristics of Islamic architecture and how the concepts of Islamic mysticism are manifested in mirror art. In his master's thesis, «Research for the transformation in the design and implementation of the decoration of mirror art in interior spaces», «Tahouri» (2020) examined the techniques of mirror work in the interior spaces of Iranian architecture and provided solutions to revive this art in today's architecture. In his master's thesis, «Analysis of the characteristics of form and meaning in the mirror work art of the Qajar period by relying on the opinions of Sohrevardi», «Pargosha» (2020) analyzed the relationship between light and mirror work in the two buildings of Shahcheragh and Nasir al-Mulk House and the influence of monotheistic issues and spiritual thoughts in applying this art. In the article entitled «Effects of visual and conceptual aspects of the mirror work of Hazrat Shahcheragh's Shrine on contemporary works of art», «Mohammadi Vakil» (2019) «studied the comparative study of the concepts of mirror work of Shahcheragh's Shrine and the works of «Monir Farmanfarmaian» and the common semantic and formal characteristics inspired by the mirror work of the Shahcheragh Shrine have been investigated in the works of «Monir Farmanfarmaianin». In

the article entitled «Comparative study of mirror work decorations in the historical houses of Zinat al-Muluk and Nasir al-Mulk» «Deh Jani and Rah Peyma» (2019) examined the patterns used in the mirror work of the mentioned houses and classified the mirror work decorative motifs in these two buildings. In the article entitled «Investigation of symbolic motifs in the mirror work of Qajar houses of Yazd», «Mirdehghan and Azizi» (2019) identified and classified the mirror work motifs of Qajar houses of Yazd and their related symbols and introduced the symbolic origin of motifs in Iranian-Islamic culture and Persian literature. In the article entitled «Investigation of the role of the mirror work art in architectural decorations», «Nikpey and Saadat» (2018) provided explanations about the art of mirror work and its evolution, and also referred to the solutions and techniques of mirror work in modern architectural decorations. In the article entitled «Efficiency of the art of mirror works in beautifying the architectural space, considering the re-imagining of the space of Islamic architecture», «Turkman and Farshchian» (2016) provided explanations about the art of mirror work and its philosophy in Islamic architecture, and examined the role of light in Islamic mysticism and its relationship with mirror work. Less research has been presented so far in mirror work decorative motifs of buildings in Isfahan City.

The history of mirror work

Iranians have long considered water and mirror as two symbols of purity, light, truthfulness, fate, and purity. Mirror work should be regarded as the last initiative of Iranian artists in the fine arts group. Mirror work, in the beginning, started with the installation of integrated mirror pieces on the body of the building, not only inside the building but also on the walls of the pillared porches of the Safavid era decorated with large mirrors. Local documents show that the decoration of the buildings with mirrors started for the first time in the city of Qazvin, the capital of Shah Tahmasb, in 951 A.H. After transferring the capital from Qazvin to Isfahan, mirror work was spread in the newly built palaces of this city and Ashraf Palace. Mirror work has been used in the decoration of many royal palaces in Isfahan, which according to «Chardin» numbered over 137 (Kiani, 1997, 242). The art of mirror work expanded in the 13th century until it reached its peak of beauty in the Qajar period, especially during the time of Naser al-Din Shah, enjoyed special prosperity, and became common as one decoration related to architecture, in many religious and government buildings. During this period, mirror work was used a lot to decorate royal buildings and shrines, and for this reason, this art flourished day by day during the Qajar era. Moreover, wonderful works of Matn Bandi, Rasmi Bandi, Muqarnas, and all kinds of knit works and arabesque work as well as painting and calligraphy were created on the back of the mirror. It was during this period that beautiful works such as the Hall of Mirrors of Golestan Palace and the rooms of Shams Ol-Emareh appeared (Delzenderoudi & Tousian Shandiz, 2019). In the second half of the 14th century, mirror work along with plasterwork (stucco) became popular and innovations emerged in its methods. Using colored glass on a wider level, the creation of new motifs and designs such as flowers and arabesque motifs, and the use of convex glass are the characteristics of this period. In recent centuries, the use of mirror work has also gone beyond the geographical borders of Iran and has spread to some neighboring countries such as Iraq and the Persian Gulf emirates (Kiani, 1997, 244).

Mirror Work Techniques in Isfahan

At first, mirror work was created by using large pieces of mirror which were known as full-length mirrors or body-view mirrors. In this period, the size of the mirror itself was accepted as a value, to the extent that many sources refer to the world-view mirror in Chehelsotoon,

Isfahan, and mention that someone entered through the eastern door of Chehelsotoon and his image was seen in the mirror of the porch (Jaberi Ansari, 1963, 321).

1. Plaster work on the mirror: Plastering on the mirror can be described as the first technique of mirror work that has an Iranian flavor. Using arabesque and Khataee bands on the mirror is the first stage of separation of Iranian mirror work from that of Europeans (Mishmast Nahi & Abed Esfahani, 2007). These decorations are formed by combining the two arts of plaster and mirror works. The typical method of its implementation is transferring the design on the surfaces of the components of this architecture, gluing the mirror parts on the surface and based on the transferred design, applying plaster coating integrally or locally, cutting and trimming the plaster, and making the plaster pattern visible on the mirror work. The design of patterns and placing decorative plaster areas on the work surface are done in such a way that all the seams between the pieces of mirrors are hidden under the plaster coating and the appearance of a single mirror is visible (Salehi Kakhaki & Aslani, 2011). Sometimes mirror work decorations are used in the form of knots and regular geometric motifs and sometimes in irregular plant shapes alone or along with other common materials in Iranian architecture, especially plaster (Aslani, 2015, 257). Among the first examples of this form of mirror work, the plasterwork (stucco) on the mirror in the mirror porch (Eyvan-e Ayeneh) of the Chehlsotoon Palace in Isfahan can be mentioned (Mishmast Nahi & Abed Esfahani, 2007) (Fig 1).

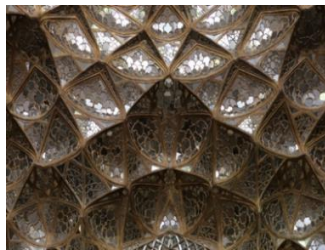


Fig 1. Plaster work on the mirror; the porch of Chehelsotoon Palace.
Source: Authors.



Fig 2. Cupbori, ceiling of Hasht Behesht building.
Source: Authors.



Fig 3. Cupbori, Abbasi Hotel, hotel lobby ceiling.
Source: Authors.

2. Cupbori: This word is derived from «cup» in English, whose equivalents in Farsi include mug, bowl, goblet, wineglass, competition prize cup, etc. According to the traditional artisans of Iran, a cup refers to large glass spheres that are turned into mirrors and are used in Cupbori decorations after being cut (Aslani, 2015, 242). Convex mirrors are used in this mirror work method. The material of the reflected layer in these mirrors is lead metal. Considering the visual characteristics of the back surface of these mirrors and the existence of lines that represent the use of molten lead, it has been used in the technology of these mirrors (Mishmast Nahi & Abed Esfahani, 2007). In this method, the pieces of curved mirrors, which are cut based on the plan transferred to the wall surface, are glued on the plastered wall, and then the wall surface and the mirrors on it are covered with a layer of plaster coating. The initial design is transferred again to the new layer of plaster and then the plaster worker cuts the desired parts of the coating until the mirrors under it are visible (Salehi Kakhaki & Aslani, 2011). The remains of the design of the cedars that have been left in the plinths of some rooms of the Hasht Behesht Palace are from the remaining Cupbori of the Safavid era (Mishmast Nahi & Abed Esfahani, 2007) (Fig 2). Abbasi Hotel

can be mentioned among other buildings decorated with Cupbori mirror technique. The mirror works of the mentioned building are used in the ceiling and corridors and belong to the contemporary period (Fig 3).

3. Mirror works in sashes and knot design (Girih Tiles) of wood and mirrors: Another technique of using mirrors is in sashes and knot-designed doors and windows. Mirror work is used both flat and embossed in sash making. The most common designs in mirror work are turning and repeating decorative motifs in Iranian art. These motifs change depending on the situation and performance capabilities and cause various motifs to emerge. The motifs of mirror work in sashes mostly include arabesque motifs, paisley (Bote Jeghe), framed (Ghab Ghabi) motifs, four-lobed flowers, and bergamot (Saedi, 2017) and doors and windows made of knot patterns in the form of geometric knots. Mirror work has been used in the sash of several residential houses in Isfahan, including the Constitutional House (Fig 4). In the knot-designed decorations of wood and mirror, the combination of mirror and wood can be seen, so that the background (Alat) of this knot pattern is wood and the knot shapes (Loghat) of that are mirrors. The mirror decorations with wooden knots in Chehelsotoon and Hasht Behesht palaces differ from other mirror decorations used, and it is possible that they do not belong to the Safavid period, but were added to these two places in later periods (Shirvani & Khosravi, 2017).

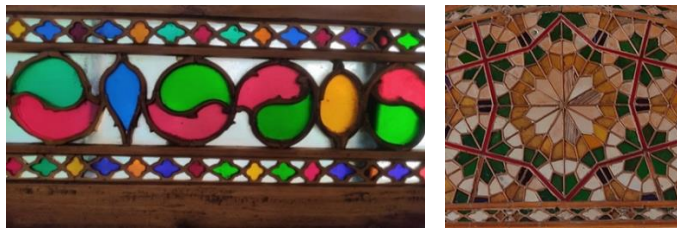


Fig 4. Mirror work on the sash, Isfahan Constitutional House. Source: Authors.

4. Embossed and semi-embossed mirror work technique: This method, which covers the wall and ceiling widely, creates a uniform layer on the outermost layer of mortar on the wooden canvas of the ceiling or the canvas of mud and plaster of the wall with Sarooj (plaster of lime and ashes or sand) mortar. The amount of protrusion depends on the cutting patterns of the mirror and then the design. The simplest type, which has a small protrusion and slope, is usually shamsa (decorated rosette) or geometric motifs that have small patterns and are mostly implemented on the surface of the wall. Vathiq Ansari's house is an example of this technique (Shirvani Dashtak, 2017). Another method is the technique of placing three embossed pieces of triangular mirrors together in such a way that they form a pyramid and become protruded. This technique can be seen in the walls, gables (Iachaki), and decorations around the fireplace (Hashemi Hosseinabadi, 2011) (Fig 5).



Fig 5. Embossed and semi-embossed mirror work; From the left: Vathiq Ansari, Sheikh ol-Islam, Qazvini, Imamzadeh Ebrahim Houses. Source: Authors.

5. Painting on the mirror: Painting on the back of the mirror is used in the head of the closets, the margins of the doors, and decorative frames; the backs of the mirrors were painted with designs of flowers, birds, bushes, and natural landscapes (Khawaja Ahmad Attari, 2016, 177). Paintings of flowers and birds are placed on large mirrors, inside the niches and on the door frames of the Haghghi House (Hashemi Hosseinabadi, 2011) (Fig 6).



Fig 6. Painting on the mirror; Vathiq Ansari, Akhavan Haghghi, Qazvini Houses.
Source: Authors.



Fig 7. Ruby (Yaghooti) mirror work; Akhavan Haghghi House.
Source: Authors.

6. Mirror work combined with glass (Ruby): Using mirrors and colored glasses in the form of turning, circular, almond-shaped, etc., where the pieces of the mirror are glued on the glass, is called the technique of mirroring with glass (Hashemi Hosseinabadi, 2011) (See Figure 7). This new method of mirror work is known as ruby (Yaghooti). Mirror pieces cause light reflection in the space and, besides creating shimmer, they play a significant role in illuminating the environment (Saedi, 2017). An example of this technique can be seen in the reconstruction of parts of Kakh-e Marmar, the decorations of the Shah Abbas Hotel in Isfahan, and the house of the Akhavan Haghghi (Kiani, 1997, 243).

Table 1. Mirror work techniques in historical places of Isfahan from Safavid to contemporary.
Source: Authors.

No.	Places	Era	Plaster work on the mirror	Cupbori	Mirror in knot design	Embossed & semi-embossed	Painting on the back of the mirror	Mirror combined with glass
1	Chehel Sotoon	Safavid	*		*			
2	Hasht Behesht	Safavid		*	*			
3	Rakib Khaneh	Safavid	*			*		
4	Abbasi Hotel	Contemporary		*	*	*		
5	Tomb of Agha	Safavid				*		
6	Mirfenderes ki Tekye	Safavid				*	*	
7	Emamzadeh Shahmirhamzeh	Contemporary	*			*		

No.	Places	Era	Plaster work on the mirror	Cupbori	Mirror in knot design	Embossed & semi-embossed	Painting on the back of the mirror	Mirror combined with glass
8	Emanzadeh Ebrahim	Contemporary				*		
9	Qazvini House	Qajar			*	*	*	
10	Martha Peters House	Safavid						
11	Aristotelian House	Qajar				*		
12	Vathiq Ansari House	Qajar				*	*	
13	Sheikh ol-Islam House	Safavid-Qajar	*		*	*		
14	Akhavan Haghghi House	Safavid			*	*	*	*
15	Constitution House	Qajar			*			

Decorative Motifs

The motifs used in the mirror works of Isfahan buildings have been analyzed in three sections: geometric motifs, plant motifs, and inscriptions. Geometric patterns include knot patterns and geometric combinations, including rectangles, ovals, shamsa, and bergamots, and plant patterns include types of flowers and vase designs.

1. Geometric Motifs: Geometric motifs are one of the most common motifs in the mirror works of Isfahan buildings, which include various shapes. Regular geometric shapes such as circles, rectangles, and ovals in the form of a frame, surrounded by plasterwork (stucco) decorations and sometimes painted on mirrors, are repeated in different spaces, such as columns and walls adjacent to the niche (Fig 8).



Fig 8. Frame view; From the left, the houses of: Vathiq Ansari, Qazvini, Akhavan Haghghi, Mirfenderski Tomb, Chehelsotoon. Source: Authors.

1.1. Decorative Shamsa: A shamsa is a type of star or sun-like design that is decorated with arabesque and Khataee patterns, and its position is like a bergamot in the center of the design. The symbolic representation of shamsa (Sun) has taken an important place in Iranian art. The shamsa is seen in most works of art and is inspired by the circular motif of the sun and has many symbolic meanings and concepts that can be referred to as a symbol of divinity and the light of unity (Khosravi, 2011). Shamsa is among the most frequent motifs in the historical buildings of Isfahan, which can be seen in buildings belonging to the

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Safavid and Qajar periods, individually and separately, along with plasterwork decorations, on the walls around the niches and the ceiling (Fig 9).



Fig 9. Mirror shamsa; Vathiq Ansari, Aristotelian, Akhavan Haghghi, Sheikh ol-Islam, Marthapeters, Qazvini, Tomb of Agha, Hasht Behesht houses. Source: Authors.

1.2. Mirror work in Muqarnas: The Muqarnas used in the Qajar buildings of Isfahan are very detailed and beautifully worked on the domed ceilings and giloeyis. Almost all Qajar houses in Isfahan have more or less Muqarnas (Fanaei, Mojabi, & Ayatollahi, 2011). This method has been applied to two methods of Muqarnas arrangement in Imamzade Mirhamzeh, related to the contemporary period and ceiling Muqarnas in buildings of the Safavid period in Isfahan city, including Rakib Khaneh, Tomb of Agha, Martha Peters House, Akhavan Haghghi House, and Hasht Behesht Building. In the Haghghi House, Muqarnas of Shahneshin (Tablinum) is shown with mirrored stars and covered with plaster. The mirrored surface of this ceiling with the sun in the middle and the surrounding stars is a symbol of the night, whose light reflection forms the starry sky (Khwaja Ahmad Attari, 2016, 179) (Fig 10).

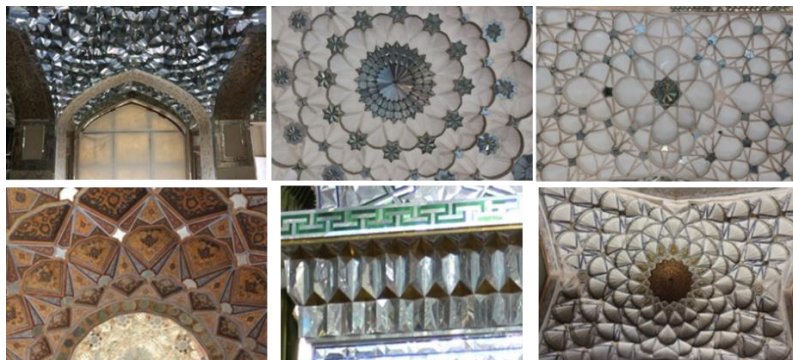


Fig 10. Ceiling Muqarnas; From the right: Tomb of Agha, Akhavan Haghghi House, Martha Peters House, Rakib Khaneh, Imamzadeh Shah Mirhamzeh, Hasht Behesht. Source: Authors.

1.3. Knot: Knots are another group of geometrical combinations of Iranian architectural decorations that are formed based on the principle of meaning and using straight lines, and create the background (Alat) of the knot (Sherbaf, 1993, 92). Roman knot is only one type of motif that can be used alone or in combination with other motifs (Najib, 2019, 155). Considering the naturalistic themes in the buildings, their facades, which are covered with

two-dimensional and three-dimensional knots bound to the geometry of the polygonal star, can contain implications for the universe. Among the geometric patterns, those with stars are more reminiscent of the sky. The network of concentric and orbital circles, which is the sub-motif of star knots, is reminiscent of the orbits of the stars, and the equidistant rays of the shamsa are like those that shine in the starry sky (Najib, 2019, 161). Geometric knots are one of the most common mirror motifs in the contemporary period, which are mostly used in religious buildings such as Imamzadehs and Takayas (Fig 11).



Fig 11. Geometric knot; From the right: Imamzadeh Ibrahim, Imamzadeh Shah Mirhamzeh, Rakib Khaneh. Source: Authors.

2. Plant Motifs: whatever is directly or indirectly inspired by all kinds of natural flowers, plants, and trees are called plant motifs (Makinejad, 2008, 50). Another category of common decorations in architecture is the use of plant motifs, which are used in the mirror works of some buildings in Isfahan City, and can be examined in the categories of Arabesque, Khataee, Farangi, Bergamot, Guldani (vase), Bote (bushes), and Shah Abbasi motifs. In the Safavid period, plant motifs, especially flowers, became more naturalistic than in the Timurid period, and flowers such as Peony were added to the decorations of this era. The wavy and interlaced movements of plant motifs in the over-glazed painted tiles became more and more complete due to the easier implementation compared to other techniques. The artists paid attention to the details of plant motifs, and as a result, the plant motifs have a special elegance. The plant motifs of the Qajar period were also influenced by the Westernization trend and other artistic and cultural changes and were moved towards realism (Makinejad, 2008, 42-43).

2.1. Arabesque: Arabesque decorations are interwoven and tangled shapes of buds, branches, leaves, flowers, and plants that are mentioned in the Quran and are known as heavenly plants (Aliabadi & Jamalian, 2011). In the mirror work of the Haghghi House, Dragon Arabesque is executed in a semi-circle frame and applied in the decorations of Rakib Khane and Vathiq Ansari along with plasterwork decorations and paintings (Fig 12).

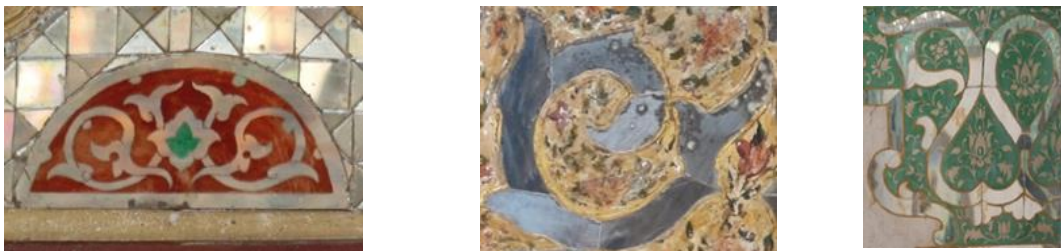


Fig 12. Arabesque mirror work; From the right: Akhavan Haghghi House, Rakib Khaneh, Vathiq Ansari. Source: Authors.

2.2. Farangi: Plant patterns got a newer form in the Qajar period. The artists used abstract plant motifs in a naturalistic form in the form of rose bushes, flower threads, flower crowns, flowers and vases, and even fruits (Fanaei et al., 2011). These motifs were called Farangi and they are clearly found in most Qajar buildings due to the influence of the West (Fig 13).



Fig 13. Farangi decorations in Qajar houses; From the right: Vathiq Ansari house, Aristotelian House, Qazvini house. Source: Authors.

2.3. Decorative Bergamots: Among other decorative arrays, the bergamots used in the mirror work of some buildings can be mentioned, including the Akhavan Haghghi House and the Vathiq Ansari house, along with the plasterwork decorations on the ceiling of the building. In the house of Sheikh ol-Islam, they are used in the form of bergamot, and in the Imamzadeh of Mirhamza, they are used with colored mirrors (See Figure 14).

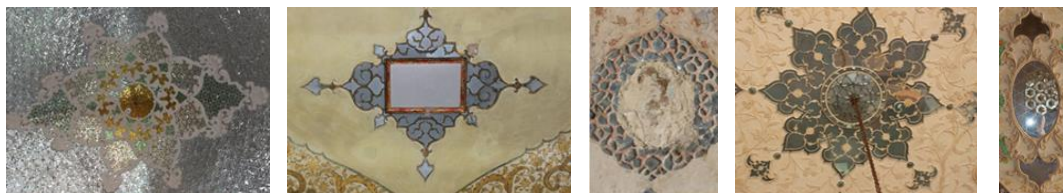




Fig 14. Mirror worked bergamots; From the right: Hasht Behesht, Akhavan Haghghi House, Imamzadeh Shah Mirhamzeh, Vathiq Ansari House, Sheikh ol-Islam House. Source: Authors.

2.4. Vase-form design (Goldani): This pattern is one of the most widespread motifs that is used in most houses. The vase, which is an ancient symbol associated with abundance and fertility, has been embodied in countless different forms from the third millennium BC to the present. According to the symbolic associations of the vase, it is usually shown as being placed on the crescent-shaped base of the moon, and plants are placed in it, which is a sign of abundance or cosmic trees (Shirvani Dashtak, 2017) (Table 1).

Table 2. Vase motif and its distribution in the identified buildings. Source: Authors.

No.	Vase type	Image	Place	Era	No.	Vase type	Image	Place	Era
1	Vase with narrow base with mirror-frame design		Qazvini House	Qajar	4	A vase with a base and a narrow neck with flower and bird painting		Aristotelian House	Qajar
2	Plate-bowl vase		Vathiq Ansari House	Qajar	5	Mirror worked vase with Golfarang		Tomb of Agha	Safavid

No.	Vase type	Image	Place	Era	No.	Vase type	Image	Place	Era
						plasterwork decorations			
3	Plate-bowl vase		Shah Abbasi Hotel	Contemporary	6	Plaster worked vase with Golfarang and bird		Sheikh ol-Islam House	Safavid

2.5. Khataee and Shah Abbasi: There are different types of Khataee flowers: five-leaved and eight-leaved butterflies, Shah Abbasi, Anari, and Piazi. According to the investigations in the mirror work decoration of the buildings of Isfahan, only round flowers can be seen among the Khataee flowers, specifically eight-leaved and five-leaved flowers, and Shah Abbasi flowers. Khataee decorations in these buildings have been implemented in the form of painting on the mirror in Vathiq Ansari house and the technique of combining painting with plasterwork (stucco) in buildings such as Imamzadeh Mirhamzeh (Fig 15).



Fig 15. Khataee and Shah Abbasi; From the right: Vathiq Ansari House, Imamzadeh Shah Mirhamzah, Vathiq Ansari House, Mirfendersky Tomb. Source: Authors.

2.6. Flowers: The flowers used in most of Isfahan's buildings are used in groups, in the form of flowers and bushes, mostly in mirror and plaster paintings. It includes all kinds of natural flowers, including red Rose or Mohammadi flower, Marguerite, Nasturtium, and Cherry Blossom. The four-leaved rose symbolizes the cosmos, the five-leaved microcosm, and the six-leaved macrocosm. In Islam, the red rose (Mohammadi) is a symbol of the blood of the Prophet (Cooper, 2000, 312). Dog-rose is one of the favorite flowers of alchemists. The white nasturtium and the red nasturtium are symbols of alchemists' performance (Chevalier, Gheerbant, 2000, 748). The Cherry Blossom is also the national symbol of China and Japan and a sign of the fleeting sweetness of youth (Bruce, 2015, 95). In addition to flower motifs, in some buildings, plant motifs such as trees and fruits, among which the Cypress, Grapevine, and Pomegranate trees are evident.

2.7. Lily: In Iranian culture, the lily is a symbol of immortality and the Amordadegan (immortality) festival. One of the symbolic signs of the lily of freedom and liberality has been introduced as the symbol of Anahita in ancient texts. With the beginning of the Safavid era and even before that, the image of this flower can be seen in the corners of the miniatures. From the middle of this period, with the establishment of the flower and bird school, lily images increased and engaged in other arts. Perhaps they can be seen as a continuation of the same old motifs of the ancient world and past beliefs (Karimi Pourbaseri, 2009). In the poem entitled «Ramz al-Riahin» by «Mohammed Hadi Kashani» known as «Ramzi Kashani» (one of the poets of the Safavid period and the contemporary of Shah Abbas II), which was written in the description of Isfahan and the discussion on the flowers of Isfahan's Hezar Jarib Garden, the lily is mentioned. Ramzi Kashani mentions the yellow lily in this poem and in the section entitled «Yellow lily flower in its definition» which was planted in the Hezar Jarib Garden of Isfahan at that time. The motif of this flower in the

wall paintings of Hasht Behesht Palace depicts images of an Iranian garden with purple lily flowers and it seems to be a pattern of common Iris or garden Iris, which is also known as German Iris and is known by the scientific name of *Iris germanica* from the Iris family (Kamali, 2013).

2.8. Grapes or Grapevines: In Iranian mythology, grapes are a symbol of blood, which is the dominant force (Shojaei, 2017, 17). In Mithraism, grapes are sacred and a symbol of blessing. In ancient Iranian myths and legends, grapes emerged from the blood of a cow that was created by God and killed in the attack of Ahriman. In addition to the grapefruit, the grapevine or grape tree has symbolic meanings, and along with the ivy tree (Bindweeds), it is mainly associated with the life force or divinity. In Iranian mythology, it is a symbol of fertility and abundance and has eternal sacred power (Heydarntaj & Maqsoodi, 2019, 138). The bindweeds were used as a charm and talisman to ward off evil spirits in the past culture of the people. The pattern of bindweeds on the front of the houses protected the residents from the evil eye and pestilence. The motif of grapes can be seen in some buildings in Isfahan. In the Abbasi Hotel, it is executed in the Cupbori style, and in the Qazvini House, it is made in the form of plaster work (stucco). In addition to the Islamic form, influenced by the West, this motif has also been applied realistically in several buildings of the Qajar period (Mansouri Jazabadi, Hosseini, & Shateri, 2017, 81).

2.9. Cypress Tree: Cypress has been a special concern of people since ancient times. This upright tree, like Myrtle, Common rue, and Ephedra, has long been a special symbol of Iranians. According to Iranian traditions, Zoroaster brought this tree from heaven and planted it in the fire temple (Dadvar, 2006, 101). As a symbol of life in Iran, which has a dry and warm nature, the cypress tree is a sign of permanent life and greenery, it has a special place among the Aryan people, and it is used in the sculptures of Persepolis with very detailed techniques. In addition, it has been a symbol of immortality and life after death. In some decorative patterns, Cypress is a symbol of light and sunshine; like the lotus, which is the flower of the sun, it has been introduced as the tree of the sun (Heydaranataj & Maqsoodi, 2019). According to biogeography, the origin of the mountain Cypress tree is in the Zagros mountains, and there was a forest of this species in the past. The appearance of this tree is bushy and does not grow very high. Painters of the Isfahan school have used the image of mountain cypress (Juniper) in their works more than other painters, which can be considered that the abundance of this type of cypress is more than other species in the region (Seyfi & Niknafs, 2017).

2.10. Pomegranate: Since ancient times, people considered the pomegranate tree to have a magical and mystical power and used the pomegranate branch and its fruit in a number of their religious rituals and ceremonies. Also, this tree and fruit were used to ward off the evil spirits of rodents and even diseases and pains in the body and environment. Iranian people considered pomegranate to be sacred and a sign of unity and divine essence, and they used to pray for it (Shojaei, 2017, 13). The pomegranate is a symbol of immortality, multiplicity in unity, long-term fertility, and abundance. In Islam, it is one of the heavenly trees (Cooper, 2000, 40). Pomegranate was always sacred in the Sassanid period and was used in religious rituals. Its abundant seeds have been a symbol of Anahita's fertility (Heydaranataj & Maqsoodi, 2019). In the beliefs of ancient and post-Islamic Iranians, pomegranate is one of the holy and healing fruits and plays an essential role in making a person healthy and happy and improving his life (Khosravi, 2011). Iranians used to burn the wood of the pomegranate tree while performing religious rituals. In a house during Nowruz and Mehregan, seven tree branches, including a pomegranate branch, were placed, and they were blessed. Zoroastrians give pomegranates to their daughters and sons in the ceremony of marriage

with the intention and desire of fertility and having children (Karimi Pournaseri, 2009). Since the Safavid era, it is customary to recite Yasin Surah forty times on the pomegranate and put it on the Nowruz table, and after turning the year, they eat it for health and blessings (Najafi, 2012). The origin of Iranian celebrations and rituals has a deep connection with cosmic and natural phenomena, as well as climatic and ecological characteristics (Babazadeh Chenarani, 2017, 178). In Isfahan, the cities of Badroud, Natanz, and Shahreza are among the areas where pomegranate trees were cultivated. The pomegranate festival is held every year in November. With these interpretations, it can be said that the traditional beliefs of the people of Isfahan and the type of climate have influenced the popularity of pomegranate motifs. The pomegranate motif in the Cupbori style has been beautifully implemented in the mirror work of the Abbasi Hotel.

3. Animal Motifs: Iranian art and civilization, due to the antiquity and richness of Iran, has many artworks with animal motifs. These motifs are a symbol of various thoughts, beliefs, and convictions that are manifested in the form of works of art. In Safavid and Qajar buildings, the birds' motifs are abundantly observed. Among the birds whose motif was used in the mirror work of the Qajar period houses, the Parrot, Nightingale, Wagtail, Linnet, and Peacock can be mentioned, which are depicted in different spaces of the room such as the ceiling, niches, walls, pillars, and mirror frames (Table 3).

3.1. Birds: Another element used by the mirror work artist in the decorations is depicting birds sitting next to the flower bushes, next to the vase, or on the branches of the flowers and the small and turning stems. Bird motifs have been depicted with techniques such as painting on the mirror, painting on plaster, and Cupbori, and creating a garden that alludes to heaven. The geographical location of Isfahan and the existence of Zayandehroudi have made this city a safe place for the migration of various birds. This was a source of strength and a good item for artists in the design of birds, which avoided mere symbolism and considered realism (Fallah Azizi, 2016). For the first time, Reza Abbasi could take out a small bird from the field of Iranian paintings and turn it into the major theme of the painting. He depicted birds that were native to the gardens of Isfahan (Azizi, 2021). Among them, the motifs of Wagtail, Pheasant, Rufous Nightingale, Peacock, etc. can be mentioned. In the beliefs of the people of Isfahan, spell casters used birds spells as messengers of love, freedom, and comfort to communicate between lovers and spells, or in supernatural matters and spells, nightingales and doves were used to communicate between lovers (Najafi, 2012). Among the birds, the peacock motif has been repeatedly used in the buildings of Isfahan. The peacock is a natural symbol of the stars in the sky; therefore, it is a manifestation of godliness and immortality; it is also the embodiment of love and longevity and the solar animal (Cooper, 2000, 252). The meaning of the peacock symbol is decorations, luxury, arrogance, glory, and splendor, egoism, and resurrection, life combined with love, court life, beauty, royalty, dignity and status, immortality, and praised by all (Dadvar, 2006, 114). In Iranian mythology, peacocks standing on both sides of the tree have considered life as a manifestation of the duality and dual nature of man. The peacock also represents the monarchy and the royal throne of the Persians (Cooper, 2000, 252). It also has a significant presence in the decorations of mosques and religious places during the Safavid period. The reasons for the presence of this motif, especially in Isfahan, besides the fact that the peacock is considered a bird of paradise, perhaps as a gatekeeper and guide for people to the mosque, as mentioned in Attar's poems. According to popular opinion, the image of a peacock over the entrance door of mosques simultaneously repels the devil and welcomes the believers (Khazaei, 2007).

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Table 3. Classification of plant and animal motifs and their distribution in Isfahan buildings. Source: Authors.

No.	Plant motifs	Place	Era	Climate Association	Images
1	Cypress	Abbasi Hotel	Contemporary	*	
		Hasht Behesht Building	Safavid		
2	Grape	Abbasi Hotel	Contemporary		
		Qazvini House	Qajar		
3	pomegranate	Abbasi Hotel	Contemporary	*	
4	Lily flower	Haghighi House	Safavid		
		Qazvini House	Qajar		
		Sheikh ol-Islam	Safavid & Qajar		
		خانه وثیق انصاری	Qajar		
5	Combined flowers	Qazvini House	Qajar		
		Akhavan Haghighi House	Safavid		
		Rakib Khane Building	Safavid		
		Mirfendereski Tomb	Safavid		
		Vathiq Ansari House	Qajar		











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No.	Plant motifs	Place	Era	Climate Association	Images
6	Peacock	Abbasi Hotel	Contemporary		
7	Wagtail	Qazvini House	Qajar	*	
		Akhavan Haghghi House	Safavid		
		Aristotelian House	Qajar		
8	Rufous Nightingale	Constitution House	Qajar	*	
9	Pheasant	Vathiq Ansari House	Qajar		
10	Budgerigar	Haghghi House	Safavid		
		Vathiq Ansari House	Qajar		
11	Linnet	Akhavan Haghghi House	Safavid		
12	Yellow Wagtail	Aristotelian House	Qajar	*	

4. Inscription: Since long ago, in Iranian architecture, all kinds of Kufic, Naskh, Reyhan, Thuluth, Nastaliq, etc. scripts have been used in different parts of architecture with different methods (Makinejad, 2008, 53). Along with existing plant and geometrical themes, the Arabic script, which was the language of revelation, was brought up as a decorative element and created new decorations in architecture, mainly inscriptions (Makinejad, 2008, 67). The

inscriptions used are verses and surah from the Quran or hadiths, which are placed in mirror frames around the building or at the entrances (Fig 16).



Fig 16. Inscription; From the right: Akhavan Haghghi House, Aristotelian House, Imamzadeh Shah Mirhamzeh, and Sheikh ol-Islam House. Source: Authors.

Conclusion

It was mentioned before that the current research is based on two central questions. These two questions are: 1. What are the characteristics of the mirror work decorations of Isfahan city from the Safavid period to the present day? 2. What are the techniques used in the historical building of Isfahan? In response to the first question, it can be stated that in total the decorations of the identified buildings of Isfahan city, many motifs, including regular geometric shapes, such as Muqrans, mirror frames, decorative shamsa, geometric knots, and non-geometric shapes, such as bergamot and arabesque, have been used in the form of mirror work. Although among regular geometric shapes, mirror frames, oval and rectangle shapes, the most abundant are the decorative sahmsa that can be seen on the ceiling and wall. Among the plant motifs, bergamot and vase motifs are the most frequent motifs that have been noticed by artists in all periods. Wagtail has also been of special importance among animal motifs. In general, the use of some plant and animal motifs, such as bird motifs, while having their own symbols rooted in Islamic and Iranian culture, are depicted in some cases influenced by climate and geographical conditions. As an indicator, it can be said that motifs related to native plants and animals of Isfahan were mostly used in buildings related to the Safavid and Qajar periods. In response to the second question, in the Safavid period, the main technique used in the buildings was plasterwork on the mirror and Cupbori, and in the Qajar period, it was more embossed and semi-embossed mirror work. In the contemporary period, mirror work with the palaces and houses style has been minor, and it has been implemented mostly in religious buildings, such as Imamzadehs.

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