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LANDSCAPE REPRESENTATION IN THE CHINESE AND PERSIAN PAINTINGS (YUAN-SONG/ ĪL-KHĀNID MONGOLS ERAS)

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ABSTRACT:

Cultural relations between Persia and China grew even closer after the Mongol conquest of both countries in the 13th century, when the Īl-Khānids came to power. Mongol rulers were also affected by Chinese art and cultural heritage; it then transferred to Iran by political, commercial, and then cultural relations. So they prepared the conditions for mutual artistic inspirations, especially in painting. Since the illustrated Persian paintings clearly demonstrate foreign influences, including the culture of different nations, significantly China's cultural impact on Iran, the need for this investigation becomes more apparent in the period.

The aim of this study is to analyze and describe the manifestation of landscape in the Chinese and the Īl-Khānids paintings and focuses on the study of the similarities and differences of these styles and symbols. For this purpose, two main elements have to be investigated: the elements of Natural landscape in Chinese and Persian paintings in the Yuan and Song/ Īl-Khānids eras and the transmission of similar features. The authors suggest that the Cultural Adaptation Process is both creativity and genius development factor and a factor in the art social integration; for that reason, it has an importance. The result shows there were two ways to convey the style and techniques of Chinese landscape painting. One way is to copy blindly, and another way is a combination of deformed elements and derivation of indigenous features in paintings. Chinese's myriad cultural influences have led to a wide array of the new style paintings in the Īl-Khānid Mongols eras, but the creativity of the Persian artists was also involved in creating the new and eclectic style as well.

INTRODUCTION:

The most important task in the study of Chinese and Persian painting history is the description of a different visual language and its special meaning. This can't be accomplished without reviewing early Chinese and Persian paintings, which demands the knowledge of a history of simulated illustrations in Chinese and Persian art. Only then can similarities in visual language be traced and their meaning understood. This comprehensive art history can explore the characteristics, leading contributors, and important influences of each prominent period of Persian and Chinese art. Therefore, in the context of the elements of naturalism and landscape in painting during the Yuan Sung / Īl-Khānid Mongols period, one must refer to historical events that influence cultural developments.

“After conquest of Iran by Mongols, peace and security that followed for the whole empire resulted in Iran's becoming more exposed to Chinese influence” (Tadjvidi, 1992). The Mongol invasions and conquests took place during the 13th and 14th centuries, creating the vast Mongol Empire which by 1300 covered large parts of Eurasia (White, 2011). Mongols continued to rule China into the 14th century under the Yuan dynasty, while Mongol rule in Persia persisted into the 15th century under the Timurid Empire. Since, the Mongols could not have ruled without the help of some of the local governments, During the period of conquest by the Mongol empire, the local government was formed in Anatolia and western Iran. These local governments were ruled by local leaders, successors of the Turkish Seljuks.

Although Genghis Khan invaded Mongolia, China, Central Asia, and Iran, Genghis Khan's successors influenced the transformation of West Asian society. In the 13th century, Īl-Khānids ruled in Iran under the rule of the Mongols. Despite this bloody beginning, the Il-Khanate became a highly cosmopolitan state, having close connections with both China and Europe, and a composite administration and legacy combining Mongol, Iranian, and Muslim elements (Biran, 2016). Of course, the historical and cultural relations between Iranians and Chinese people trace back to the reigns of the Sassanid and Parthian empires in Iran and the Han and Tang dynasties in China. Not only because of their loyalty to the traditions but also because they share a lot in common cultural identity.

Also, the Silk Road was the turning point in the history of both countries and played a significant role in increasing cooperation between China and Iran. It facilitated the exchange of goods, such as silk, gold, spices, and many exotic materials, and people-to-people bonds between the two nations. In fact, through the Silk Road, the influences of Iranian and Chinese civilizations have been sensed in every sphere of exchange. Thus, this road was very important not only in commercial and trading relations but also in exchanging the different attitudes to arts. So, the artistic connections of artists were developed, especially in pottery and painting. A painting was a way to depict royal myths and legends dynasties and also hunting, wars, and the scenes of doing religious rituals and book decorations to get through to what's behind it (worldly or spiritual).

In general, in this period, Chinese paintings more appeared in Iranian books and inscriptions, and influenced Iranian paintings. summarizing, it can be said since Persians have special flexibility to face the new cultural challenges, first, they gradually melded with them socially and then they started the gradual path to creative breakthroughs. Therefore, the art of painting flourished under Mongol rule.

Thus, Painting is a medium by which the tracks of cultural intercourse between Persia and China of this time can be traced, but we primarily focus on describing the nature of landscape motifs in this study.

What affinities these paintings reveals with what art we can connect them? We cannot answer very definitely, and we cannot find the distinct frontier to trace similarities between Chinese and Persian landscape painting. The cultural influence of religious ideas which are deep rooted, appears to affect the substance of changes which may clash with ideas and rules that stem from long traditions.

Meanwhile, landscape painting, also known as landscape art, in the Yuan-Song era, has had a great impact on the Īl-Khānid Mongols paintings. It is the depiction of natural scenery such as mountains, valleys, trees, rivers, and forests. “The attention that landscape elements received in the Īl-Khānid illustrated manuscripts was new in the Islamic painting tradition, and undoubtedly inspired in part by the high status of landscape painting in China” (Berlekamp, et al., 2015).

This descriptive-analytical research aim is to capture the similar characteristics of the landscape representation in the Chinese and Persian paintings in the Yuan-Song/ Īl-Khānid Mongols eras. For identification of the elements of lines pattern, we propose a retrieval based approach. Therefore, in this study, the automatic morphological segmentation is performed to break down the elements of lines pattern, or lines compositions into their minimal details. These two nations, with their countless specific cultural and ethnic features, have common links between them that we attempt to identify in this brief study.

For the purposes of this study, the central element of this hypothesis is Cultural Transmission (hereafter, CT) as a means to explain variation, similarity, and relatedness, which has led to foster artistic, creative exchange between two nations. Therefore, this study revolves around CT theory. So, this study reviews CT research in the landscape paintings and outline the theoretical framework for the study of material culture. We argue that CT can shed much light on understandings of why cultural material changes over time.

The visual elements include Line - Shape - Tone - Color - Pattern - Texture - Form are the building blocks of composition in art. So, we tried to analyse some Chinese and Persian paintings to examine these component parts to see how they combine to create the overall effect of the artwork. But, the great

challenge in this essay is, even though the CT occurred in painting, not in the same degree or in the same way.

Before discussing this particular group of pictorial works, we must review their historical background in the Yuan-Song/ Īl-Khānid Mongols period, when the china and Persia interrelation culminated. In the following, first, we will describe the paintings and then decomposition the dataset. In the next section, we present our methods for feature extraction and sub-pattern matching.

Historical, cultural, religious background of the Īl-Khānid Mongols period

After dominating in Iran, Hullaco advanced from the east towards the north. In the first phase of Mongol rule the conquered territories in Persia were under civil administration. Since Hullaco and his wife Doguse Khatun were Buddhist, it was favorable for Nestorians and Buddhists in Maraghe. As, Rashid al-Din Fazl-Allah Hamadani (d. 1218), writes in his book, 'History of Mongols in Iran': "Doguse khatun was born in a Christian family and supporting her coreligionists, and Hullaco was following her. That is why in the early years of in the early years of Mongols ruling, Islam was not more important than Christianity (Godard, 1941).

After passing Hullaco, his son Abagha came to the throne. He established the Īl-Khānids dynasty in Iran, and they were not under the protection of Mongolia Khans. Abagha and his successor's administration governed the country, according to the Iranian previous king's decrees and regulations. Indeed, they were an Iranian dynasty. Their government began in 1275 A.D. and ended in 1335 A. D., and their last emperor of the Īl-Khānids dynasty was Abu-Sa'id (Eqbal Ashtiani, 2000).

In 1293 A. D., Ghazan Khan came to power, and Islam became as an official religion (Godard, 1941). It brought many advantages for Iran: decreased the Mongol's atrocity also, Ghazan Khan ruled independently and was not under the protection of Khans of Qaraqurum. So, the idolatry was brought to an end that Mongols had spread in Iran, and he abolished Buddhist and Shamanist domination on Islamic clerics (Seddigh, 1963).

He founded Rob' Rashidi in the eastern of Tabriz with many facilities for scientists, calligraphers, and painters. The artists of Mesopotamia and eastern and central part of Iran were coming to Tabriz, Maragheh and Sultaniyyah (Haqiqat, 2000). Also, he authored the book of Javami' al-Tavarikh, which ended in the time of Uljaitu, and its inscriptions were illustrated, using the best styles and techniques of Iranian painting (Godard, 1941).

In the Uljaitu and Abu-Sai'd periods commercial relations developed between Iran and China. Indeed, commercial relations with eastern countries had progressed faster in Asia by the Chinese merchants, especially Asian countries, such as Iran. On the other hand, Uljaitu and Chinese envoys signed a commercial treaty, and Uljaitu gave them some privileges. During this period, Iran was a part of a great emperor that was spread to the farthest parts

of Asia. Despite, the political relations with other countries were weak and declined, but commercial ones survived (Gray, 1977) that led to developed diverse cultural, political, religious, and commercial exchanges.

Within these exchanges, the production of new artistic concepts derived from a dynamic relationship between the art development and facing to the new cultural identities as a result of Buddhists and Daoists. It should also be noted that most researchers agree that the connection between the Īl-Khānid Iran and Yuan China had a lasting effect on Islamic art (Kadoi, 2009; Akbarnia, 2007; Komaroff, et al., 2002).

Therefore, “after conquest of Iran by Mongols (thirteenth-fifteenth centuries), peace and security that followed for the whole empire resulted in Iran's becoming more exposed to Chinese influence. Genghis Khan was such an admirer of Chinese art that he ordered artists from China to accompany him on all his travels. From this period, Persian painters were in direct contact with those of China” (Tadjvidi, 1992). Therefore, one of the reasons for the florescence of illustrated manuscripts in Iran at the turn of the fourteenth century, especially those on historical subjects, was the Īl-Khānids' increased connections with their Mongol compatriots in China (Allsen, 2001).

Chinese historical, cultural, religious background in the Yuan and Song eras

After the decline of the Tang dynasty (Chinese: 唐朝), China has drifted into a state of chaos. The country was divided into some feudal system. The Song dynasty (Chinese: 宋朝) was an imperial dynasty of China that began in 960 and lasted until 1279, and divided into two distinct periods: Northern Song and Southern Song. It was eventually conquered by the Mongol-led Yuan dynasty (Broadberry, et al., 2018).

The Yuan dynasty (Chinese: 元朝) was a successor state to the Mongol Empire after its division and a ruling dynasty of China established by Kublai Khan, leader of the Mongol Borjigin clan, lasting from 1271 to 1368. In Chinese historiography, this dynasty followed the Song dynasty and preceded the Ming dynasty (qixiang, 1982).

After falling Song dynasty, Mongols captured the China. They first captured the north and then the sought and killed the whole of their enemies as a strategy. Then Kublai khan founded Mongols dynasty in Peking and Chinese called it Yuan dynasty that means "stranger" in Chinese (Fitzgerald, 1985).

Art and cultural works at this period were influenced by the Mongols arts, and a rich cultural diversity developed during the Yuan dynasty. The political unity of China and much of central Asia promoted trade between East and West. The Mongols' extensive West Asian and European contacts produced a fair amount of cultural exchange. It had significantly eased trade and commerce across Asia until its decline; the communications between Yuan dynasty and its ally and subordinate in Persia, the Ilkhanate, encouraged this development (Guzman, 1988).

One of the greatest painters of the Yuan Dynasty, Zhao Mengfu, received a court position from Khubilai Khan, and along with Zhao's wife Guan Daosheng, who was also a painter, Zhao received much support and encouragement from the Mongols. Khubilai was also a patron to many other Chinese painters (Liu Guandao was another).

Characteristics of the Īl-Khānid Mongols Landscape Painting

Persian painting is deeply rooted in the history of Persian culture and civilization. A Persian sense of artistic aesthetics always appears in their artistic frames. They always want to decorate their surrounding with illustrations and to find their place in universe. So, painting has always a special place in Persian art, it has experienced great changes and also was supported by many rulers and Persian artistic personalities. In the 13th century, when Mongols came to the throne, Mongols and Chinese arts mixed with Persian arts. So, according to the Chinese art influences, landscape painting became significant.

In the Mongols period, it was a heyday in Persian poetry and painting development. At first, Mongol rulers were Buddhists, then believed in Islam, and again some of them returned to Buddhism and Christianity. Therefore, in this religious atmosphere, special attention was paid to landscape paintings, and in the late 13th century/ the early 14th century, the trees, plants, and landscapes in Chinese style appeared in the paintings of the Mongols era in Iran.

Rob`e-Rashidi was the most important cultural and artistic center of the Īl-Khanids dynasty, where the Persian painting was renewed. One of the masterpieces of the First Art School of Tabriz (Rashidi quarter) is Ferdowsi's Shahnameh (known as the Shahnameh of Demot or Abu Saeedi), whose drawings have been executed by several painters. Demot's Shahnameh can be considered the culmination of the development of the Īl-Khanids painting. Horses and landscapes are drawn according to a pattern, and rocks and clouds are adapted from the art of the Yuan-Song.

The depiction of the members of the royal family running with the little Mongol's horses became the subject of most landscape paintings. In this era, distinguished characteristics of landscape paintings included traditional bell tents shaped and keeping edges straight in reach weaving.

A wide variety of colors and the high illustrations' accuracy with attention to detail is the main features of the paintings of this era. In most of the paintings, there are common features; the main element has drowned in darker colors than the context. Also, the characteristic of the Īl-Khānid Mongols painting is natural landscapes with pale colors in the style of Chinese painting.

Most likely, this new style was the copy of Chinese designs on vessels or probably on the vessels of Mongolia and Central Asia that strongly were

affected by Chinese style, or the Chinese motifs and styles were costumed by Chinese artists that were in Mongol's court in Maragha.

An important way in which Chinese influence on the painting of this period manifested itself was in the use of a softer, more delicate and sinuous line and shading, in contrast to the boldly outlined areas of flat color that characterized Persian painting (Gray, 1977).

Traditional Chinese landscape painting in the Song and Yuan eras

Chinese painting is regarded as the most abstract and sublime form of art in Chinese culture. According to historical sources, painting has been practiced in China through a variety of media for a long time, and Chinese artists incorporate a keen understanding of the aesthetics of the Chinese landscape and narrative scroll painting combined with a need to produce original culture.

“The Chinese Painters are trained not only to convey the objects but also express the mood and the spirit of the subject. The Chinese also believe that the painting is the expression of the painter’s knowledge and temperament. In this way, Chinese Painting becomes something much more than art” (Shu, 2014).

Chinese landscape painting is dominated by images of magnificent mountains and rivers, blossoming flowers and colorful birds, serene deities, beautiful ladies and elegant scholars, fine horses, palaces, and gardens. “These scrolls are not only fascinating works of art but also windows into Chinese religious beliefs, folk customs, and political ideology during a time of dynastic crisis and transition” (Tsai, 2015). “The philosophy of traditional Chinese landscape painting would be summed up as “regarding Nature as the teacher outside and using the spirit or intellect as the creative source inside”. Landscape paintings need to be created from the combination of the natural environment and the creative vision. “Regarding Nature as one's teacher outside” does not mean only painting the appearance of a mountain, an animal or some flowers, but also means feeling the spirit of nature. The creational process is to turn the scenery of nature into scenery of the heart, and then transfer the combination of both into paintings” (Shu, 2014).

Ever since the Southern and Northern dynasties (420–589), painting had become an art of high sophistication. Painting during the Song dynasty (960–1279) reached a further development of landscape painting; immeasurable distances were conveyed through the use of blurred outlines, mountain contours disappearing into the mist, and impressionistic treatment of natural phenomena. The Shanshui style painting, "shan" meaning mountain, and "shui" meaning river, became prominent in Chinese landscape art. The emphasis laid upon landscape was grounded in Chinese philosophy; Taoism stressed that humans were but tiny specks in the vast and greater cosmos, while Neo-Confucianist writers often pursued the discovery of patterns and principles that they believed caused all social and natural phenomena (Ebrey, 1996).

The painting of portraits and closely viewed objects like birds on branches were held in high esteem, but landscape painting was paramount (Morton, 1995). By the beginning of the Song dynasty a distinctive landscape style had emerged (Barnhart, 1997). Artists mastered the formula of intricate and realistic scenes placed in the foreground, while the background retained qualities of vast and infinite space. Distant mountain peaks rise out of high clouds and mist, while streaming rivers run from afar into the foreground (Morton, 1995). The paintings of the Northern Song often depicted huge, sweeping landscapes. While, the paintings of the Southern Song often focused on smaller, visually closer, and more intimate scenes, while the background was often depicted as bereft of detail as a realm without concern for the artist or viewer (Ebrey, 1996).

In the paintings of the Yuan dynasty¹, the possibility of a richer visual expression, rich coloring, and "verisimilitude" is shown clearly. In the Yuan dynasty, Song's painters continued their activities, and rejected the credit of Song's paintings (Pakbaz, 2008).

Culturally, Chinese people have a special respect for the beauty of landscape, which is reflected in the painting.² All landscape elements have nearly the same importance in painting, although some elements' effect is slightly more. Landscaping topics have a deeper meaning to the Chinese. "Clouds are thought to be the blending of the male and female, the sky and the earth, and the rain, the climax of the union. It comes from an old Chinese creation story in which heaven or sky, the Great Father, and earth, the Great Mother, are thought of as a conjugal couple engaged in never-ending intercourse" (Eberhard, 2006).

In Chinese landscape painting, the higher soul experiences oneness with nature, and it is the ultimate reality that pervades all areas of life. It is thought that mountains are related to cosmic order and permanence, and virtually every mountain has its resident mountain god. Mountains are large within the context of the painting, indicating their importance in Chinese life. When placed in landscape painting, the human form, in size and perspective, is much smaller and often dwarfed by the images of nature.

Thus, Chinese "paintings emerge from a culture field and must be interpreted in relation to the net of culture. A given culture will be implicated by the sign system used by the painter. Everyone agrees that in Chinese landscape

¹ -In 1260, the Song dynasty was overthrown by the Yuan dynasty. But the painting didn't stop. Yuan with its founder Qublai-Khan ruled for about one hundred years and influenced more on Chinese arts and painting. In this period the subjects of paintings had the meanings different from before, for example, landscapes were not places in peace and depicted the real and tenacious places and also their atmosphere were completely different from Song period.

² - Chinese paintings are divided into two major categories: freehand brushwork (Xieyi) and detailed brush work (Gongbi). Gongbi style requires great care and grace, the strict composition has fine elaboration. The effect is highly decorative. Freehand style generalizes shapes and displays rich brushwork and ink technique. It is easier for beginners. Traditional Chinese painting has its special materials and tools, consisting of brushes of different types, ink and pigments of different textures, Xuan paper, silk and various kinds of ink slabs. Chinese people have called writing brushes, ink sticks, paper and ink slabs the four treasures of the study since ancient times.

paintings, the most important cultural bond is to ancient Chinese Taoism, and to a lesser degree, to Confucianism. Obviously, then, the key for these landscapes is an alert understanding of Taoism, and the primary source is the book *the Tao Te Ching*” (McMahon, 2003).

Adaptation of subject and style of Chinese Landscape Paintings

Landscape painting is visual art that is, perhaps, one of the greatest contributions of China to the world. A Landscape painting or landscape art is the illustration of natural scenery such as mountains, valleys, trees, rivers, and forests through the eyes of an artist. “Traditional Chinese landscape painting is better known as *Shanshui* 山水 (literally meaning mountain and water)” (Law, 2011), that it was later characterized by a group of landscape painters such as Zhang Zeduan 张择端 (Sirén, 1956). In general, “A Chinese landscape painting, *shān shuǐ huà* 山水畫 (mountain + water + picture), is literally a painting of the mountains and the water, both material and tangible features of nature” (Diep, 2017).

In Chinese painting, landscape backgrounds for figures can form an important part of the work. Sky is almost always included in the view, and weather is often an element of the composition. In general, detailed landscapes as a distinct subject are not found in all artistic traditions in the Yuan-Song era and develop when there is already a sophisticated tradition of representing other subjects. In other words, Chinese landscape painting is the influence of Buddhist concepts and practices. “Mountains became the staple of Chinese landscape paintings as Buddhists and Daoists searched for temple sites where they could cleanse the mind of worldly thoughts and cravings through communion with nature” (Sullivan 1979). Thus, “landscape painting was regarded as the highest form of Chinese painting, and generally still is” (Rawson, 2007).

Mongols and Chinese arts mixed with Persian arts as the paintings and books of that era witnessed (Zaki Mohammad, 2005). As a result of CT, landscape painting became significant, and there were a great number of landscape paintings of the art of the Far East.

In the Īl-Khānid Mongols eras, with uniform but distinctive characteristics, the Persian paintings thrived and saw their heyday in the Southern Song Dynasty when China developed close economic and cultural ties with the Īl-Khānid Mongols. Assuming that the available Persian paintings from the Īl-Khānid Mongols eras are adapted from the Yuan-Song era mode of expression, there are two ways to compare subject and style:

One way is to copy blindly Persian artists from Chinese paintings, and the other is a combination of deformed elements and derivation of indigenous elements. The composite visual elements have been moved in both cases, indicated in the second case by the creativity of the artist.

With regard to the former case, there are a few paintings revealing the trees and the tree branches in an album, which are spread around on the surface of

the entire painting by means of the gentle movement of lines. One of them could be a blind copy of a Chinese "tree" by a Persian painter (fig. 1). A motif of trees is essential to painting objects in Chinese landscape paintings.



Figure 1 The sacred tree of Buddha A photo from *Jami al-Tawarikh* by *Rasheed al-Din Al-Hamazani*, Folio 47 Recto. The collection of Royal Asian Society in London Rab-i-Rashidi 1314.

In the first step, we focus on the blind copy of the two common objects in naturalism, which has been popular in Chinese landscape paintings for centuries: the trees and the water. These iconic elements have influenced many artists and styles since as early as the Song Dynasty. Because they present a variety of opportunities for the digital implementation, they are ideal for analyzing in this study. "Some manuscript paintings, such as *Jami al-Tawarikh* (Universal History) of *Rasheed al-Din, Shahndmeh* (Book of Kings) of *Firdausi*, reveal strong influence from China" (Sugimura, 1992).

In Figure 1, the lines and shading are softer, more delicate, and sinuous, as is clear here. The brush stroke textures of this sample painting show the same style in Chinese landscape painting. Usually, Chinese landscape painting consists of mountains, river, trees, etc. It seems the artist of this work blindly imitates Chinese painting, both in motifs and the brush style. The following analyses focus on content, composition, light and value, texture and pattern, space, brushstroke, line and color, as shown in Figure 2. In the analysis, we try to use the categories listed according to visual elements as guidelines for identifying important characteristics of the painting.

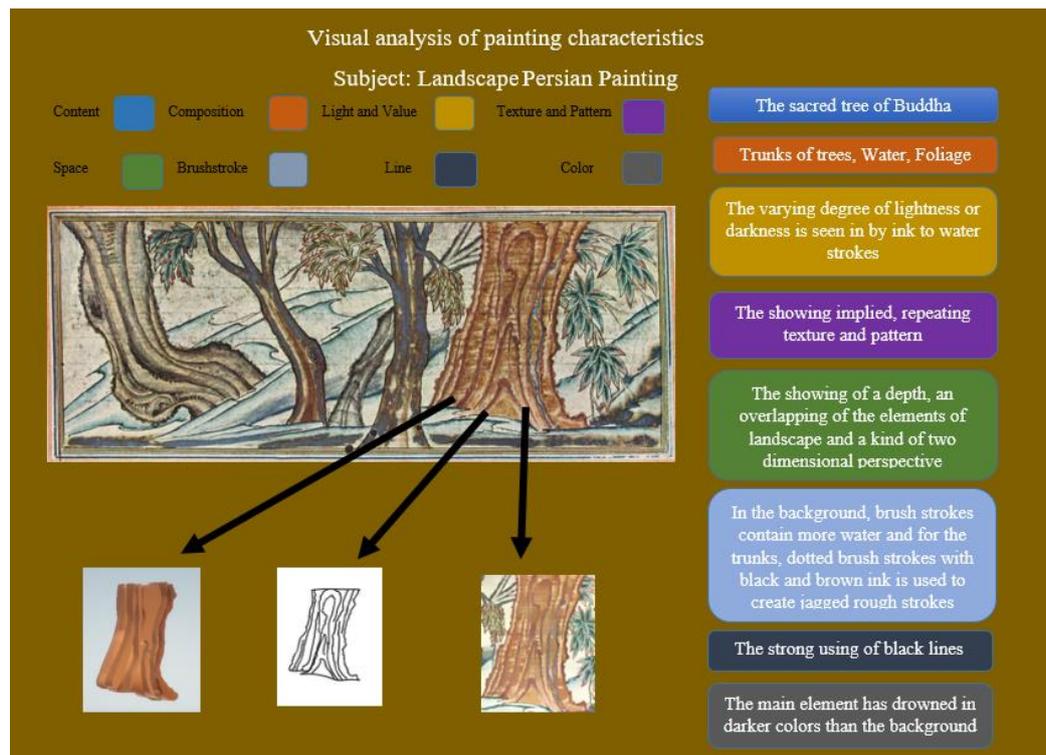


Figure 2 Visual analysis of The sacred tree of Buddha (Authors, 2021).

In this painting, the Īl-Khānid painters have used the two techniques to communicate depth inspired by the Chinese culture while painting. In the first stage, the painting is made in the style in which there is the use of different values, including the degree of lightness or darkness in a color. (Merriam-Webster Online Dictionary, 2012) where the foreground objects with darker colors while receding objects are painted with lighter colors, as usual style of the Song Dynasty. This gives the painting a sense of atmospheric perspective (also known as aerial perspective) refers to the effect the atmosphere has on the appearance of an object as it is viewed from a distance. In art, and especially painting, artists attempt to mimic this effect as a way of creating depth or distance (three dimension) on an otherwise two dimensional (flat) surface (Brooks, 2017), As shown in the painting "Mountains and Pines in Spring" by Mi Fu, belonging to the Song Dynasty (Fig. 3).



Figure 3 Mountains and Pines in Spring (Part) Mi Fu (1052-1109, Song Dynasty).

In the painting of "Mountains and Pines in Spring", the wonderful mountain valleys are surrounded by cloud in the background and the trees on the hills in the foreground has divided this picture into two sections. Also, the artist balanced the composition by using bright areas of color to equilibrate the large dark masses.

Both of the Figures 1 and 3 include free movement and distribution of lines in expression. In the sacred tree of Buddha, the artist from Jami al-Tawarikh's book had tried to imitate this feature. The trees are painted in a darker color, and the background is pale.

Another technique is the use of varying ratios of ink to water in the brush strokes. In the background, brush strokes contain more water, which not only makes the value lighter but also creates more bleed around the stroke. This has the effect of giving the background objects a blurry, out-of-focus appearance (Strickland, 2011). This type of brushstroke is another important characteristic of the paintings of the Īl-Khānid era. In Figure 4, the scanned digital image of the brushstrokes is shown in the tree branches and trunks created with ink.



Figure 4 The scanned digital image of the brushstrokes is shown in the tree branches and trunks.

In the paintings of Jami al-Tawarikh's book, black dots are painted along the trunks representing leaf buds, and are used to give an organic, lively quality to the painting, and for the trunks, a brush with black and brown ink is used to create jagged rough strokes (Fig. 1). These techniques tried to be also used in other paintings of the Īl-Khānids dynasty.

In the book of Ibn Bukhtishu's *Manafi`al-Hayawan*, a painting named "Male horse looking for a mare" shows a male horse is following a mare under a tree (Fig. 5). In this painting, the artist has tried to use strong black lines, ink wash, and dotted brush- strokes in the style of Chinese landscape paintings, and has painted the trunk of the tree with strong strokes of his brush to suggest a rough trunk. The Weeping Willow is the main Chinese motif of this painting. Weeping Willow (垂柳) is a species of willow native to dry areas of Northern China, but cultivated for millennia elsewhere in Asia, being traded along the Silk Road to southwest Asia and Europe (Li, 2007). This the Īl-Khānids painting shows another imitation of deformed motifs and elements and derivation of Chinese landscape paintings indigenous elements.

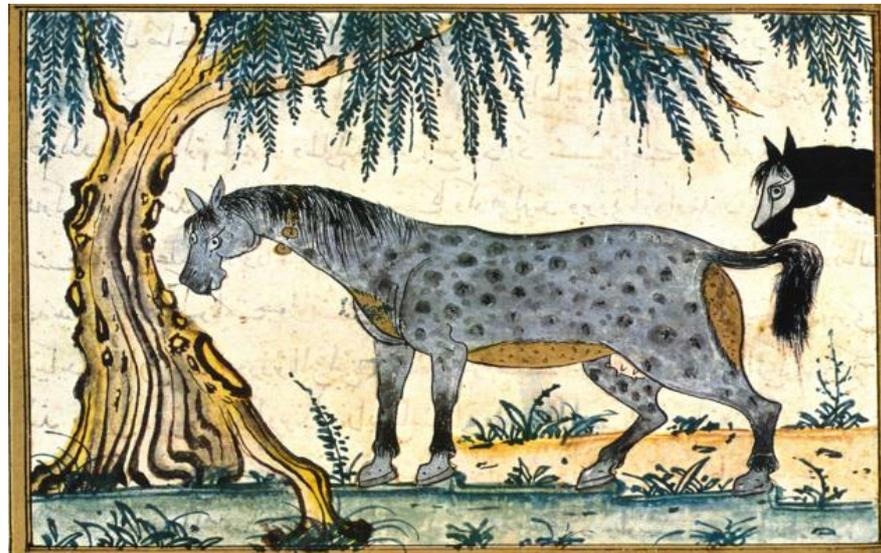


Figure 5 Ibn Bukhtishu - *Manafi' al-Hayawan*, Male horse looking for a mare, The collection of Royal Asian Society in London. Rab-i-Rashidi 1314.

Although we may understand the differences between these two paintings (Fig. 2 and 3), we cannot ignore their similarities. The lines, texture, circles, and ellipse shapes in the figures 2 and 3 are the same. This harmony among the lines implies Taoism beliefs, which emphasizes living in harmony with the natural world (Pollard, 2014). The miniature painting in Persia in general lacks naturalness and plasticity or three dimensionalities, on the one hand, because of flat application of color' as decoration, and indifference to reality on the other hand. In the painting of "*Male horse looking for a mare*", showing additive elements receding in three separate stages gives the painting a sense of atmospheric perspective (Fig. 6).

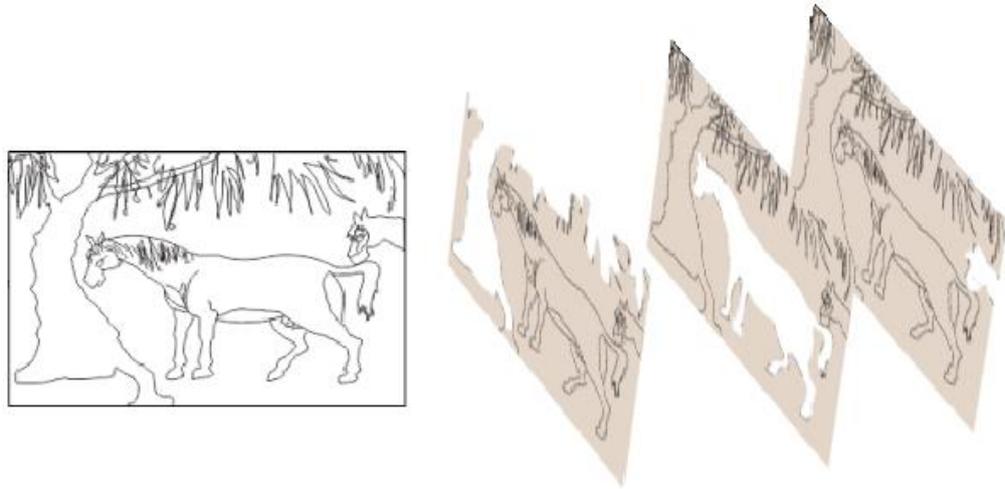


Figure 6 Diagram of tree and horses, showing additive elements receding in three separate stages, (The authors, 2021)

In another example of this group (fig. 7), here, from Rashid al-Din era, the painting named “The Death of Moses on Mount Nebo” of the book of *Jami`al-tavarikh* contains historical stories from the age of Adam until the Mongols era by order of King Ghazan- Khan. “The attention that landscape elements received in the İl-Khānid illustrated manuscripts was new in the Islamic painting tradition, and undoubtedly inspired in part by the high status of landscape painting in China. The painter of *The Death of Moses* delineates the contours of the hillock supporting the body of Moses with nested triangles of pigment” (Berlekamp, et al., 2015). The vertiginous mountains were typical in Chinese style paintings, but here in full the contour of the hillock “producing an overall pattern that is almost Persian”, in what was evidently a popular and fashionable court style (Sickman, 1956).

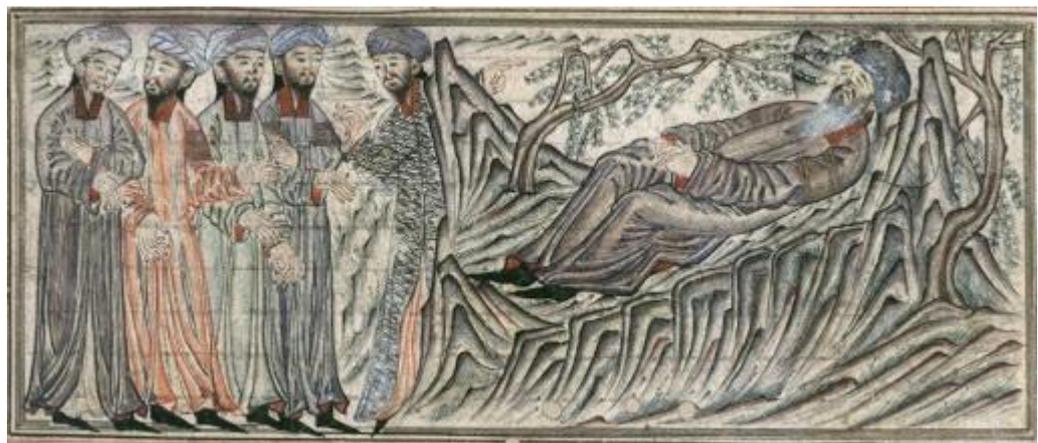


Figure 7. The death of Moses on Mount Nebo, from *The Jami`al-Tawarikh* of Rashid al-Din, The Khalili Collections, Tabriz, Iran.

In this picture, the painter used a much narrower set of pigments that are chosen to “fit” the color strategy. This palette is called “limited palettes” because there are as few as three, four, or five pigments. The Chinese painters

combined the limited color palette with the iconic visual language of traditional Chinese painting in a most intriguing way. The colors here use a "split primaries" palette. It's called that because it includes both a cool and a warm variety of each of the primary colors (Hunt, 2004) (Fig. 8).



Figure 8 The split primaries colors in “*The death of Moses on Mount Nebo*”.

These techniques are also being used in “The mountains of India” of the book of *Jami`al-tavarikh* (Fig. 9). The size and type of line style have been maintained across the blind copy process in this painting. Scholars have long recognized that Chinese illustrations were fundamental sources for the section on the history of China in Rashid al-Din’s *Compendium of Chronicles* (Blair, 2017).



Figure 9 The mountains of India, from *The Jami`al-Tawarikh* of Rashid al-Din, The Khalili Collections, Tabriz, Iran.

In the Ni Zan’s *Still Streams and Winter Pines*, the artists communicated depth and dimension by using the additive elements receding to show atmospheric perspective (Fig. 10). “These landscapes are excellent examples of how the artists communicated depth and dimension rather than using the linear perspective that was more iconic of Western art styles of that time period. One of these methods is still very common with traditional Chinese painting, which is the use of color values (lightness or darkness) and blurriness to differentiate foreground objects from background objects” (Strickland, 2011).



Figure 10 Ni Zan (1301-1374), Still Streams and Winter Pines, Source: Fu Xinian, ed., *Zhongguo meishu quanji, Huihua bian 5: Yuandai huihua* (Beijing: Wenwu chubanshe, 1989), pl. 120, p. 173. Collection of the National Palace Museum, Beijing Hanging scroll, ink on paper, 59.7 x 50.4 cm

In another way: The paintings are surveyed by a combination of deformed elements and derivation of indigenous elements. For example, some illustrated manuscripts of Demot Shahnamah¹ has been chosen. Some researchers believe that the manuscripts of Demot Shahnameh are illustrated in a fairly consistent style, which the Great Mongol Shahnameh builds on and significantly develops (Bloom, et al., 2009). In spite of the Persian specificities and the relevant framework, there are some common features of Chinese art, especially in the paintings of mountains and clouds (Binyon, 1913) remind us of Buddhist art. Here are some examples:

In the miniature of “*Iskandar kills the dragon; Third Stage*”,² it is possible to trace distinct Chinese influences, especially in the drawing of trees and the character of the landscape. The rocks rising on the left have been painted in two shades of pink-beige. Before the rocks in the bleeding dragon painted blue-gray. A twisting tree trunk bends towards the left. The trunk is gray, and its small leaves are gray-green. In this scene, completely dominated by nature,

¹ - "Demot Shahnamah" is an inscription from Mongols period. It was copied and illustrated frequently in 13th and 14th centuries, because of Mongols interesting to it. There is disagreement about the exact dating of it among researchers. Some believe its style is Rashidi but others disagree. Dating some of its paintings back in 1330, it is now in library of Chester Beiti in Dublin.

² “Isfandiyar Killing the Dragon; Third Stage” illustrates the story of Isfandiyar. His guide on his journey to Turan following a route of seven stages is his prisoner, and Gurgsar tells him that he is going to encounter a dragon on the third stage. Isfandiyar has a carriage built from which swords protrude, and he rides in it towards the dragon. The dragon tries to overthrow the carriage and the horses and is badly wounded by the swords in the process. Isfandiyar comes out of the carriage and kills the dragon, which has been weakened by the loss of blood (Hasanzadeh & Afandiyev, 2011).

the rocks, not related to the subject, rise upwards on the left (Hasanzadeh & Afandiyev, 2011). The mountains, trees, hills, and plants are depicted accurately, and the carriage is very delicately decorated with gold on dark-gray in a Chinese style (Fig. 11).

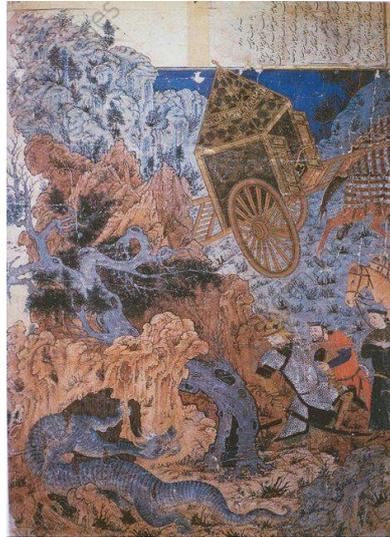


Figure 11 Firdausi, Shahname, Iskandar kills the dragon; Third Stage, Miniature, Persian, Tabriz, 1370, Fragment from a shahname, From the Fatih album (Album of the Conqueror; named after the two portraits of Sultan, Mehmed II. Fatih it contains) Gouache on paper, Hazine 2153, Istanbul, Topkapi Seraglio Library.

Although the Persian painting in the Īl-Khānid era was influenced by the Chinese style, painters didn't copy the style completely. It is not reality but rather an idealized reality that is depicted by the paintings. As time went, by elements borrowed from the Chinese style took on a greater role and peaked with the creative work of Persian artists. "In a typical Chinese painting, Chinese artists usually draw multiple mountains" (Yu, 2003). Chinese art influence is seen in fine brush strokes, and in the trees along the outer edges of the rocks and the hills.

Also, the technic of split primaries colors is used in the Miniature painting of "Iskandar kills the dragon; Third Stage" (Fig. 12).



Figure 12 The analysis of the split primaries colors, *Iskandar kills the dragon; Third Stage* (The authors, 2021).

In the miniature of “Iskandar on a wolf hunt” is another picture from Demot Shahnameh. “Nature dominates the scene and the composition without quite reducing the protagonists to insignificance. Mountains rise toward a clouded sky. The ferocious wolves and Iskandar have been gathered in a triangle pattern” (Hasanzadeh & Afandiyev, 2011). Nature is replaced by sponge-like rocks, creating an altogether different impression of landscape painting (Fig. 13). That is what this group of paintings represents; there is a kind of imitation of the tradition of the early pictorial art of China.



Figure 13 *Schahname, Iskandar on a wolf hunt / pers, Miniature, Miniature, Persian, Tabriz, 1370, Fragment from a shahname, From the Fatih album (Album of the Conqueror), Gouache on paper, Hazine 2153, Istanbul, Topkapi Seraglio Library.*

“To the Chinese all mountains are sacred, hallowed by a tradition that goes back centuries before the Buddhist and Taoists built their first temples in the hillsides. They are sacred because, since remote times, the Chinese have held that the cosmic forces, the energy, harmony and ceaseless renewal of the universe, are in some way made manifest in them. In popular belief, the mountain is the body of the cosmic being” (Binyon, 1913). Since the notion of divine regulation of the world from a mountain scene was from ancient times, also, in Asia, one finds on regard to the religious symbolism of mount, the cosmic mountain, whose complex symbolic meanings are put forth. In figure 10, in fact, the angles of rotation of the Spiral lines that make up the rocks are similar to the drawing of mountains in the paintings of the Yuan-Song dynasty. In this illustrated concept of landscape painting, Guo described how clouds and mists should look in different seasons. In Early Spring, the harmony of curved lines suggests comfort and ease. Here, circles and ellipses

shapes can represent continuous movement, and tone can be used to create a sense of depth and distance. Guo's impression of the spring seasons echoes the Daoist's reflection of his living in nature. As, "the principle of generalization in depicting nature became a guide for most ancient *Shanshui* painters, and it directed their attention from verisimilitude to conceptual expression" (Law, 2011) (Fig. 14).



Figure 14. Guo Xi, *Early Spring*, hanging scroll, ink and color on silk, ca. 1000ca. 1090. 158.3108.1cm. National Palace Museum, Taiwan, Republic of China.

In the Northern Song dynasty, some artists such as Guo Xi painted pictures of towering mountains, using the same style of brush stroke techniques with axe-cut strokes¹ in his landscape paintings. Guo Xi's *Early Spring*, done in 1072, is considered one of the great masterpieces of the Northern Song monumental landscape tradition (Fig. 14). Generally, the meaning of the ancient Chinese painters' visualization of nature points to a kind of being in nature (Law, 2011). "Different kinds of texture strokes are used to represent different kinds of mountain. In the development of texture strokes in Chinese landscape painting prior to the tenth century, the Chinese only used outlines to depict rocks and mountains, but they did not yet use texture strokes. Within the outlines, ink shading was applied. Later artists attempted to substitute ink shading for the texture strokes. Generally, texture strokes are applied using six techniques" (Way & Shih, 2006). a) Hemp-fiber stroke; b) Axe-cut stroke; c) Lotus-leaf stroke; d) Raindrop stroke; e) Mi-dot stroke; f) Boneless stroke. Figure 15 shows the main texture strokes examples in actual Chinese landscape paintings.

¹ axe-cut marks; 折带皴: brush strokes resembling squarely turned straps; 荷叶皴: brush strokes rendering.

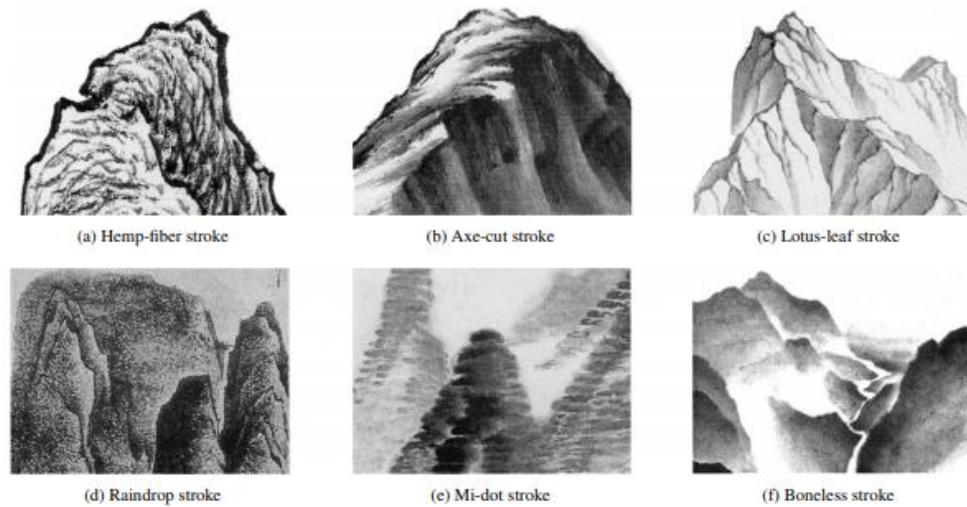


Figure 15 Six main texture strokes examples in actual Chinese landscape paintings (Isenberg et. Al, 2002).

The towering mountains in the Guo Xi paintings also include the lines to separate the border of the axe-cut strokes. The type of map used in explaining this features is 3D displacement map, which shows the lines of the edge in the axe-cut strokes (Fig. 16).



Figure 16 3D displacement map used in explaining the lines of the edge in the axe-cut strokes (The authors, 2021).

In the Figure 16, the morphological segmentation, which investigates the elements of lines pattern or lines compositions into their minimal details, shows the similar outlined figures with fine black lines and uses dark color and elaborate detail. The emphasis is upon mass or void. At the same time, the paintings include densely arranged components within the artwork or picture plane. There can be different, and contradictory interpretations of the same artwork, nevertheless, as shown in Figure 16, our image-based information retrieval approach for landscape paintings involves four steps: (1) foreground extraction, (2) sub-pattern extraction, (3) representation and matching, and (4) analysis.

Here, given the painting with wavy lines, our goal is to identify the patterns as one of the known instances. Of course, inclusion of the new examples to the dataset is straightforward, and since we follow a retrieval-based approach, it could be useful in this study. Also obviously come from Chinese painting themes, given that the brush techniques and the uses of black ink suggest that the Persian painter tried to imitate Chinese painting techniques.

The relationship between landscape's element and surrounding space in Chinese landscape paintings are compact, crowded, and densely populated in some parts, the careful interplay between positive and negative space, objects clustered to create areas of visual interest to create a sense of emptiness or isolation. The pictorial space is deep, and these artworks create the illusion of depth by layering of foreground, overlapping of objects. Freehand and continuous lines used in these paintings can express the personal energy and mood of the artist and lead the eye in certain directions. Also, the use of thin lines expresses a delicacy intellectual framework but sophisticated. In the traditional belief, the line can be used to transmit the dynamic energies in the composition of an artwork. All the round and organic lines in with tremendous force cover the surface. Energy and perception of Lines show Dynamic, Motion. So, these paintings, which were valued as finished works of art, including wavy lines that are then used to partition and decipher the entire lines of landscape paintings, which enable patterns to be cataloged and thus browsed.

For the purpose of analyzing of the use of this type of brush stroke techniques, it can be said that, the history of Chinese visual art is intimately bound up with the history of Buddhist, just as the history of Persian art is intimately bound up with the history of Islam. With the growth and spread of Buddhism, all the various influences we have noticed in the arts of many races were swept and fused into a vitalizing stream. This unique feature of drawing the hills and trees in this miniature makes the viewer have done some thinking without any delay.

The cultural attractiveness of religious ideas which are deep rooted appears to affect the pace and substance of changes which may clash with ideas and rules that stem from long traditions, as well as with legal and social concepts and

principles that reflect them. These motifs are combinations of traditional Persian and Chinese styles. The landscape elements are longer and dominate on the whole of the scene.

In Chinese painting, the artist uses lines that represent life and motion curved, oblique, wavy-to show movement of clouds, rivers and space. In other words, the artist uses lines that change, but not in narrative, illustrative or descriptive manner. The artist is seeking out the essence of elements' that are fluid in their nature but he also strives to take hold of them and represent everlasting and perpetual nature of these changings, hence predominance of oblique over horizontal and vertical lines. Persian miniatures also employ these devices to some extent but add straight lines, right angles, geometrical forms and squares that are graphic expressions of the stability of crystal or Matter. 'In harmonious proportions, Persian illumination combines graphic symbols of vital elements: circles, curving lines, together with geometric forms and straight lines of the mineral world.

CONCLUSION

In this paper we argued that the Cultural Transmission (CT), or Cultural Exchange (CX) in the arts is closely connected to the creativity of artists, has an active capacity to steer cultural developments of Chinese and Persia. While the Mongols succeeded in keeping their enormous empire under control, art was intensely influenced by the Chinese. Because the Mongol's history is tied to the history of Chinese, there was a close relationship between Mongols and Chinese cultures. As the Mongols ruled China for many years, their political and cultural connections were more developed.

In the Īl-Khānid Mongols eras, one of the favorite subjects for artists in their creations was the gifts of China to Iran's court, and the most significant point was that the many Chinese artists and painters were in Rob'- Rashidi. So, the Chinese landscape approach was used in Iranian paintings frequently. Iranian, with their open and flexible attitude, were able to achieve a lot in the field of art within a short period.

The Chinese styles in the landscape were very known in the thirteenth-fifteenth centuries. But, the Iranians used the Chinese landscape style in two ways. One way was to copy blindly Persian artists from Chinese paintings. Another way was a combination of deformed elements and derivation of indigenous features in paintings. The influence of Chinese art first appeared in the miniature paintings of the early thirteenth /seventh century, then it mixed with Persian painting style, and finally gained new forms and styles.

Thus, Persian painters used Chinese style and techniques as a means of promoting Gradual development in Miniature Paintings. As a result, the Persian landscape paintings with especial Chinese style showed the same characteristics and gained first place in the Īl-Khānid Mongols period.

In the miniatures of Ibn Bukhtishu's "Manafi`al-Hayawan" and also, in the landscape paintings of "Jame'al- Tavarikh" by khage- Rashid al- Din, the mountains, and trees depicted in Chinese style. The horse in the picture

named, "Male horse looking for a mare" painted as the Yuan style, but the forms of clothes in the picture named, "The death of Moses on Mount Nebo", are as paintings of the Byzantine school. In these art works, the details of landscapes and mountains remind Tang's painting style.

In general, specific characters of Chinese art in these paintings are introducing the new meanings of space and the living and romantic feelings of nature. For depicting the evolution of nature they used chaotic scenes to open the way of Chinese coloring favorites in landscape paintings. Sky with white clouds and complicated forms were as living creatures and the lines on the earth depicted the "depth", surfaces have sponge- like shapes and the light radiated through them, animals were painted clearly and horse was a favorite one, the trees were painted bigger and took a complicated form.

Each of these two great civilizations has contributed to the building up of Asiatic art. The paintings are in outline, with a certain amount of flat color, on a white ground. The subjects were mostly landscapes from Buddhist legend. Therefore, we note conquest and commerce as the two powerful influences in the dissemination of the arts. But a third and far more powerful influence was religion.

During the Mongols era, Chinese art started to make an impact on Persian art and Persian paintings was intensely influenced by the arts of Song and Yuan dynasties. Another interest here is that the ancient painting of Chinese in the Yuan and Song eras was accompanied by the theory of Cultural Transmission (CT), to the extent that some theoretical principles of painting such as object outline, texture, and brushes and ink can be compared to aspects of the / Īl-Khānids art. As a result of Cultural Transmission (CT), Chinese cultural elements in Mongols culture and their political relations with Far east, reflected in their arts, especially in / Īl-Khānids era, for example in iconography, painting, poetry, and other decorative arts.

Therefore, mobility of objects and artisans from one cultural zone to another led to accelerated diffusion of artistic ideas, style, form, technique, and design from China to Persia and vice versa. Although they were technically painted within the traditional framework of Persian painting, in terms of style and methods of painting, they were quite unusual.

In the / Īl-Khānids paintings, the representational nature of painting becomes more important than the medium itself. In a sense, then, we argue that these Persian landscape painting works are art in cultural transition both motifs and visually, through both Persian and Chinese interpretations. Finally, due to the lack of reliable theoretical foundation in the aforementioned method, the ultimate feedback is limited to description only.

In the blind copy process, the results of this analysis yield a list of common characteristics in copying blindly Persian artists of Chinese paintings, which can be categorized as follows:

Content including mountains and branches of trees;

Color value and water-to-ink ratios to communicate depth;

Type of brushstroke used to define form and color;

Effective use of white space and balance of objects to create an appealing composition

According to this analysis, the similarity of the two Persians and Chinese paintings is such that the cultural transmission is considered possible.

To sum up, the Cultural Transmission (CT) stands at the crossroad of important artistic developments. So, the implementation of an integrated methodology to art research and the Cultural Transmission (CT) is one such important development in this study. It should be noted that the artist is always outside himself; without external connections, an artistic identity, however idiosyncratic, is simply not possible. Both lasting cultural exchange and continuously local struggle to it occurred in the Cultural Transmission (CT). It can be said that truth is this impact is the case only for some Chinese art characteristics and not for all.

REFEERENCES

- Akbarnia, L. (2007). *Khita'i: Cultural Memory and the Creation of a Mongol Visual Idiom in Iran and Central Asia* (Doctoral dissertation, Harvard University).
- Allsen, T. T. (2001). *Culture and conquest in Mongol Eurasia*. Cambridge University Press.
- Binyon, L. (1913). *Painting in the Far East: an introduction to the history of pictorial art in Asia especially China and Japan*. Edward Arnold.
- Barnhart, R. M., Yang, X., Chongzheng, N., Cahill, J., Wu, H., & Shaojun, L. (1997). *Three thousand years of Chinese painting*. Yale University Press.
- Berlekamp, P., Lo, V., & Yidan, W. (2015). Administering Art, History, and Science in the Mongol Empire: Rashid al-Din and Bolad Chengxiang. *Pearls on a String: Artists, Patrons, and Poets at the Great Islamic Courts*, 66-68.
- Biran, M. (2016). Il-Khanate Empire. *The Encyclopedia of Empire*, 1-6.
- Blair, S. (2017). Illustrating History: Rashid al-Din and his Compendium of Chronicles. *Iranian Studies*, 50(6), 819-842.
- Bloom, J., Blair, S. S., & Blair, S. (Eds.). (2009). *Grove Encyclopedia of Islamic Art & Architecture: Three-Volume Set (Vol. 2)*. Oxford University Press on Demand.
- Broadberry, S., Guan, H., & Li, D. D. (2018). China, Europe, and the great divergence: a study in historical national accounting, 980–1850. *The Journal of Economic History*, 78(4), 955-1000.
- Brooks, K. R. (2017). Depth perception and the history of three-dimensional art: Who produced the first stereoscopic images? *I-Perception*, 8(1), 2041669516680114.
- Canby, Sh. (1381). *Persian painting*, Shayestehfar Mahnaz, trans., Institute of Islamic art studies, pub.

- Dictionary, W. (2012). Merriam-Webster Online Dictionary. 2012. Retrieved from.
- Diep, V. T. (2017). The landscape of the Void: truth and magic in Chinese landscape painting. *Journal of Visual Art Practice*, 16(1), 77-86.
- Eberhard, W. (2006). *Dictionary of Chinese symbols: Hidden symbols in Chinese life and thought*. Routledge.
- Ebrey, P. B., (1996). *The Cambridge illustrated history of China (Vol. 1)*. Cambridge: Cambridge University Press.
- Eqbal Ashtiani, A. (2000). *Mongols History*, Tehran, Amirkabir, p.200.
- Fitzgerald, C. P. (1985). *China: a short cultural history (p. 272)*. Westview Press.
- Godard, A. (1941). Review of 'The Architecture of the Islamic Period,' *A Survey of Persian Art*. *Ars Islamica*, 8, 3-12.
- Gray, B. (1977). *Persian Painting*, London and Geneva.
- Guzman, G. G. (1988). Were the Barbarians a Negative or Positive Factor in Ancient and Medieval History? *The Historian*, 50(4), 558-571.
- Hasanzadeh, J., & Afandiyev, A. (2011). Four century of glory: Azerbaijan miniature painting of XIII-XVI centuries.
- Haqiqat, A. R., (2000). *History of National Arts and Persian Artists*, Institute of authors and translators of Iran, p.253,254.
- Isenberg, T., Halper, N., & Strothotte, T. (2002). Stylizing silhouettes at interactive rates: From silhouette edges to silhouette strokes. In *Computer Graphics Forum (Vol. 21, No. 3, pp. 249-258)*. Oxford, UK: Blackwell Publishing, Inc.
- Law, S. S. M. (2011). Being in traditional Chinese landscape painting. *Journal of Intercultural Studies*, 32(4), 369-382.
- Li, J. (2007). *Flora of China*. *Harvard Papers in Botany*, 13(2), 301-302.
- McMahon, C. G. (2003). The sign system in Chinese landscape paintings. *Journal of Aesthetic Education*, 37(1), 64-76.
- Morton, W. S., (1995). *China: Its History and Culture*, MacGraw Hill. pp. 104, 105.
- Rawson, J. (Ed.). (2007). *The British Museum Book of Chinese Art*. British Museum Press.
- White, M. (2011). *Atrocities: The 100 deadliest episodes in human history*. WW Norton & Company.
- Seddigh, I. (1963). *History of Persian Culture*, Sazman Tarbiat Mo'alem va Tahgigat Tarbiati, Tehran, p.192.
- Sickman, L., & Wenley, A. G. (1956). An Early Chinese Landscape Painting. *Artibus Asiae*, 19(1), 56-58.
- Sirén, O. (1956). *Chinese painting: leading masters and principles (Vol. 7)*. Ronald Press, p. 104.
- Shu, W. (2014). *Interpretations of Chinese Paintings*. *World*, 1(2).
- Sullivan, M. (1979). *Symbols of eternity: The art of landscape painting in China*. Stanford University Press.
- Qixiang, T. (1982). *The Historical Atlas of China*, Photography Publishing House, Beijing, pp. 5-7.
- Strickland, S. A. (2011). *Chinese Painting in 3D: An Artistic Study of the Use of the Traditional Chinese Painting Aesthetic in Three-dimensional Computer Graphics (Doctoral dissertation, Texas A & M University)*.

- Sugimura, T. (1992). Chinese Influence on Persian Paintings of the Fourteenth and Fifteenth Centuries. *Senri ethnological studies*, 32, 135-146.
- Tadjvidi, A. M. (1992). Persian and Chinese Art Exchanges Along Silk Roads. *Senri ethnological studies*, 32, 127-134.
- Tsai, C. Y. J. (2015). *Imagining the Supernatural Grotesque: Paintings of Zhong Kui and Demons in the Late Southern Song (1127-1279) and Yuan (1271-1368) Dynasties* (Doctoral dissertation, Columbia University).
- Tregear, M. (1980). *Chinese art*. Oxford University Press.
- Van Gulik, R. H. (1967). *The gibbon in China: an essay in Chinese animal lore*. Brill Archive.
- Pakbaz, R. (2008). *Encyclopedia of Art*, Farhang Mo'aser, Tehran.
- Pollard, E., Rosenberg, C., & Tignor, R. (2014). *Worlds Together, Worlds Apart: A history of the world. From the beginning of humankind to the present*.
- Kadoi, Y. (2009). *Islamic Chinoiserie. The Art of Mongol Iran*, Edinburgh.
- Komaroff, L., & Carboni, S. (Eds.). (2002). *The legacy of Genghis Khan: courtly art and culture in Western Asia, 1256-1353*. Metropolitan Museum of Art.
- Way, D. L., & Shih, Z. C. (2006). Wrinkle rendering of terrain models in Chinese landscape painting. *IEICE transactions on information and systems*, 89(3), 1238-1248.
- Yu, J., Luo, G., & Peng, Q. (2003). Image-based synthesis of Chinese landscape painting. *Journal of Computer Science and Technology*, 18(1), 22-28.
- Zaki Mohammad, H. (2005). *China and Islamic arts*, Translated by Tahami, Gholam-Reza, Farhangestan Honar, p.68.