International Journal of Applied Arts Studies

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With respect to the Reference number: **28/11/5/7946** dated 29/2/1395 (18th May 2016), the 102nd commission session was held to evaluate and verify the scientific journal of Islamic Azad University. The commission announces the grant permission to establish the journal entitled "International Journal of Applied Arts Studies" and to publish the first issue in six-month time dated from 25/3/1395 (14th June 2016).

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In the Name of God

Dear Readers,

I, on behalf of the editorial board, am proud to present this first issue of the *International Journal of Applied Arts Studies (IJAPAS)* under the sponsorship of the Islamic Azad University, Yazd Branch. We were driven to found the *IJAPAS* by a noticeable lack of journals, in the Islamic Republic of Iran in particular, devoted to architecture, urban design, urban planning, architectural conservation and restoration, painting, art history, graphic, digital arts, fashion design, performing art, industrial design, aesthetics and semantics. Although the academic world is increasingly driven by cross-disciplinary visions and models, we seek multi-disciplinary views, an attempt to inform researchers, graduate students, and professionals about the trends, ideas and innovations being put forward in applied arts. To this end, in addition to standard articles, in every volume of the *IJAPAS* we hope to provide a special issue related to a respective field with innovation.

We are also sending out a call for papers related to *Applied Arts* to appear in the next issue of *IJAPAS* in February – March 2017. The deadline for submissions for this issue is February 15, 2017.

Finally, I should mention that we are committed to a speedy refereeing process for every article submitted to us. We effort to reply to all papers submitted within five weeks' time with a response about acceptance or rejection. We also do not require formatting for submissions in our style until *after* the paper has been accepted by us for publication.

I would like to thank our Editorial Board for their work so far in helping to establish the *IJAPAS*. And, finally, I would like to extend my deepest gratitude to Dr. Ali Boloor, the assistant editor of the *IJAPAS*, for all of his hard work to ensure the timely completion of the first volume.

I am delighted to invite you to visit us at www.ijapas.org.

Sincerely,

Dr. Abolfazl Davodi Roknabadi
Editor-in-Chief
International Journal of Applied Arts Studies (IJAPAS)
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Analysis of the Inscriptions as Advertising Media in Persian Architecture

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Abstract

This study seeks to analyze the inscriptions as advertising media in Persian architecture. The data collection was based on descriptive-analytic method and library studies. The study population included architectural inscriptions of Iran. The sampling method was selective and qualitative data analysis was implemented. The aim of the study is to analyze and recognize the importance of inscription as advertising media, visual capacity identification, and analysis media status inscription in Persian architecture. Based on the written component, samples were examined statistically. It was found that historical information plays an important role in the inscription that transfers information, thoughts, and ideas as advertising and signaling media. The inscription in Persian architecture in regard to the well-being of society reflects the social, religious, and cultural conditions in the inscription which plays a decisive role in the field of cultural and religious propaganda of the society.

Keywords: Advertising media; Persian architecture; Religious propaganda; Inscription

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1. Introduction

Iranian art arises from the artist's inner sense embedded in culture and religion. The artist brings his art to perfection using symbolic concepts and undoubtedly the inscriptions are of the great importance in architecture. Habibullah Fazaeli in script train wrote: "inscription is so-called the art of coarse script transferred on tiles from paper by scribe and then located on doors, walls, altar of mosques and holy places and other important buildings".

The inscription as a historical source plays an important role in revealing the identity of architecture, construction methods, management, sponsors, and so on. The inscription provides knowledge that reforms and completes our historical understanding of the economic, political, and social issues. In relation to the viewer, inscriptions contain different messages, inscribed in various forms and shapes, with different script and in different languages. Art and visual values of inscriptions have been considered, and the inscription in accordance with the welfare of society represents the social and behavioral relationships. Generally, spiritual connection with inscriptions shows cultural characteristics, beliefs and behaviors important in terms of ornamental, historical and religious aspects.

There is lack of research in this area, and hence the importance and necessity of research approach is essential. Many Iranian art forms include inscription preserved arts from different periods of Iranian art history. Despite a brilliant background and significant presence throughout the history of Iranian art, this art is not seen today and its features are not used in contemporary Iranian visual art, especially graphic. The features of this art include data retention, impressive and advertising. For example, in the Islamic period, the inscriptions advertising aspects are advertising and promoting Shia Islam or advertising a special person on building façade. In general, today's media have forgotten the inscriptions. All these cases reveal the necessity and importance of art in Persian architecture. Therefore, this study investigated the inscription in Iranian architecture, media approach and promotional aspects of this art.

The aim of the study is to analyze and recognize the importance of inscription as advertising media, visual capacity identification, and media status inscription in Persian architecture. The questions that are addressed in this study are; 1. How is the status of inscription in Persian architecture? 2. How can this art be used as an advertising medium in describing concepts and transferring information? 3. What is the importance of inscription in Persian architecture? A descriptive-analytic research method along with a library document survey for data collection has been conducted.

1.1. Research background

In the literature review, we realized that with the onset of the history and growth of human civilization, more attention has been paid to decorative issues. Subsequently, a

correlation developed between decorative art and architecture. Later, this trend was reinforced in the Islamic period where iconic image together with basic component and architecture forces not only contributed in conveying the concept but also surpassed it (Rajaei Baghsorkhi & Amozademehdijeri, 2009: 2).

Shayestehfar (2005) in her paper on the role of craft and signaling of inscriptions in Islamic architecture, investigated the Qur'an, prayer, tradition as well as the three dimensions of spiritual truth that were manifested in the inscriptions. Ghelichkhani (1994 & 2004), in an article about script and calligraphy in time referred to script history in Iran. Makinezhad, in his article entitled 'Sols inscriptions in Persian architecture, from Safavid to Qajar period', investigated the features and technical differences, geometry and significance of the inscriptions. Rashid Mohasel (2008), in his book entitled 'ancient Iran inscription', has investigated the discussion, description and rooting of the inscription words in ancient Iran. Rajaei Baghsorkhi & Basiri (2009), in a book entitled 'inscription' that consists of two sections, have investigated the effect of art from previous periods and its role on the subsequent periods.

In conjunction with the media approach inscription, we have limited resources in the country. This study research is by and large about media function for the inscriptions. To answer the research questions and to achieve this purpose, we attempt to collect data via utilizing the resources and analysing image data by a descriptive-analytic method.

1.2. Importance and the role of media

Information is a valuable resource, providing knowledge of the ability to work and to take advantage of the opportunities (Farhangi & Nasiri, 2008: 99). The term media in art has shown that media is between what the artist does and what the viewer or audience sees, it is between the idea and realization means to transfer messages (Getsi, Davalo, 2003: 251). The media ability is to provide and instill the desired message, which plays an important role in shaping and penetrating in our culture, values, attitudes, and beliefs. These are the most important and affecting tools for information transferring in communication (Molavi & Ghaedifard, 2012: 21).

The media explains and analyzes the phenomena of the world around, classifying and bestowing meaning upon them and showing their relationship with the environment, the paranormal and other members of the society (Dehshiri, 2009: 186).

Due to the increasing growth of technology in the world, the numbers of media has increased. Media is an integral part of people's lives. We live in the world today, where media, information and news, affect every moment of our lives. The message of media is advertising and transmitting certain values and beliefs continuously. The most important feature of the media is to attract the audience's attention. The media itself is a cultural expression as well as propagating other cultural forms. They are often the only means of cultural communication available. Hence, their specific cultural works are domination of

traditional culture, having an open mind to new styles and linking the national dimensions to global and human culture.

Extensive promotional activities and raising public awareness approach in various sectors of society and general audience towards economic, industrial, cultural, political productions, production centers and organizations (Seyedmohseni, 2003: 65). Islamic architecture consists of creativity of artists in the history of Muslims and the openness of Islamic architecture. It constructs a great environment with spiritual purity using harmony and order of patterns, inscriptions and colors.

2. Data Analysis

In this study, the population is the inscriptions of Iranian architecture. According to research facilities and lack of access to census data, a limited number of inscriptions based on factors such as context, location of the inscription and script type were selected as relevant to the study and were analyzed using analytic approaches. The inscriptions can be classified from different perspectives. Initially, in this study, they are classified into three categories based on the type of script. Transposition is based on the alphabet letters of the name of the cities, and classified the scripts as follows:

1- Kufi script   2- Sols script 3- Nastaliq script

2.1. Statistical samples with Kufic (Maqely)

An application of Kufic script reflected on the buildings, also called building script which appears in various forms, classified it as easy, medium and difficult. The base of this script is lineation on plaid pages, in a manner that first plaid page is lining and tiled and then the letters are organized. This was written based on the above order, easily picked up on building with bricks in order to read the phrase as well as the decorative materials. For this reason, it is called the architecture or building script.

2.1.1. Amol - Mir Ghavamodin Maraashi monument

The inscriptions on Safavid buildings, the use of mosaic tiles and seven colors in decoration were increased. The religious buildings in this period, such as the dome, arcades, over the entrance and minarets were adorned with tiles. Calligraphy of the tiles became common in the ornamentation of religious monuments and numerous buildings were decorated using Sols, Naskh, and Kofi script. Calligraphy in Islam attracts more attention than any other art, yet it has not been effective in raising any virtuoso among Muslims. This art has the important place among other arts which provides an appropriate substrate for the direct expression of mysticism and spirituality taken from the inscriptions.

Mashhad Mir bozorg Amol is an important ancient building in Mazandaran province. This monument, in terms of architectural features, decorative tiling, interior and exterior,

especially in the entrance, has a historical significance. Another example is Mir Ghavamodin Marashi dome which was destroyed several times, and the present building of the monument and its surrounding large collections were held during the reign of Shah Abbas.

| (a) | (b) |

Fig 1 (a) Mir Ghavamodin Maraashi monument (Source: parsiblog.com)
(b) Redrawn script of Mir Ghavamodin Maraashi monument

Mir Ghavamodin Marashi dome is built with brick and tile. The large entrance of the building in the middle, with two smaller entrances located on both sides of its margins, is covered with color enamel tiles with Kufic script. On the entrance inscriptions with Kufic script, phrases are written on orange background tiles with black lines: *"Sobhan Allah Va Alhamdollelah Va La Eleha Ella llah va Allaho Akbar va la houla ele ghovate ele bellah"* (Fig 1).

As can be seen, this inscription, other than its decorative and cosmetic aspects, has a historical and religious significance, describing beautiful names of God and praising them. It reflects the God's strength, which are arranged and composed with other components placed in a proper position at the entrance to create a good fit. The artist could exploit the effect of colors and their expression to induce his ideas and to clear a lot of information about the art of building or specific features of that period. The scripts on the building exterior are phrases such as religious holy Qur'an, remembrance of God that is reminiscent of religious and moral duties.

2.1.2. Isfahan mosque

Isfahan mosque is one of the monuments that was gradually built and decorated over time. The names of kings, princes, ministers, emperors, artists and its founder, both women and men can be seen in different parts of the mosque. This mosque depicts the encyclopedia of Islamic art and result of thousands of years of experience of architectural and building techniques (Shayestehfar, 2009: 88).

(a)   (b)
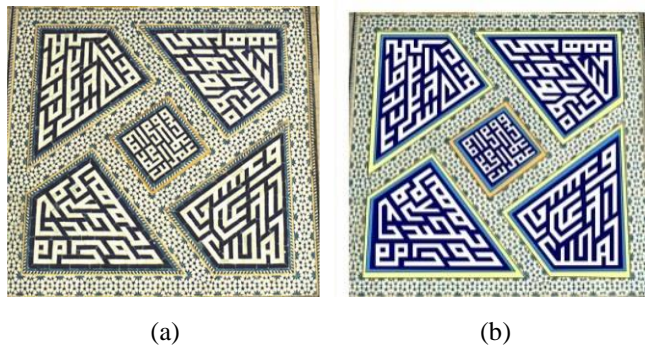
Fig 2 (a) Isfahan mosque (Source: esfahan23.persianblog.ir)
(b) Redrawn the mosque of Isfahan

Isfahan mosque faced changes in every historical period. The inscriptions of many different historical periods were left, including the western portal, and inscription with a Kufic script signed by Mohammad Amin Isfahani related to the reign of King Hussein on which two bits of poetry was written (Fig 2).

We turned to each other as a crime
Court action was taken and measured
One more than all our sin, but
Ali gave us to love

This poetry refers to two important points, one is paying attention to the Day of Judgment and deeds of men, and the second is interest in and devotion to the Ahlul-Bayt (AS) and spiritual rewards in this area given to humans. Persian poetry, in addition to its narrative features, has always been a means to express concepts and themes such as legal, spiritual, and extolling and descriptive concepts. The composition of this work was done under certain rules and accurate calculations with a connection among the elements. The structure and organization of the elements brought all the components together in this building and helped in defining the combined concept. The dominant color of this inscription is white with dark blue as background and the contrast of the two colors are attractive causing a better visible inscription.

2.1.3. Maragheh - red dome

One of the oldest tombs of Seljuk reign is the red dome of Maragheh known among the town people. During this period, tombs were of great importance as religious monuments and architectural styles (Moazeni, 2013: 3862).

(a)   (b)

Fig 3 (a) Maragheh red dome (Source: tebyan.net)
(b) Redrawn the Maragheh red dome

The four squared dome and inscription on the north side of the dome is located above the entrance. The Northern wall includes two inscriptions that are separated by small arches or broken arch being one of the Persian architectural features. Under the broken arc it is carved with a Kufic script: *"Amra bebena haze alghobato amir alalam fahkrodin emed eslam ghavam azarbayjen aboo alaziz ebn Mahmood ebnSaad yadiallah"* (Fig 3). It means this dome was built by the order of the Emir and the head of the universe and who was proud of religion and Islam and lasting stability in his hands Mahmoud Abdul Aziz bin Saad.

The dome monument was mainly designed by bricks. Kufic script which was used in red dome inscriptions is very unique, combining it with arabesque design and its decoration which is elegant and sophisticated. Such method of writing Kufic inscriptions is no longer used. The architectural array of the building has fundamental meanings. Exterior scripts are indicative of names and nicknames of its founder, and the date of construction with historical information.

2.2. Statistical samples with Sols inscript

In this inscript, words are sometimes separated, nested and riding on both inscribed, at times with low readability. The appearance of the script is similar to Mohaghagh script with the difference in this line; unlike Mohaghagh, the letter rounding is more with a smaller size.

One of the characteristics of Sols script is that the letters have multiple forms and because of level and its narrowness derived from other Islamic scripts, it is known as mother script. This script has a strong religious background with graphic works used to write verses and prayers (Makinezhad, 2009: 29). This script is mainly used for inscription of altars, domes and mosques portal associated with arabesques designs.

2.2.1. Isfahan - Imam mosque

The king mosque, also known as Imam mosque's, Abbas mosque and new mosque of Sultan, is the mosque of Naghsh Jahan Square in Isfahan built during the Safavid reign as the landmark of Islamic architecture. The building is an architecture masterpiece with tiling and carpentry of the eleventh century. This mosque was built in 1020 AD by the order of Shah Abbas I, in the twenty-fourth year of his reign. Artists and calligraphers such as Alireza Abbasi, Abdulbaghi Tabrizi, Mohammad Reza Emami, Mohammad Saleh Emami have written the inscriptions. Mohammad Reza Emami Isfahani is one of the famous calligraphers of Sol's script in the eleventh century named as Imam of calligraphers (Makinezhad, 2009: 35).

Fig 4 Imam mosque Isfahan (Source: isfahanartists.ir)

The mosque entrance inscription text is written in Sols script (Mohammad Reza Emami Hamedallah Taali fih 1040) (Fig 4). The inscription contains historical information about the writer and date of inscription. It represents the culmination of thousands of building mosques in Iran. Shaping traditions, ideals, slogans, and religious concepts all decorated the Imam mosque which is among one of the world's largest monuments.

2.2.2. Kerman - Ganjali Khan Inn

Ganjali Khan Inn has been an important trading center with architectural features. It has two courtyards on the second floor surrounded with rooms. Presence of these two courtyards on the top floor is one of the rare cases in Iranian architecture. This was built in the Safavid reign.

Fig 5 Ganjali khan Inn (Source: Makinezhad, 2009: 32)

Under the entrance arch, we can see a part of inscription written Sols by the famous Safavid period calligrapher Reza Abbasi. The last sentence of the inscription depicts the names and title of the ruler, name of Reza Abbasi and date of inscription. The text of the inscription is as follows: (inscription Alaabd Almazib Alraji-Alireza Abbasi Ghafar Alzonub-1007) (Fig 5). The background of this inscription is blue with a golden script. The composition of the letters in this scroll is complex and dynamic. Golden scripts in horizontal, vertical, cross and circular directions with delicate blue spiral mixed together and tiny white flowers and buds have been distributed among them. Three white ribbons with same thickness as golden scripts, frames the floral margin of scrolls. The inscriptions are framed with a black background margin having a chain of small white and gold flowers with blue lines. Most of these inscriptions are written in Arabic script, and they have religious, moral or educational content with defined purposes. They have been used to promote Islamic principles using the effects of beauty. Iranian architecture has used inscriptions to record history, name and profile of founder, architect and the exact date of completion of the building that we clearly see in Ganjali Khan Inn, showing the media role of inscription.

2.2.3. Mashhad - Shrine of Imam Reza (AS) dome

The shrine of Imam Reza contains the tomb of the eighth Imam of Shiites in the city of Mashhad. This complex has 26 Lanai (building indoor) and 9 floor (open space) and 6 entrances in the name of the dead. In 1009 AH Shah Abbas walked to Mashhad from the capital, Isfahan, stayed there and ordered that the dome of the shrine once again be covered with bricks of copper and gold plating. Based on the inscription on the dome, this work started in 1010 AH and finished in 1116.

Fig 6 Shrine of Imam Reza (as) dome (Source: kabutareharam.ir)

The text of this inscription has been written in Sols script by Alireza Abbasi with golden letters on a turquoise blue background. The written text was: "*In the name of God, Men Aazen tofighst allah sobhan. en nafagha alsoltan Alazam, Mola Moluk Alaarab, Alajam,saheb alnasab altaher kabavi, Alhasab albaher hgAlavi torab aghdam Khodam hazei Alatabat motahara Lahuti. ghabar naal zavar alroze almonavar ahg malakutie.moravej asar Ajdad Almasumun. Alsoltan ebn soltan mozaffar shah Abbas hoseini musavi safavid Bahador khan bel monji mashian ala ghamie men dar saltana Isfahan ela ziarat haram Alashraf, ghad tashraf bezina haze Alghoba men khalas male fi senat Alf va shahr, sat, Ashr*".

The translation is as follows: (In the name of God the merciful, the compassionate and Almighty God that gives us great success of the king of kings, Arabic and Persian, with prophetic race and generation. Zafar Shah Abbas Hossein Mousavi Safavid Bahadur Khan, who walked from the capital city of Isfahan to visit the Haram al-Sharif and an attempt to make the dome by his own wealth in 1010 and ended it in 1016 AH) (Qomi & ElahiGhomshei, 2005: 828).

The inscription, as one of the decorative and accreditation as well as notification elements, was used in the Islamic architecture courses and also contains information about the historical events of that time that is well protected and transferred to today's generation. It should be noted that in some inscriptions, such complex scripts were used that it was not easy for the public to read.

2.3. Statistical samples with Nastaliq inscript

Nastaliq is one of the script writing styles in Persian calligraphy. This script was formed in Iran and was frequently used by Iranian calligraphers. By the tenth century, most Persian books were written in this script. Due to the beauty of this script for the Iranians, it has long been considered as the bride of Islamic scripts. In the eighth century, manuscripts were formed by combining Naskh and Taaliq that were summarized into Nastaliq due to the large number of applications (Jabbari, 2008: 78).

2.3.1. Tabriz mosque - Four minarets mausoleum

This building has four minarets in the ancient context and the western part of market complex that is called four minarets mosque-mausoleum or four graves. Based on a field survey, the dome and the tomb of this complex were built in the mid-fifth century. Domes and the main tomb date back to the Qajar period, but the remains of the Seljuk period have been rebuilt. The remains of the structure and the current state of the building with square plan, including input transom, brick dome and four minarets on the corners of the building have also been built.
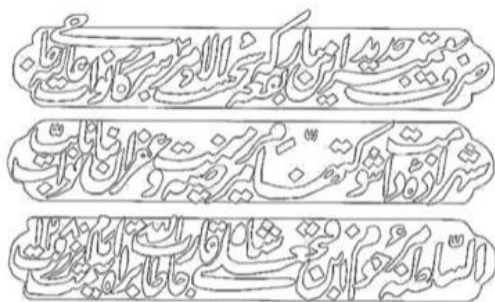
Fig 7 Redraw mosque-four minarets mausoleum (Esmaeilisangri & Elaei, 2014: 120)

The text inscription of this building is as follows: for repairing of this dome with the command of Navab Alie Haj Shahzade Damt Shokatha marhamat marzie va ghofran navab nayeb saltine marhoom ebn FathAli Shah quajar tab allah sorah was completed in 1280 (Esmaeilisangari & Elaei, 2014: 119).

The inscription text was written in 3 lines with Nastaliq script. The content is about the repair and reconstruction of the building in the Qajar era in 1280 AD by Prince FathAli Shah. According to the importance of the mosque repairing; the faithful people has always been active in building houses of God that can be named as sacred Islamic architecture. One way of understanding the insight of the Islamic architecture courses in addition to the use of motifs is paying attention to the inscription text and the role of cultural propaganda related to the restructuring of public places.

2.3.2. Tabriz Sadeqie mosques, schools

This building is located in Sadeqie market adjacent to the Yakhchal market. The mosque was built in 1068 AD by Mirza Muhammad Sadiq, son of Muhammad Mostofi. The market square is the main access to the mosque that is surrounded by two additional shops on either side and with the passing of the entrance by a lofty porch to the courtyard of the mosque-school with access to both locations (Esmaeilisangari & Elaei, 2014: 124).
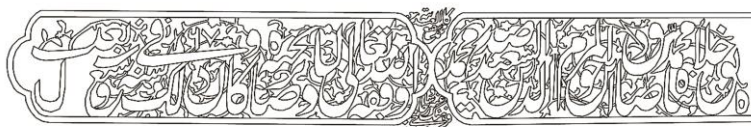
Fig 8 Redrawn inscription Sadeqie mosques, schools (Esmaeilisangari & Elaei, 2014: 125)

The rereading text of the only inscription of this mosque is as follows: (Mohammad Sadegh ebn Almarhoom Sayid Sadroddin Mohammad) (*Vaghfa Allah taala lama, kana zaleka fi sabae vastayin alf senate*). The inscription is located on the entrance of the eastern corridor of the mosque as a lintel. Only a part of inscription is original and written in

Nastaliq script. In this article, the script element is in the logically desired space, well combined and synchronized.

The text of the only remaining inscription of this mosque referres to the mosque founder –Mirza Mohammad Sadegh in 1068 AH (the Safavid era in the reign of Shah Abbas II). We can see that the aim of this inscription is promotion, advertising and the acknowledgment of all people that contributed to this work that represents the ingenuity in developing provisions of the management and culture in the society at that period of the Islamic governance (Esmaeilisangari & Elaei, 2014: 124).

2.3.3. Kashan-Agha Bozorg mosque and school

It is one of the most magnificent and opulent mosques in Iran's Qajar era. The school was built by Haj Mohammad Taqi Khanban's investment during the years 1250 to 1260 to use it for prayer and studying.

Fig 9 Agha Bozorg mosque and school Kashan (hammihan.com)

This inscription was written in Nastaliq script and due to its beauty and feasibility it was used for writing commands. The reread text of this inscription is as follows: *"Hova Albaghii –be hokma Mahkam shahanshah Adel va Bazel Mohammad Shah Qajare hkoldollah melko ve ehsan ahsa; Be Khahesh jenab shariaate adab hojataleslam mola Mohammad Mehdi Naraghi manal divani ghasabi, dabaghi Kashan be mujeb farman mobarak be tahkfif mogharar az takalif divani moaf shod"*. This means in the name of God – on the basis of the command given by the justice and merciful king Mohammad Shah Qajar, on the tannery and butchery trade in Kashan was tax exempted on the respect by Mullah Mohammad Mehdi Naraghi. He may be cursed by the God and His Messenger (Moharrum 1256).

To sum up, as previously stated, the inscriptions are divided into three categories based on the script type: Kofi, Sols, Nastaliq. They are also arranged based on the first letter of the city's name in terms of placement and sequencing. The location of inscriptions,

historical period, the text and subject are presented in the table 1, whose interpretations have been discussed in the preceding pages. Due to the limitations of the study, nine statistical samples are brought here. The statistical samples are summarized in the following table 1:

Table 1 Analysis of the statistical samples

No	Sample	City	Historical period	Material inscription	Installation location	Subject-text of the inscription	Picture Scrolls
1	Mir Ghavamodin Marashi tomb	Amol	Safavieh	Tile	Building entrance	Remember God	
2	Central mosque	Esfahan	Safavieh	Tile	Western Ivan	Poetry	
3	Red dome	Maragheh	Saljoughi	Brick	Northern wall, building entrance	Founder name	
4	Imam mosque	Esfahan	Safavieh	Tile	Left side mosque entrance	Inscription	
5	Ganjali Khan Inn	Kerman	Safavieh	Tile	Below the entrance arc	Name of writer Alireza Abassi, date and king nickname	
6	Dome of the holy shine of Imam Reza	Mashhad	Safavieh	Gold	Circular dome	About kings travel and date of building construction	
7	Four-minaret mosque	Tabriz	Qajar	Rock	-	Repair	
8	School and mosque square	Tabriz	Safavieh	Rock	Corridor entrance	Founder of mosque-school	
9	Great Agha mosque school	Kashan	Qajar	Rock	Top entrance	Mohammad Shah's order discounts gift taxes	

3. Conclusion

Architecture is one of the oldest arts associated with human and religious beliefs. In the Iranian architecture, the beauty is in the balance of structure and content tailored to building and use of decorations that are interconnected to building structure. Art inscription from the early Islamic period has always been considered by artists and Muslim kings as an advertising medium for determining the religious, historical, cultural, artistic identity. In spite of the decorative and cosmetic aspects of building, it has a great importance in terms of its historical, religious and advertising aspects.

In answer to the survey questions, it can be said that the inscriptions have a significant place in Iranian architecture. The presence of the inscriptions in architecture is an important feature for every building. Inscriptions can be used to express concepts; for example, inscription can be considered as one of the most important historic resources that is used along with manuscripts, pottery, coins, etc. which play an important role in determining the identity of architectural spaces, and methods of manufacture and management of these buildings. Inscriptions provide awareness that reform and supplement our historical understanding of the economic and social issues. Inscriptions are illustrative documents that can provide useful information immediacy. They are an effective tool for data transfer and awareness raising in realization of the communication processes, which also results in the reconstruction of the culture and beliefs of the community and reinforcing them. In general, any type of media that conveys messages and information is closely related to its audience. Writing media has an old background and an important place in world such that human life is dependent on them, so advertising has a root in social life of humans. Finally inscriptions have significant importance and are illustrative documents that can provide useful information about cultural, political, social and artistic conditions in different eras.

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The Study of the Economic Conditions of Iran and the Netherlands in Sadegh Chubak's Novel "Tangsir" and Rembrandt's Paintings

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Abstract

The artistic and literary activities have always been affected by the cultural conditions of societies. The cultural condition in turn is formed by social relationships influenced by the political movements. None of the literary and artistic activates can go along their path independently. The artistic genre and school of thoughts are also sometimes named after the artistic activities of a special era, but the characteristics of a genre based on the social conditions of the society which has passed through time and geographical conditions can also be expressed in another way. Meanwhile, if we consider the goal of Realism as a fair and honest display of contemporary life, it is then required to pay attention to the artistic interpretation of social 'political' and 'economic' issues. This article follows the study of artistic and literary works under the similar economic conditions, by investigating the Rembrandt's painting and the most realistic novel of Sadegh Chubak "Tangsir" in a descriptive and comparative analysis. In addition to the different reactions of two artists toward the economic conditions of their fellow people, the result shows similarities between different countries also causing cultural similarities and closeness of their people. It also results in removing the geographical borders and finally causing intimacy between the artists' expressions in presenting the artistic factors and items in their works.

Keywords: Economy; Novel; Painting; Realism; Society

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1. Introduction

"Art and society need each other; but this mutual need does not look for mutual acceptance. At a time when artist gives excellent cross-community values in their art work, it is brought together by art and society" (Pakbaz, 2010).

Artistic and cultural currents have shaped the context of relationship of mutual societies having economic and political events. Economic and political events which influence the form of various communities' life conditions are different. These differences occur in different literary and artistic works and each of artists and scholars would express their ideas in a unique way. However, the role of art in innovative events and movements cannot be ignored in the lives of ordinary people. The interplay of literary events in different periods in a geographic area is obvious, but the issue which has been less explored can play a vital role in common cultural knowledge beyond the geographic scope of their nation and communities. This may reflect and discover semantic links or get the feeling of the artistic work of people's normal lives in different communities. Rembrandt Van Rhine, a Dutch painter, grew in Leiden civil society where he had his first artistic experience. Leiden and Amsterdam, the two important cities of Netherlands, have undergone economic and social changes. Social processes create rich, pristine and pure social subjects hunted only by the eye of genius artists, especially those who have a particular interest.

The seventeenth-century genius Dutch master image in terms of comprehensiveness and the subject excelled in the field of vision has been widely captured and studied (Gardner, 2013). Rembrandt is not realistic, yet it is need to consider the goal of universal realism movement as the honest and fair representation of the lives of ordinary people. He is among the painters who in many ways depict people's real lives. The aim of this study is to check the artistic and literary works under similar economic conditions in dissimilar communities.

In this regard, with a focus on novel Tangsir written by Sadegh Chubak, the present study explores it from different aspects, exhibiting his way to real fiction. In modern literature, folk writing has been introduced, showing one of the most prominent examples of real-life people, important political and economic events that govern their lives. Finally, the kinship of artists and literary trends as a result of a close condition governing the societies is what is found in the present study.

2. Materials and methods

This study is based on fundamental and theoretical research. Data collection is based on library documents. On the other hand, this article is a study of artistic and literary work under similar economic conditions in heterogeneous societies. There is a special emphasis on the attribute of messages implicit in the analysis of work and comparative approach of the shape and content of the work.

3. Economic conditions of the late Qajar to the Pahlavi the first

Lack of influence, policy and reliance on the splendor hollow of the second king of Qajar, Fath Ali Shah, opened Iran's gateway toward Europe and transformed Lord and vassal status in Iran. Great Britain and Russia's imperialism competition across the whole Europe in the nineteenth century accelerated this incident. The first signs of Renaissance appeared in Iran. Naser al-Din Shah Qajar gave rise to the incident by promoting European innovation, such as promoting official newspapers and high-educated Polytechnic schools with European teachers and scholarships to the European countries. Dar-al-Phonon school became a new training center equipped with European economic-political system. The European revolutions and social upheavals that followed them led to the awakening of the masses in Iran and it turned out that the nation's interest would not coincide with the interests of the king (Azhand, 1984).

Naser al-Din Shah was killed in the fiftieth year of his monarchy and Mozafar al-Din Shah came to power and due to the fact that his policy was a reliance on Russia and Great Britain, it culminated in the solitude of patriots. All these royal mistakes and every single movement that the justice system did alongside squandering the country's wealth and costly trips to Europe were critically analyzed in the national press. Through pamphlet and humorous poems, these types of literature spread among the masses of the people as songs and words.

After the weakening of the Qajar government and Reza Shah's departure from Qazvin to Tehran, a majority of people accepted Reza Khan as a solution. Liberals hoped to shorten the ruling dynasty from power. Democrats were expecting the government to announce a republic government, because it was not linked to the ruling class. Nationalists also believed that Reza Khan could create a strong government and independent foreign powers. When it was reported that Reza Khan planned to announce a republic government to comply with the Turkish government, republicans protested in Tehran. During the ministerial change, Reza Khan was instated as the defense minister and then as the prime minister. When Shah-e-Qajar did not return to the country, he was dismissed by the parliament and as a consequence the extinction of the Qajar dynasty was declared; Reza Khan was temporarily entrusted to run the country (Azhand, 1984).

After 12 years of liberal effort, the rule of the king was announced. Reza Khan overwhelmingly supported the European civilization and tried to reconstruct the country with the name of civilization. Soon the public face of the city changed. In the field of foreign policy, due to the decline of the Great Britain and establishing a growing friendship with Russia from the thirties, political and economic close links with Nazi Germany began.

This situation led to the exile of Reza Shah, and in the middle of World War II Mohammad Reza became the ruler. The allies, Great Britain and the Soviet Union, once again occupied Iran.

   This time occupation of the country was not a state of semi-colonial occupation like in the First World War. In the field of economics, it was decided to eliminate the semi-colonial state and the Anglo-Iranian oil companies were paid.

   The political and economic conditions and their impact on social, cultural and literary conditions not only included all areas in the country, but also different local conditions in different parts of the country undoubtedly affected the way and style of Iranian native authors (Azhand, 1984).

   In Iran's Pahlavi period oil industry played a significant role in the political, economic, and cultural dimensions, especially the literary fiction, in southern Iran. When William Darcy found oil in Khuzestan, this area became an important economic region. The government of Britain, America and the Soviet Union were really interested in this area of Iran. Nationalization of the oil industry and oil development in the south of the country raised this strategic importance. Under the protection of political-economic changes, the regional literature became popular among young writers, resulting in the formation of a mixed culture. A culture rooted both in the traditions and ethnic beliefs influenced the way of life by various immigrants. Gradually a school was formed in the region known as South-Fiction School perusing features like Realism (because of the living attraction of people in the south, interest in mysteries and legends in realism is impressive among authors, which reflects in the works of Monireh Ravanipor, Ahmad Mahmoud and Adnan Ghoreyfi), Naturalism (Sadegh Cubak and Ismail Fasih are in this category, with the combination of realism and naturalism in their works), Policy-oriented literature (regional conflicts in the South with colonialism, labor issues and justice created a political space that attracted many authors), and Introspection in narratives (an orientation towards policy allows authors of South school to use a narrative time in their works; instead of resorting to the allegory of surface, they created a cover for political backtrack against censorship) (Noriyan et al., 2014).

   Oil major developments in the south especially in Khuzestan influenced southern writers. The following reasons caused the oil industry to enter the stories of fiction literature:

1. Employment in the oil industry: most southern families have relatives in the company; South authors also have experiences of employment in oil companies. Because this industry is labor-intensive, it is considered as one of the main centres of employment.

2. The attraction caused by the oil industry: The attractiveness of the industry was cultural event festivals for employees and their families. Programs like introducing the best paintings of the world or world-famous sculptor and showing movies in original language are some examples. In addition to this, clubs, colourful stores, and attractions such as swimming pools and gyms were the other achievements of the oil industry.

3. The gap between foreign and Iranian workers in the oil industry: there were lots of

differences between English and Iranian employees. Iranians were not given the opportunity to get important positions and the difference between the level of facilities led to the workers' protesting and criticizing the government.

4. American and European literatures' familiarity by oil industry: Our literature has a lot in common with Latin American literature. Both have been dominated by the dictatorship for years. The orientation to represent proximity of ideas and images tend to reflect political and social issues in the story, and oral literature, are the common points in our and their literature. Iranians who were working in the field of education indirectly played a great role in training the South School writers by translating many of the great works (Nouriyan et al., 2014).

Table 1 Important Iran's economic and social events

Russia and Great Britain imperialism competing in Iran	Entrance of Europe capitalist to Iran
Europe awarded scholarship	Promotion of the European innovation
Development of relations with Nazi Germany	Dar-al-Fonoun foundation
Renaissance of political newspapers	The oil nationalization

4. Sadegh Chubak

Chubak was born in 1295 in Bushehr. His childhood was associated with the Constitutional Revolution which was completely annulled in 1299. When he was five years old, he became familiar with story by "once upon a time" written by Jamal Zadeh, an Iranian story writer. This collection is the beginning of realism literary and Jamal Zadeh wrote it with the knowledge of writing short stories (Mahmoudi, 2003). In 1931, at the age of 15, Chubak published his first article in a local newspaper. In terms of literary ideas, Khanlari was not placed in the same category as Chubak. He once said about Chubak: "I know him before September 1941; after the political events of September all of us were somehow associated with the today events". Literary works which were created at that time where both politically weak and worthless. The only person who did not enter the field and in any politic assemblies, who taunts and gets away, is Chubak and this has led him to become an independent political intellectual in his works. Khanlari believes that Chubak's work is not an exaggeration. He believes that: "His hero, both man and beast, good and evil cannot be exaggerated as they are perceived with the naked eye in an impartial manner" (Mahmoudi, 2003).

In response to those who know Chubak as a naturalist writer, Khanlari insists that they are on the wrong path to declare him as a naturalism writer. He says it is ridicules to ascribe a native and an Iranian writer to European naturalism (GorginPour, 2006).

Mahmoudi asserts that Hedayat is the true turning point of Chubak's life, but Baba Sallar says: "Although Chubak puts Hedayat as his rolling model and Chubak was influenced by him, there were differences both in terms of literally and mood. He cannot call him as a mere imitator of Hedayat. His work has its own originality, and his individuality style does not fit to mimic all the aspects. This independence has been proved in his first two series" (Babasallar, 2006).

In 1936, the 21-year-old Chubak graduated from an American college and started working in the Ministry of Culture. According to Abedini, Chubak was the first writer of his generation who managed to visualize helplessness and social injustice (Abedini, 1987). He was from south, an oil company employee, and a hawk-eyed writer who captured every problem. Undoubtedly his influence by developments in the country is due to the emergence of this industry that followed in his writing like "oil" and "Pacheh Khizak". On the other hand, while he was working in an oil company, he followed some magazines which published American literature fiction. In addition, since Chubak had studied in American school and attended Harvard seminars, the possible effects of American literature on his works cannot be ignored (Nourian & Hatamipour, 2012).

Among Chubak's works 'Tangsir' is different in terms of both meaning and mode of expression with a concrete structure. Most have attempted to fit it to the atmosphere of the time of writing this novel and some consider it as mourning for the lost values of the past. Chubak says about Tangsir: "To understand better about Tangsir you should know what you are reading here as a story is the brutal and bare fact that I have seen" (Azhand, 1984).

5. Plot of Tangsir

To sum up the "Tangsir plot, in a few lines, it can be written that after Zarmohammad sees those who robbed his money not only did not pay back the money but also called him down, he decided to take revenge and escape from hometown with his wife and children (Mahmoudi, 2003).

5.1. About Tangsir

Mahmoudi said Tangsir is a different novel both in terms of construction and meaning, but not so firm that puts an important effect in the process of Persian fiction writing (Mahmoudi, 2003). But according to Baraheni, some illiterate critics, by their stigma labeling, prevented the audience from the correct understanding of it; Tangsir has been attacked by conspiracy and betrayal. However, the thought and art recognize its integration of the text and distinguish Tangsir as the most beautiful descriptive prose of Chubak's work (Baraheni, 2014). "In this story, mobility has such points that makes the story a feature film where some may easily understand it and say that Tangsir is really cinematic" (Baraheni, 2014).

5.2. Realistic features of Tangsir

Tangsir was published in 1963, at the height of political turmoils. Social realism analyzed the existing conditions more than any other method. But it was not admired by many audiences and critics. Tangsir is a story about life of a young guy from Tangestan, about which Chubak had heard from grown-ups in childhood. The most important realistic features of Tangsir written by Sadegh Chubak are as follows:
- Induction of social and ideological issues through the content of the story.
- Philosophical interpretation due to the ability to induce social issues through
  story content.
- Showing the local life and culture in the protagonist's character (GholamReza beygi,
  2005).

Chubak's unique way to protest common social ideologies in his era somehow comes off and covers features of the structural review of sociology. Although Chubak is a revolutionary writer, less objective description of him was seen with this theme, because his policy and intelligence show his humbleness and desire for isolation.
- Introducing the character of people by their tone: Conversations among the people
  in Tangsir marks their thought which becomes clear by their tone.
- Using local languages and dialects to more realistically portray Tangestani's life and
  culture.
- The antagonist character of the story being representative of a social group.
- Description and realistic imagery of people, events and places that usually serve a
  better introduction of the protagonist character and never describe something unless it is
  necessity.
- Using peripheral events and talks to introduce the main character of the story (Gholam
  Reza Beygi, 2005).

Table 2 Realist features of Tangsir

The philosophical interpretation due to the ability to induce social issues	Induction of social and ideological issues through the content of the story
Introducing the traits and originality of people from their tone	Showcasing the local life and culture in the protagonist's character
The antagonist character of stories are representative of a social group	Using local languages and dialects for more real characters
The use of fringe events and talks to introduce the main character	Descriptions and realistic imagery of people

Source: GholamReza Beygi, 2005.

After the division of Europe into two groups, i.e., Catholic and Protestant, with the victory of Protestant, art was affected so that the Dutch painters had to use their talents in some fields that were not religiously objectionable. The most important field of those who were able to survive in the Protestant community was painting portraits. Many successful businessmen were interested in leaving their portrait to their heirs, and some prominent figures, wanted their portrait to be accompanied by their office signs and trophies. In addition, many committees and governmental bodies, who had high positions in the political and economic life of the Netherlands, followed this tradition and asked painters to portrait them in a group with decorative meeting surroundings and convention halls. Hence, painters who could attract more by their style, could get more income. But this situation continued until this style was in fashion, and as soon as the interest of society changed, it witnessed nothingness and misery (Gambrych, 1999). It should be considered how a small country could accept the capacity of two contrastingly thriving cultures.

- The Flanders, who were Catholic and were affiliated to the French.
- The Dutch who were Protestants and were closer to the Germans.

In 1580, the Netherlands became independent, the peace treaty was signed in 1648, and it was declared an independent country in the world. Also, after increasing the wealth of the Netherlands and heightening of the community pride, the Dutch painting schools called for a view of the world where there was no place for angels, saints and gods, by abandoning the religious iconography. Despite its presence, the old Dutch realism did not serve religious purposes (Gardner, 2012).

Until shortly before the seventeenth century, the Netherlands, along with areas that were collectively called Graben, belonged to the Holy Roman Empire. In 1520 and 1530, the Fifth Emperor of Roman and the King of Spain had seventeen states as a united nation until Charles stepped down from the throne and his son Philip II became the king of Spain. Since then, the seventeen states of Graben belonged to Spain. The king appointed the regent for States and at the same time the seven northern states released the nobles of the areas. In 1579, the leaders signed the Statute of Confederate Formation and the eighty years' war were stopped. In these wars, thousands were left homeless and had escaped from one country to another. Graben area includes seven northern states of Groningen, Friesland, Utrecht and Gelderland in the center and the Zeeland and Holland in the west along the North Sea and each sent a representative to the Legislative Council, "The Hague". Two richest and most populous cities of Leiden and Amsterdam together with the Hague were located in Holland and the international trade was administered by this state. The court of the regents was also situated in The Hague and was inevitably influenced by the merchants of Amsterdam (L. Mi, 1995). The Dutch were wealthy merchants with a lot of enthusiasm to live a better life than other European countries. They were arrogant people and were proud of the land that they had taken out of the sea and the way of their Protestant

life. But life had another side too, and that was poverty and even conflicts and wars that their citizens sometimes narrated as moral tales for the younger ones (Copleston, 1999).

The city of Leiden, in the northern state of the Netherlands, was considered as the most eventful place in terms of economic and social events. In the early seventeenth century, most of the people of Leiden were employed by textile units. However, during the time of prosperity, thousands of rural migrants in search of job, military service soldiers, farmers, prostitutes, foreigners, and convicts escaped from law, and refugees fleeing the war in the southern part of the country saw this country as a shelter. Leiden city was full of poverty and vagrancy. City officials did a unprecedented move and familiarized these people with various industries to reform the city's bad condition, but since there was no work for everyone, to ease their conscience and relief from disorder caused by the presence of these people in communities, beggars and vagrancy were sentenced to prison (L. Mi, 1995). The study of the state of education in the Netherlands was remarkable. Children form Dutch families did not have a good reputation throughout Europe. Most of them went out of house early morning and all day were busy wandering, cursing and fighting on the streets; they addressed their parents respectfully but were not submissive. Based on the painting "school teacher" by Jan Steen, schools in this period were similar to the madhouses. After this period, studious children with ambitious parents were sent to the Latin schools where the classic art was taught, so children were among the social elite (L. Mi, 1995).

Amsterdam that was very close to Leiden played a major role in the economic prosperity of the Netherlands in the seventeenth century. Several events such as the discovery of a way to keep fish revolutionized the fishing vessels and subsequently because of the need to protect the city, the naval presence was necessary in the city. Thus, favorable conditions of the ports developed trade and commerce. Within a half-century, the capacity of Dutch ships exceeded the vessels of Britain, France, Spain and Portugal, and so the seventeenth century was named 'the Golden Age of the Netherlands' (L. Mi, 1995).

Rene Descartes, the famous French thinker and philosopher who lived during this time in Amsterdam, wrote a letter to his friend and stated the situation of trade and economic of Amsterdam: "I'm in the big city where all but myself involved in trade and financial activities" (L. Mi, 1995). The Dutch East India Company, made the whole nation a profit trader. The proliferation of wealth was widespread and caused all the manufacturing fields to bloom.

In the first half of the seventeenth century, a bourgeois class consisted of shopkeepers, surrounded by a higher well-off class and the noble class on one hand, and large numbers of poor and uneducated farmers and tradesman on the other. Each of these classes was trying to get others to respect the personal privacy of their classes. Title was also brought from France (L. Mi, 1995). It is inevitable that in all ages and among all nations, writers as well as historians and travelers, were seeing the events through another lens and were recording them in an image format. Undoubtedly, a painter and an illustrator could play a great role in identifying and understanding the political, economic, social, and

cultural events and also the art of a nation. To identify the factors mentioned in the seventeenth-century of the Dutch society, perhaps nothing is worthier to mention than the life and works of the Rembrandt Van Rhine.

Table 3 Important political, economic, social events of the Netherlands

Social events	Economic events
The influx of immigrants and refugees in the Netherlands	Textile market boom
Children's education problems	Lack of agricultural land and the need for cereals
Religious tolerance	The first economic recession
The creation of a bourgeois class	Shipping boom and the Dutch Golden Age
Tolerance -oriented	Supplying and equipping of the Navy
	The role of the Netherlands as a medium of exchange
	Formed guilds

6. Rembrandt Van Rhine

Theater lovers usually call Rembrandt's painter as Shakespeare, because of his talent and ability in showing different characteristics, getting the critical moment, visualizing the moment and easily drawing it on the canvas. The difference is that Shakespeare creates his characters by words and Rembrandt with the help of brush and color. Sometimes it seems that Rembrandt's ups and downs of life are one of the tragedies of Shakespeare. The protagonist is a young prince in one moment, in another he is an offended beggar and then you face a clown with a funny face, you see borers flushed and angry, the face of a king, a young poet, an active and energetic man, spiritually suffering, and finally, a simple and honest man; these are the memorabilia that Rembrandt has left of himself in his work (L. Mi, 1995). This is discovered in Rembrandt's personal character and his view point of life. He was curious about human nature and was fascinated by the visible life and therefore thought like a mirror (Copleston, 1999).

There is lack of evidence for Rembrandt's way of life; the only authoritative evidence and document is a three-hundred-and-fifty-word article written by Jan Orlers, a local

bookseller and historian, in 1641. An ambitious man who wished be considered as a writer and was the mayor of the small town of Leiden. Rembrandt's first painting was coincided with the arrival of people with different cultures of different communities into Leiden (because of the booming economy). As a result, in this period, Rembrandt's works were full of old rags, old hobbled women with a rod in their hands or young couples seeking alms for their child. Rembrandt depicted them without adding anything to that, this was the face of the city as it was.

But Rembrandt was taught by a prominent master to achieve greater skills and this possibility was not provided in Leiden. This necessity moved him to Amsterdam which was the most important city of the Netherlands and the most prominent Dutch painters created their masterpieces. Pieter Lastman was a master to whom Rembrandt was sent to be educated at a higher level in Amsterdam. Lastman's trip to Italy coincided with the visit of Swannenburg to this country. He was also so fascinated by Italian painters that he signed his works as Pietro, so they seemed more like Italian names. Because of his interest in Italian painting, his style was different from the Dutch painter's style. Italians were known as narrative or historiographical artists and Lastman was the precursor of this style in the Netherlands. Caravaggio influenced Lastman more than any other painters with his own technique, "Chiaroscuro". Diversity in the Netherlands' schools of painting was like its cities, but their common aspects were Caravaggio's model because by the works of Caravaggio the dark and bright style of modern realism had come to this land (Gardner, 2012). Via this method, the effect was dramatic. Rembrandt was living in Amsterdam's painters' and artists' neighborhood and as an aspiring painter found everything he was looking for around himself. Besides, in the neighborhood often lived contemporary painters with Rembrandt, and boards shops and drawing galleries, in addition to the Dutch painters' works and new works by prominent Italian and German painters, were displayed for sale or exhibition. In this era, people were willing to show a greater number of objects in the paintings that illustrated the period when people enjoyed worldliness mixed with nonchalance and negligence (L. Mi, 1995).

6.1. Rembrandt painting common issues in Netherlands

The sixteenth century Dutch painters painted thousands of towns, villages, rivers, channels, lakes, sandy fields and hills, roads during summer, spring and winter, of people in crowded rinks, boats with hoisted sails, ships, Sunday afternoons, windmills, duck hunters, harvest time and so on. In all these drawings, the land and people were shown enjoying their comfort and longing for more pleasure form the varied landscapes and places of their country (L. Mi, 1995). Rembrandt painted a few landscapes but instead created countless designs and prints of them. However, a large number of religious and mythological paintings are also included in the landscapes. His illustration of landscapes and nature was not a mere objective expression. His views also showed his evangelical spirit and love of

the Creator as manifested in nature. For him, scenic beauty is an expression of faith and reflection of God's grandeur creation and expresses his love for the land (Copleston, 1999). Yet what draws attentions at first glance is that in many works of Rembrandt well-being and prosperity are less understood than those in other painters' work.

He was a painter of history and unlike portrait painters who were forced to apply their talents in a limited area, a historian-painter must be skillful in all the techniques. These painters should be able to show skill and mastery in visualizing the faces, landscapes, sea and land, combat arms, naked body, flowers, sculptures, etc. Historian-painters must be fluent in the composition of the mythological, historical and religious resources, so that he could draw a historical event in such a way that would interpret the events of his life (L. Mi, 1995) .

He draws everything recklessly and openly on the screen. The audiences of his works found the sight familiar and tangible by using Kyaroskoro style skills or the contrast of light and dark in paintings by which he has created landscapes completely opposed to each other in a panel put together. In fact, we can say that Rembrandt rescued painting from traditional trends and gave them a popular format. Rembrandt's way was spiritually paved by the protestant reformation movement and Dutch freedom enthusiasm and was formally paved by Venetian painters, Rubens, Caravaggio and their Dutch followers. These are not the only cause for this genius painter. Rembrandt used painting as a means to explore the psychological states of humans. For Rembrandt, humanization of religion reached its perfection in a unit face or landscape (Gardner, 2012). When he died in 1669, all his possessions were not more than old clothes and small painting tools (Gambrych, 1999).

7. Matching works by Rembrandt and Sadegh Chubak, considering the influence of economic conditions

We have heard again and again in the seventeenth century painting that Rembrandt is among the painters who chose their models from among common people to express their artistic conceptions and put their subjects in terms of tangible and familiar images. From the fifteenth century and perhaps a little earlier, Anthropocentric became the common style in painting, but the point of view about "MAN" in the works of some painters is also remarkable. The root of Sadegh Chubak's way of fiction writing searched in the life of ordinary people and their influence in the creation of development movement and social and economic fundamental changes. Knowledge and beliefs of artists often have commonly shared points with knowledge and beliefs of society and finally, the formed image, despite the absence of representation of the photographic image, will directly be understandable to many contacts (Jensen, 2014). In studying the conditions affecting different communities, including economic and political conditions, it has been avoided from regulations in these two areas and non-technical points of view in creating a platform for change in other areas. It is better to say in vulgar exploration that it cannot consider a

reason without the other, and that a change in economic relations usually follows changes in political events or vice versa.

Looking at the seventeenth-century of Dutch society and contemporary Iran, a search for important political and economic events of these communities and the effectiveness of artistic events particularly in paintings by Rembrandt and the works of Sadegh Chubak provides an analysis of the effects of the views described above. Common themes popular in the Netherlands, suggest particular social conditions of society which were undoubtedly affected by economic conditions. Themes such as boats with sails hoisted, houses adorned and decorated with a variety of flowers, people with fine clothes and tour-embroidered collars, provide views of nature with various degrees of precision. Details and many curved lines, using a variety of colors in Dutch paintings in the vicinity of immigrants, badgers, prostitutes, the poor, and the elderly and against the hardships of life are common themes of Rembrandt's painting. After a period of economic prosperity and depression and finding ways to generate income, the Netherlands became a suitable place for cultural diversity and a utopia for that group of people who were extremely comfortable, searching for a secure corner to use the God's blessings. Of course, the economic boom and the Dutch Golden Age cannot be detached from the eighty-year war and the struggle for independence of the northern Spain. Basically, the kindling of the fire of war, the emergence of various industries and passing through different political periods determined the fate of societies. In these cases, the presence of migrants and refugees in an area not only changes the cities' appearance, but also transforms the behavior and conduct of its people and injects manners and opinions in the community that deeply belong to a particular group or community. This group of migrants usually have two categories that are different according to their condition, number and mastering. They are either the congregation of professionals and craftsmen, traders and politicians who enter a country seeking to change the macro-economic and political conditions, or homeless and disappointed poor people who have left their own country, hoping to find refuge facilities. However, usually in every event both groups are involved, yet how the target country deals with them is also very important. For example, the boom in fishing and exploring of the new ways in this field and the development of shipping in the Netherlands, with suitable and proper infrastructures for people, was followed by the presence of large businesses and other nations. However, their arrival in this country is still dominated by the Dutch state and boosts the Dutch economy, while the emergence of the oil industry in southern Iran brought a different fate for the people. Southern people were not considered rich before the oil industry. Perhaps inadequate income from their ancestral lands forced them to find such a position. So with this event in southern Iran and the arrival of large numbers of Americans and English who entered the country under various pretexts, subsequently people sold their agricultural land and left their local jobs, hoping for employment in oil companies. But not only did not Iran and more local people find a better future but also foreign domination grabbed the attentions and a new way was opened for colonialism. The second thing that led

to fundamental changes in the people and their customs was associated with foreigners that changed their mannerisms and tastes, and every day it was more salient in the lives of the local people. Finally, we can say that in the Dutch Golden Age and the emergence of the oil industry in southern Iran, a significant difference to the conditions of the people in the two territories of the Netherlands and Iran, more than anything else, is obvious.

The economic boom in the Netherlands resulted in the formation of various guilds and unions and changed the social classification criteria. In Iran, the boom did not include southern districts and the financial development of ports in the south only resulted in huge profits for the foreigners. Their increasing desire for money led to everyday poverty of Iranian workers and this effect of the West economy and culture was not apart from the government policy. In the modern life, art and literature gradually went out of the monopoly dominance, but because the literature deals with politics, humor spread among people's speech and writing. This gradually transformed from personal to political content and the development of spoken language and slang found a special place in newspapers. This is considered as the first sparks of stabilizing the position of folk and popular literature in this period. Although Chubak is among the South School fiction authors, he less directly refers to the emergence of the oil industry, but the people to whom and for whom he writes are the same group of people who are witnessing a dramatic change in their local community. Chubak is very calm and frank, not engaging with the policy like Rembrandt. He never expresses his protest himself, but tells to readers though his protagonist, exactly like Rembrandt who, both in structure and in content, puts his narrative in the canvas. Rembrandt's approach to politics and even the economy is even more cautious and softer. Rembrandt publicized fewer struggles with the government or religion. Considering his way of life and work, it can be deduced that he adapted himself to the prevailing conditions due to family and personal interests, though in appearance. Although benefiting from the same conditions and drawing his ideal people with the same style of the accepted makeup in most of his works, he chose a peaceful way to achieve its optimum place. In the Dutch Golden Age, common topics of painting included prosperity and comfort. Since painting had a business sense, it could easily consolidate its position; his works was empty of such elements, but he had another way to maintain the boom. During this period, Rembrandt was busy conceiving paintings of landscapes and portraits, but with little difference and that is his specific techniques, such as meaningful shadows and lighting. Note that Rembrandt's fellows' working conditions in this period were akin to Chubak's contemporary writers. But generally it can be said that, by the economic prosperity of the Netherlands, Dutch painters became more admired, whereas with the advent of the oil industry, the South School story writing was crystallized.

8. Comparing the structure and content of Rembrandt's paintings and the novel Tangsir in terms of the economic conditions

In this part of the study, while rereading the novel Tangsir, the structure and content of the story are compared with that of the Dutch painters' works, having in mind the effects of the economic conditions. Tangsir story is entirely a visual story, as if a sequence of signs created a story. Signs narrate a person to the reader or perhaps it is better to say, the viewer and this characteristic, along with other characteristics and features, links Chubak and Tangsir to the events and people of Rembrandt's paintings.

The economic study of the story Tangsir takes the reader's attention to the fact that the story is somehow related to the economic situation of the protagonist. He has endured years of hardship to bring relief for his family by little property but was caught by cunning and greedy people who represent a group in the society of Bushehr.

The first spark of the economic and social conditions in the story Tangsir emerges from the part that Chubak describes the hoisted British flag against Iranian flag from Mohammad's point of view: The sun, the color of his deep face, depicts the foreigners' domination and his dissatisfaction of the status shown by words, a remembrance of Ali Delvari, affirming his disapproval of the presence of the British. For example: God knows how much of Tangsir people were killed, did we kill a few of them? I killed fifteen; he was a wonderful man, "Raeis Ali". All this is for him not to be here, but he is. God bless him, he was a lion (Chubak, 1998).

In addition, once again Zarmohammad's courage and bravery accompanied by his war experience reminds one of the women behind the window waiting for their husbands to return from the war in Rembrandt's paintings.

Another point is that Chubak indirectly involves people in his story in factors and agents of oppression, but Rembrandt prefer another way. Without any interference, he puts the audience face to face with people in his canvas and leaves judgment and struggle to them. Another thing is descriptions of the setting and the protagonist similar to the intricacies in the background of Rembrandt's works. Where the helping character is the narrator, as The Night Watch, the picture adds to it, and where it is necessary to highlight the protagonist, the prominent character fades in the dark or semi-dark curtains (Fig 1). Chubak, as far as it is necessary, skillfully hides these complex descriptions in the hero's character; for example the rasp was small in his hand because it did not have a wooden handle and if Muhammad wanted to work with it for a long time, it would cause pain and injury (Chubak, 1998).

Fig 1 The Night Watch (Source: www.abcgallery.com)

The important point in introducing the characters is describing their economic situation and their mood that were designed to be tangible.

Example: "Haji. They robbed my money… I have to kill all four of them… Karim Haj Hamza, Agha Ali Kachal, Sheikh Abu Turab and Mohammad Gonde Rajab, the beginning and the end" (Chubak, 1998). Haj Mohammad, who saves English money in bank, does not listen to Mohammad and responds to his objections to deal with the English by saying "I do not care for that, I only take their money".

Sheikh Abu Turab is another character of the story Tangsir with old, crafty and cunning thoughts like a fox; he is an upstart bourgeois who hides behind religion, and does every trick for personal benefits. When Mohammed demands his money in a friendly circle the answer is "you gave your money, now the owner of taxpayer cannot pay. The Cement Prophet says the bankrupt is in god's security ... you can go to his roof and gather the sun instead... (Chubak, 1998). Also Rembrandt shows different people from different classes together in his most famous works. Fig 1 depicts The Night Watch and Fig 2 illustrates the Preaching of the Christ.

Fig 2 Preaching of Christ (Source: www.abcgallery.com)

In a chapter of the story when Chubak describes the scene where Muhammad is preparing his rifle, sticker and knife, the Dutch business owners in Rembrandt's work come to mind. "People in Tangsir all had guns in their homes." As signs that Dutch shopkeepers had on the entrance of their shops and homes, by which their social status was determined. A variety of guns and melee weapons are available in "The Night Watch" drawing which shows the official position of its holder, and when Chubak sends Zarmohammad to the market in order to do his evil intentions, he is dressed as in The Night Watch. Zarmohammad since the beginning of the story appears to be poor, but now is dressed as in The Night Watch. Chubak describes Mohammad and his appearance in such a good way that he is easily distinguishable from the congregation immigrants who have come to the Netherlands. Among this distinguishable population the Iranian immigrants in the harbor of the Netherlands were spending limited leisure time.

In reviewing the rest of the story of Tangsir, similarities and differences occur together in conformity with those in Rembrandt's. Rembrandt's status after partnership with Vangovart in his self-portraits is very similar to Zarmohammad, with his determination to take revenge. Both appear adorned with clear signs of euphoria. The difference is that Mohammad knows he is cheated and wants revenge, but Rembrandt did not realize the accident long after it happened. Zarmohammad, similar to Rembrandt's fellows, gave his money to them in order to improve and amend the conditions of his family. But dealing with the people complaints like the age of Rembrandt and his residence was not quick immediate, with dramatic difference that rose the people of the Netherlands and Zarmohammad was thrown to the ground.

Once again, we are going to go into The Night Watch and follow Tangsir footprints. Fig 1, describing the children of Zarmohammad, once again reminds us of the Netherlands, with a similar coverage of the parents. The clothes of Zarmohammad's children, like those of their father, are worn out and in a half-naked condition, with the difference that these children are more tame and submissive than children from the Netherlands.

Tangsir story riflemen are not as qualified as the night guards and do not have the same clothes; their weapons are the simple and available tools, not showing the signs of previous experiences with them. On the other hand, the secondary characters of the story, the people of Bushehr and Tangsirian who support Mohammad, always roam around him. They also protest in silence, like what Chubak does.

Continuing the story, we find that all the immigrants in the Tangsir story are addressed as master, but the French immigrants in the Netherlands, bring formal and high-sounding titles for the Dutch civil officials. In Paris and the Netherlands, immigrants and foreigners are secondary citizens. But foreigners in Bushehr were considered as owners, masters, and trade men. Even changing the economic situation led to a high income boom for the foreigners rather than the Boshehr's citizens. And at the end of the story and in

the final lines, once again the appearance of Naeb and his gunmen embodies the work of Rembrandt and his The Night Watch, (Fig 1).

For example, Naeb was accompanied by his gunmen. He was young, slim and tall with black mustache. A bare Moser in his hand, yellow English boots in his feet, an unveiled skin cap, with a sign of lion and the sun sinking in his hairs, on his head, with a blouse and pants (Chubak, 1998).

9. Conclusion

The evolution and development of culture and art in any land are affected by political, economic and especially social conditions. Social relations, migration, starvation and people's lifestyle change in various forms and are fundamentally affected by governing policies and the development of economic events. By comparing the seventeenth-century Netherlands' and the contemporary Iran's political and economic conditions, we recognize that a fateful war and civil uprisings and revolutions, that are great events in these countries, are obvious similarities of the two countries. The Netherlands' war led to independence. Iran, however, after the constitution goes through a lot of ups and downs. Finally, Iran reached a political stability, and general uncertainty finishes and this is the first step for common social destiny. As the Netherlands before and after the Golden Age, Iran shows a different face before and after the advent of the nationalization of its oil industry. Achievement of such a complicated series of events in these communities, in addition to economic prosperity and changing circumstances, creates different levels together with intertwining of cultures. Parallel political and economic events have had some social similarities, and in each community scholars, philosophers, scientists and artists have been expressing their experiences and viewpoints. Among those painters, the mode of expression, due to its proximity to public and scholars' understanding, since the most common and the easiest way of communicating is through language and incorporating it into words, they express their thoughts, carrying out this important mission, especially prose writers who write on behalf of people and for people. As a result, despite the geographical distance of the East and the West, time is also added, which in turn adds other dimensions. The same things happen in the economic sphere, and despite regional and local differences, create communities with lot in common. Since the advent of Culture and Art in Society, we have faced such a trend and mode of expression in the works of painters and writers. Although it bears various categories of styles and schools, it shares in instilling the concept of reality, and this is what links the various ideas and folk art from beyond the geographical borders of their territories and make processes of art and literature in different historical periods along with it.

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Design and Waterproof of Car Coatings Using Art Simulation Techniques and Flora Polyacrylamide

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Abstract

Since car is one of the issues that people deal with constantly and daily, improving the efficiency of its components, such as seat covers, not only does not reduce its value, but also provides greater comfort to passengers. Improving the design of car coatings and waterproofing of fabrics which have different advantages such as reducing accumulation of dirt on the cloth are considered in this research. The aim of the study is using flora polyacrylamide (FPAA) waterproof material with a chemical structure of weak cationic, non-ionic through the conventional padding method on polyester fabrics along with art simulation techniques. For this purpose, different concentrations of the composition of flora poly-acrylic waterproof coating was used on polyester fabric. Hydrophilic and hydrophobic properties of polyester fabrics were evaluated by water absorption tests based on a standard test method called the American Association of Textile Chemists and Colorists 79 -2003. As such, art simulation techniques were applied to car seat covers. The results of the study demonstrate that the use of appropriate amounts of waterproofing flora polyacrylamide composition could significantly prevent water absorption from polyester fabrics. Therefore, waterproofed fabrics designed by art simulation techniques can be used in auto production centers in Iran.

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1. Introduction

   From the assessment point of view, automotive industry gives undivided attention to convenience. Hence, driver condition is one of the most important issues that must be considered in the process of automotive design. Therefore, in process of creating convenience in conjunction with the car, the driver and passengers are the main parameters in automotive industry. The term "seat comfort" normally refers to the short-term effect of a seat on the human body (Eibner, Fuhrman, & Purgathofer, 2009). The most effective approach here is asking several people to sit on different seats in a short timeframe and express their feelings. This method is often used for different cars (Dadashian & Godarzi, 2015). One of the important parameters which are effective in the car seat comfort is air permeability in car seat cover. This is one of the important factors of fibers and also a crucial parameter in some technical applications, such as filters, canopies, sails and clothing. The most effective structural parameters on the air permeability encompass the size of fibers, the size of liner warp and weft and the texture (Dehnavi, 1995). This characteristic is defined as the rate of air flow in substances under the differential pressure between two levels of a fiber (Noorpanah, 1999). The supplementation that repels water, oil and solid contaminants is very important in all the stages of textile industry, including weaving, homemade and technical textiles. Water repelling or hydrophobic is performed using fluoro carbon. Waterproof solutions could be utilized as a hydrophobic layer around a knitted fiber especially cotton textiles made with synthetic fibers and also a knitted cotton cloth (Chaitanya, 2013). Among the outstanding features after completion of waterproof fabrics are high durability during washing and dry cleaning, compatibility with cationic and non-ionic products, being diluted with hot and cold water, and not damaging the darkness or natural color (Noorpanah, 1999). The most commonly used fabric for car seat covers is polyester which normally has both warp and weft. There are pores between the warp and weft of yarns of the fabric which play an important role in the application of textile industry including underwear, flammability, thermal insulation, and protective functions. The presence of pores in fabric causes air permeability (Araujo, Fanguerio, & Hong, 2003). Simulation is one of the most affordable methods. Simulation is imitating the real thing, social status or a process that usually represents a number of characteristics or key behaviors in a physical or abstract system. The design ability for powerful statistical solutions ensures that directors achieve their organization goals (Shephard, 2009). In this research, a flora polyacrylamide (FPAA) waterproof material with a chemical structure of weak cationic, non-ionic was applied to polyester fabrics in order to waterproof and design car coatings using art simulation techniques. Therefore, the study aims at improving the design of car coatings and waterproofing of fabrics which have different advantages such as reducing accumulation of dirt on the fabrics.

2. Materials and Methods

2.1. Procedure and method of preparation

In this study, eight 15 × 30 cm polyester samples, each piece 4 g weight, were used, the total weight being about 32 g. The warp yarn filaments score $\frac{150\ den}{Fy}$ was fusion- intermingle of texture and the weft yarn of Fdy common polyester score was about 150 den. Also, the warp density was about 32 Dwf /1 cm, and the weft density was 23 Dwf /1 cm.

2.2. Pre-washing

In order to eliminate waste materials and starched fabrics, the samples of polyester fabrics were prewashed under instruction presented before the finishing operations in Table 1. Then, to overcome the effects of debris, they were rinsed several times. Finally, the samples were dried at ambient temperature.

Table 1 Pre-washing of polyester fabric at accurate condition

Run	Terms of use	The quantities needed
1	Sodium carbonate 10 %	1.0 %
2	Detergent 3%	3.0 %
3	L:R	1 : 30
4	Polyester fabric	28 g
5	Temperature	60 oc
6	Time	15 min

2.3. Impregnation of polyester samples with waterproof materials

Impregnated of polyester samples were performed and completed with padding by different amounts of waterproof materials called flora polyacrylamide (FPAA). Various concentrations of FPAA waterproof agent were used as the major variable of the technical part in this research. The reason for this selection was the high adjustability of the FPAA agent with the polyester synthesized fiber, the easy availability of the commercial form, and its reasonable price. FPAA was used with the different percentages of 1.0, 5.0, 10.0, 20.0, 30.0, and 40.0 % (based on the weight of bath: O.W.B.). A concentration higher than 40.0 % (O.W.B.) causes not only undesirable feelings in the fabric handle, but also leads to limitations concerning its economic aspect. Therefore, concentrations lower than 40.0 % (O.W.B.) were considered in this study. The exposure time of the impregnated fabric was

three minutes in a solution, which was stirred with a glass stirrer. After removing the fabric from the solution, it was placed on the pad machine. The used polyester samples and materials are presented in Fig 1.

Fig 1 Dispersing FPAA bath of for impregnating of polyester fabric

2.4. Drying and curing of samples

The drying and curing process took place respectively after the impregnating treatment of polyester samples with waterproof materials. Accordingly, the samples were dried at 120 °C for five minutes and the curing was performed at 130 °C for four minutes.

3. Results and Discussions

The water drop absorption time of polyester fabrics was determined based on AATCC 79-2000. A drop of water from a specific distance was placed on the surface of fabrics in order to evaluate the hydrophobic features of the treated samples, and then the spreading time of the water drops was recorded by a stopwatch. Moreover, an oil absorption test like moisture absorption test was examined. This test was performed by the mean values of three on each sample separately and in different areas of the fabric that were presented in Fig 2 and 3. Therefore, the static water contact angle values were measured on a self-developed goniometer apparatus coupled with a high-resolution camera. The water droplets, each of which with the volume of 5 µL, were utilized in the contact angle tests; the reported values presented the average of three measurements at different locations (Shateri-Khalilabad & Yazdanshenas, 2013). The process of air permeability test was measured using a standard test method. Another consideration and evaluation was the abrasion resistance in the design of car seat covers fabrics. To conduct such a test, the fabric abrasion device was used as a Rubtester that was manufactured in Hungary. The fabric was prepared in dimensions of 30

× 20 cm and was then cut by a stencil in a circular shape. Afterwards, the fabric was inserted into the machine and the abrasion procedures were performed. To view the samples with different levels of waterproofing material, as well as control samples, a scanning electron microscopy device named SEM PHENOM Prox model was used. To achieve this, different magnifications of × 5000, × 10000, × 15000, and × 20000 were utilized.

Fig 2 Water drop test

Fig 3 Oil drop test

Table 2 Different properties of impregnated polyester fabrics with FPAA

Run	FPAA % (O.W.B)	Water absorption (s)	Static contact angle (degree)	Oil absorption (s)	Add-on (%)	Air permeability	Abrasion resistance
Control	------	21.6	$90 < \Theta < 100$	18	-----	16.250	2975
Washed	------	9.0	$80 < \Theta < 90$	14	-----	19.072	1100
1	1.0	47.1	$100 < \Theta < 110$	300	0.43	16.274	985
2	5.0	47.2	$110 < \Theta < 120$	300	2.7	17.778	2004
3	10.0	300.0	$120 < \Theta < 130$	600	2.7	20.119	1812
4	20.0	450.0	$140 < \Theta < 150$	1200	3.4	19.774	3343
5	30.0	600.0	$150 < \Theta < 160$	1200	3.4	20.348	3648
6	40.0	800.0	$150 < \Theta < 160$	1200	3.4	17.004	4731

The influence of FPAA treatment on the static water contact angle, the absorption time of water and oil control, and the washed and treated polyester fabric surfaces were reported in Table 2. The FPAA treatment significantly led to the increase of the static water contact angle, oil and water drop absorption time (Table 1). Treatments with FPAA assist the coating of some of hydrophobic components on polyester surface fabrics. Static water

contact angle and the absorption time of water and oil on treated polyester samples increase with higher concentrations of FPAA as it could be illustrated for each of the following Runs (Run: 1-6, Table 1). For the polyester samples treated at 30.0 and 40.0 % FPAA (Run: 5-6, Table 1), the static contact angle was $150 < \Theta < 160$ which demonstrated a super hydrophobic property of the fabric (Nosonovsky & Bhushan, 2009). The results of the air permeability standardized test exhibited in Table 2 demonstrate that air passing through the sample Run: 5 is at the very least. The final limit of using FPAA to improve air throughout is 30%. Therefore, sample Run: 5 with 30% of the waterproofing material was able to give the best results in this test. The results of the abrasion resistance test show that whenever the level of FPAA became higher in samples, the abrasion resistance was increased. A positive relationship was therefore found between FPAA and the abrasion resistance. In the sample Run: 6 where the highest percentage of FPAA was used, the abrasion resistance was maximized. By increasing the amounts of FPAA, air permeability test was minimized. In compliance with the ASTM D570 and ASTM D3393-91 standards, it could be concluded that the increasing weight after sample Run: 4 was constant. The percentage of the FPAA use and the content absorbed by sample Run: 4 and 5 were also constant. Consequently, the optimized sample was sample number 5.

3.1. Design tools

It could be suggested that canvas and application of fabric are one of the best basis for the simulation. Painting tools included the markers, acrylic paint, glue stick, spray, and brush.

3.2. Air simulation techniques

In this study, art simulation techniques refer to the process by which the designer starts creation, innovation, and design production, applying the science of art materials and instruments based on the type of the used fabric in research, as the final production has a complete sense of the produced fabric. It should be mentioned that the dominant element in the art simulation techniques of fabric is texture utilization which has a significant effect on the creation of the fabric sense.

The term 'collage' is taken from French which denotes the paste of colors. Collage is an imaging method in which objects or other shapes take place on the surface, called the base, to assist in the process of designing. After some initial plan, 20 projects were approved, which are presented in Fig 4.

Fig 4 Approved samples based on art simulation techniques

3.3. Texture

Some of the plans were sent to the factory after the confirmation, and the results illustrated that the tissue had the capability to be designed and could be applied to reach mass production.
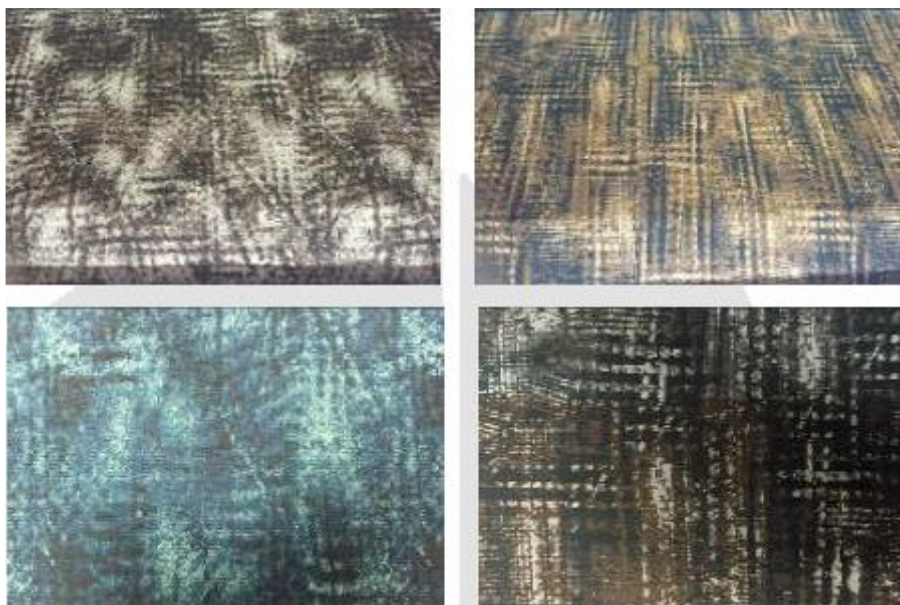
Fig 5 Texture mapping of fabrics

3.4. Scanning Electron Microscope (SEM)

In order to evaluate the uniformity and to indicate the distribution of different surfaces of water-resistant polyester fabric structure, SEM analysis was utilized. Samples with $\times$ 5000, $\times$ 10000, $\times$ 15000, and $\times$ 20000 magnifications were analyzed. As it could be seen from the changing moisture content and the focus of microscope, the particle size was changed. The SEM images of the washed polyester fabrics with different magnifications are illustrated in Fig 6.
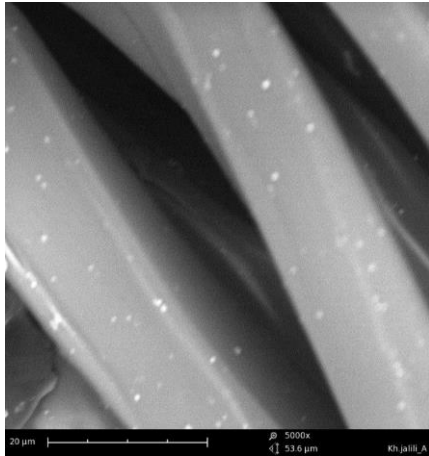
a)
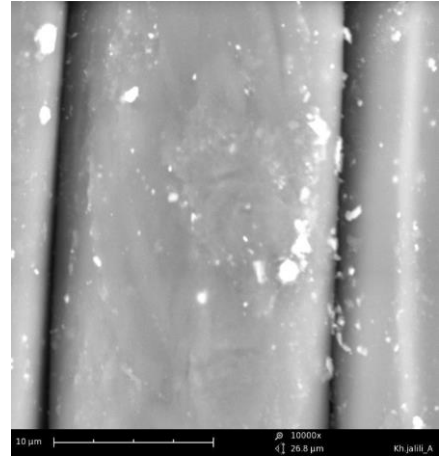
b)
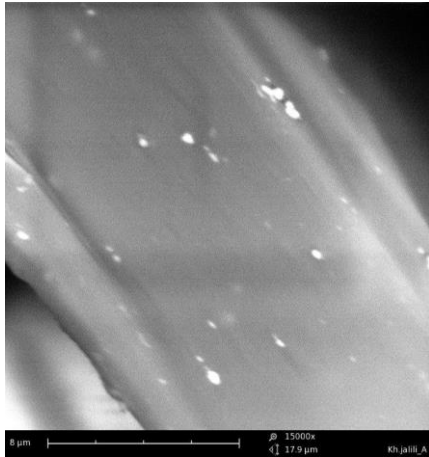
c)
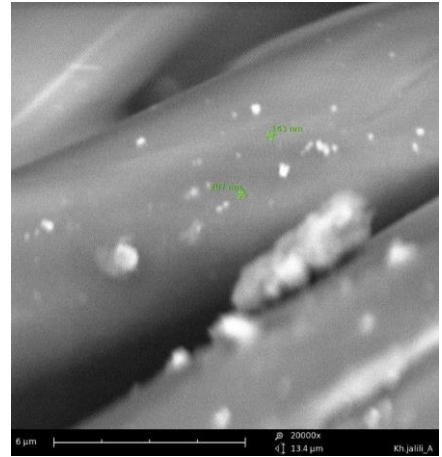
d)

Fig 6 SEM of washed sample with different magnifications

(a) × 5000, b) × 10000, c) × 15000, d) × 20000)

Besides, the SEM images of the treatment with 5% FPAA (Run: 2) are exhibited in Fig 7. No FPAA polymeric agent was used in the washed polyester fabric.

a)

b)

c)

d)
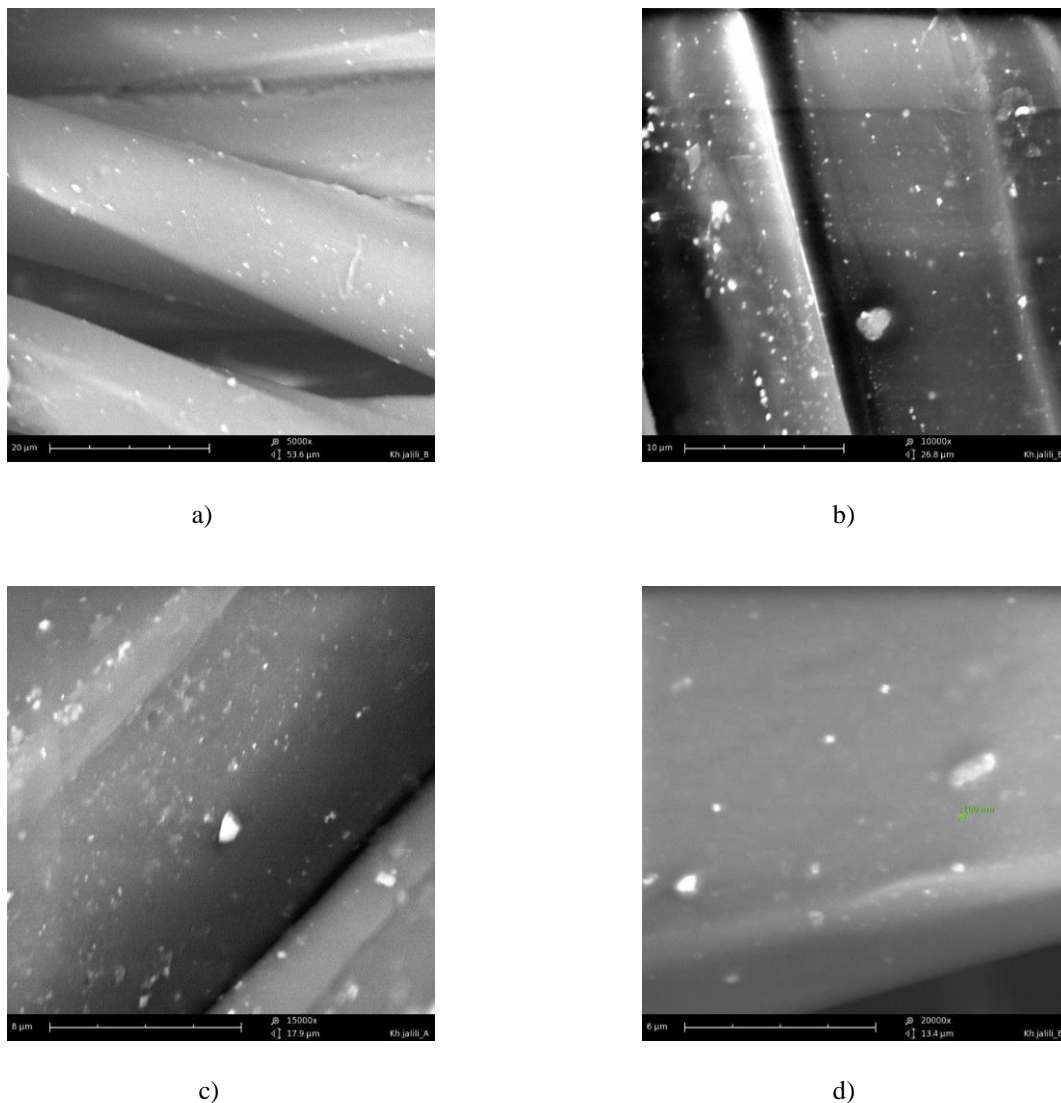
Fig 7 SEM of impregnated polyester sample with 5% FPAA (Run: 2) with different magnifications (a) × 5000, b) × 10000, c) × 15000, d) × 20000)

The SEM images of polyester fabric treated with 30.0% FPAA (Run: 5) is shown in Fig 8. The textile covering operations were carried out by 30.0% water-resistant techniques. Also, when the percentage of FPAA was increased, more particles could be seen throughout the fiber.

a)

b)

c)

d)
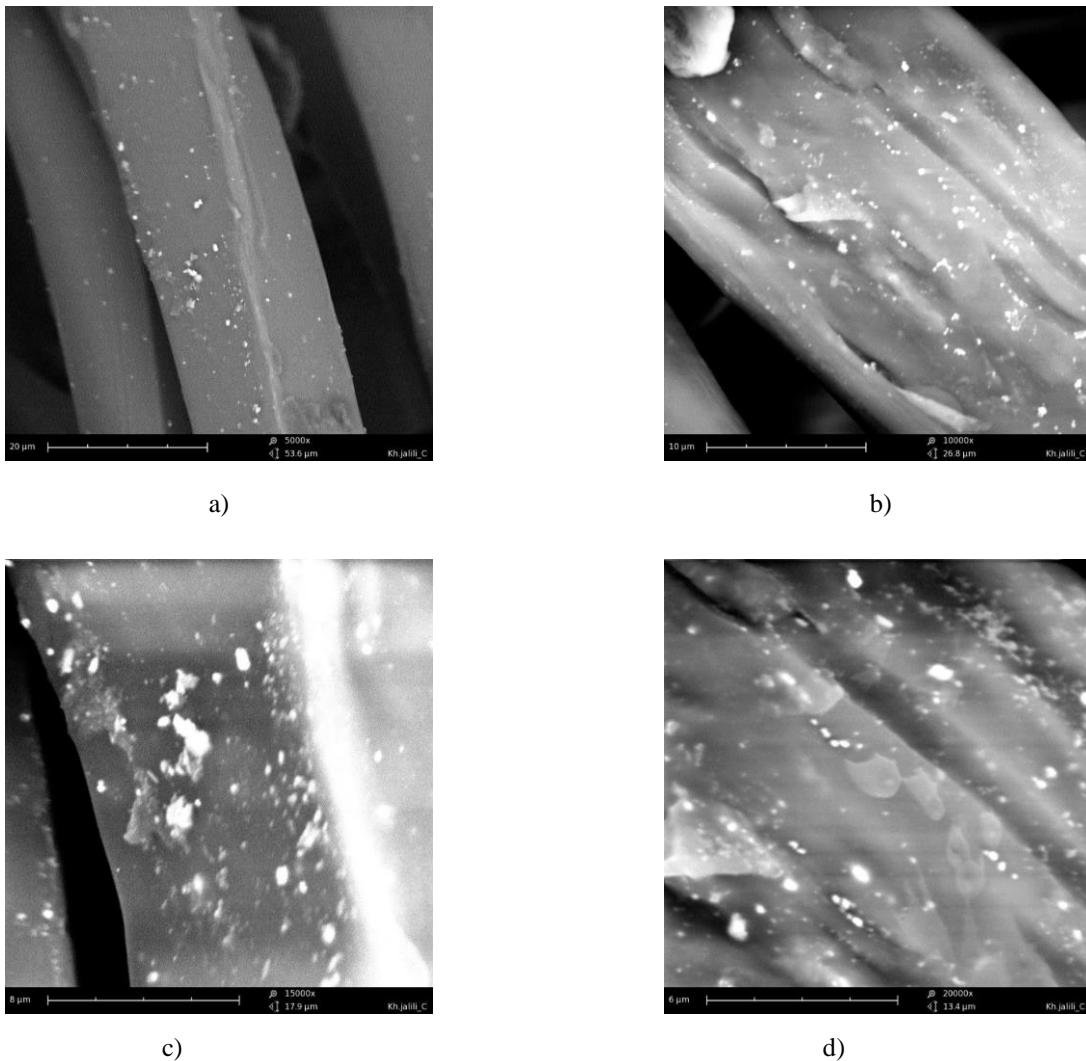
Fig 8 SEM of impregnated polyester sample with 30% FPAA (Run: 5) with different magnifications (a) ×
5000, b) × 10000, c) × 15000, d) × 20000)

4. Conclusion

Based on the previous literature on the fabrics of car seat covers, and due to the dearth of
references in Persian and the limitations concerning the lack of domestic textile factories for
cars seats, the obtained results encompass at least 20 car seat cover fabrics that were
designed. The present study hence investigated the cases in order to answer to the main
research question. The resultant design, due to its water-resistant capacity, contributes to the

increase of confidence in the term of high-risk pollutions. Due to the properties of air permeability, making use of the fabrics that have been prepared out of such samples could be very optimal in preventing passengers from high transpiration. The obtained samples could also be widely utilized because of the strength and stability of fabrics in the long-term. Distinctive design is the capability that makes the design of a car seat cover fabric particular, which could be achieved by simulation techniques. It was tried, in this study, to apply as many colors and techniques as possible in the textile design, which were appropriately based on the science of psychology of colors and forms.

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Conceptual Costume Design: Utilizing Recyclable Materials to Help Sustain the Environment

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Abstract

Dress reflects people's perceptions, yet it is sometimes vague and uncertain. What will be added or subtracted from dress will help to extend our future. Materials produced or removed from clothing will help to sustain our environment. Materials unsuitable with the environment constitute the bulk of the objects we re-use. This study integrates costume design and materials incompatible with the environment in creative ways. Art, with its various and special characteristics, can create conceptual clothing as a new form of art. This project conveys conceptual costume design using materials incompatible with the environment in order to send an environmentally sustainable message. Hopefully, with public- awareness, the recycling of incompatible materials can be used in many ways such as 'costume design'. The main focus and goal of this study is to address this issue.

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1. Introduction

Within the several past decades, developed countries have quantitatively and qualitatively promoted recycling and environmental protection as one of the main components of 'preservation and development of natural resources'. In the present era, neglecting such an approach will lead to the waste of financial resources as well as environmental damages. It is important to pay attention to recycling and the environment (Biron, 2017; Majlesi & Khoshnevisan, 2009).

A considerable part of the wasted materials is compatible with environment and therefore can be easily recycled. However, major problems are concerned with materials incompatible with the environment. In this regard, re-using a part of these materials in various industries will significantly contribute to this issue (Merrington, 2017).

One of the fields that can address this important trend is 'costume design' which can, through its special delicacies, creatively integrate these materials with art and represent the outcome as an outstanding work of art. Conceptual art can be one of the best approaches to do so, which is accompanied with various issues (Delgado & Albuquerque, 2015; Azad Aramaki & Chavoshian, 2001).

With regards to the considerable abundance of materials incompatible with the environment in our daily use, it seems that returning these materials to the consumption cycle helps the environment. Mass production of materials incompatible with the environment can be considered as a great threat to the survival of the environment that can ultimately cause serious damage to the survival of the species. It is clear that considering the importance of related issues can result in new approaches to recycle changes in consumption of wastage and material incompatible with the environment. The irreparable consequences of the continued presence of such materials in vicinity of plants and animals can easily be predicted. There are several methods to recycle these items including recycled dissociative materials submerged in buried tanks (Javadi Yeganeh & Kashfi, 2007).

One applicable method can be reusing these materials in designing conceptual dress. The current study is an attempt to re-use objects that have been discarded. The function of such an attempt is to design conceptual clothes to highlight the applicability of wasted materials. Therefore, we have tried here to raise public awareness through designing conceptual dress using the materials incompatible with the environment. As such, the main goal of this paper is to create conceptual dresses by using recyclable materials in order to help sustain the environment.

2. Conceptual Dress

Conceptual dress refers to clothes designs that intend to highlight human traits, emotions and thoughts rather than simply covering human body. In fact, conceptual clothing considers human body as a means to convey a thought or known characteristics within him,

not necessarily to cover all or part of his body (which of course is the most important goal of costume design) and this is exactly what Conceptual Art is seeking. This shows, the pre-required action showing the nature of the artwork and the artist's idea and any work or substantiality, which is only the first expression of a general conclusion that the artist has achieved (Cakiroglu & Ince, 2015; Majlesi & Khoshnevisan, 2009).

After the emergence of conceptual art in the world, various art works were gradually affected by it and the composed forms, the most important component of which was the idea. Like other divisions of art, costume design was influenced and developed by the conceptual art; in other words, the events that took place in the 1960s influenced the art styles leaving a big impact on attitudes to dressing. Before this era, clothing was a means to protect against environmental factors such as cold, heat, and insects, and also to add beauty, distinctness and even exaggeration to the individual. Nevertheless, conceptual art represents clothing with a performance beyond what is mentioned above. By reconciliation of these two concepts in contemporary age, art has spread in all domains of life such as clothing, and a clear relationship between the world of art and clothing was manifested. Many artists have used the power of provocative clothing in the creation of art works; on the other hand, designers are seeking a source of inspiration in the art world (Rijkens-Klomp, Baerten, & Rossi, 2016; Azad Aramaki & Chavoshian, 2001).

Thus, the human body as a personal domain and a sign of identity of each individual has highly been considered by artists because the body is a vehicle of the self and identity (Azad Aramaki & Chavoshian, 2001: 57). Using clothing concept as a work of visual art has its own attitude; this releases the applied attitude and emphasizes the function. Regarding the fact that dress comes from public culture and communicates well with the audience, one can introduce and establish it as a means of artistic expression; tools by which a conceptualist artist tries to express his ideology, social criticism, and cultural orientations or other issues around him, and in general, his inner concerns (Javadi Yeganeh & Kashfi, 2007: 38).

In the 1960s, conceptualist artists such as Cristo turned to innovations on the clothes so that clothes were worn as a work of art. Their clothes were key components of performance art in the 1960s and included the diversity of many new materials and unusual categories made alongside clothes and coats. Therefore, fluctuations in the 1960s in New York, Paris and London by artists such as Rudy Gemreich, Paco Rabanne and Mary Quant in the field of traditional costume design were unusual and different from what was common at that time (Majlesi & Khoshnevisan, 2009: 60).

Art clothing or wearable art is a branch of costume design which has highly been regarded in recent years. This refers to unique and often handmade clothes known as luxurious and non-transactional art. When making any part of the clothing wearable by the size of the objects to be associated with aesthetic considerations, these works are considered as a particular product (Pakbaz, 2010).

In many cultures and ancient civilizations, particular clothing meant wealth, prosperity and nobleness and also was used for religious occasions. An example of such clothing style can be seen in ancient Egyptian or Indian tribes. Use of jewelries and various coverings has been common in order to express religious beliefs, protect against unknown objects, or connect to the gods. Through ages, wearable art become a non-verbal coverage for an individual to communicate with the society, which would enable him to express a unique individuality.

Today, wearable art can be seen in different forms, media and expressions. Modern ideas in the art of costume design beyond a level emerge in various forms. These clothes are produced as a work of art and may not be practical. This type of work may be sold, but are often produced only for display purposes. Most artistic clothing items are made with fabric or synthetic materials. Various materials such as silk, velvet, leather, metal, plastic and bamboo, and different techniques such as stitching, staining, casting metal, grinding, painting textiles are among the primary facilities in the creation of this type of clothing. Like other artistic fields, the artist's talents and skills are also very important. An advanced artist has to be familiar with principles such as color theory, chemistry, sewing, and costume design computer programs (Osborne, 2012).

Artistic dress can be considered as a branch of conceptual art. The works produced by the artists are exciting performance art and conceptual works that transmit various concepts. In fact, the artist considers the human body areas to create a work of art. The important point is not considering human and his covering but the body shape to create the work of art. Artist's creativity permits him to use colored lamps and a network of electrical wires to create electric clothes. Elsewhere, a designer uses waste and discarded materials to create clothing items that may sometimes be protesting against something and may sometimes be even disgusting. Since 1987, with regards to the importance of this field of art, an annual show is held in New Zealand called Wearable Art Award where various artists from around the world exhibit their works. In this show, amateur designers exhibit their works along with famous artists, and many people come to see the different works (www.hautetrash.org).

Wearable art, according to its unique nature, is difficult to explain because often extremely personal and aesthetic criteria are generally opposed to unification. This art takes many forms like sculpted or flat that employ different techniques such as knitting, weaving, painting and sewing, and also makes use of imagination, skill and commitment to personal views.

A wearable art can be called art work but in this definition; it cannot yet demonstrate clearly its complex relationship with the world of art, fashion (fashion is not only clothes but it also includes decorations, jewelry, hair and face, as well as perfume and the like) and industry. Wearable art is separate from the main path of fashion; however, it remains relevant. Using the clothing concept as a work of visual art releases it from the applied attitude and emphasizes on the function. Regarding the fact that dress comes from public

culture and communicates well with the audience, one can introduce and establish it as a means of artistic expression. i.e., tools by which the conceptualist artist tries to express his internal and mental concerns. Here, the aesthetic aspect of clothing is completely ignored while the message embodied in it is highlighted. This style of clothing is indicative of deep understanding of the surrounding and even within individuals, leading the audience to think deeply (Zare et al., 2014).

2.1. Trashion

Trashion refers to the set of materials resulting from human and animals' activities which are usually solid and are called waste as a result of being thrown away as unwanted or being unusable. However, trash is said to be incorruptible junk (except ash). Trash in the waste usually includes paper, plastic, metal, glass, wood and materials like these (Majlesi & Khoshnevisan, 2009). According to this definition, when the ingredients and the materials composing a work of art are found to be trash, they are expected to have lost their usual efficiency (Bramston & Maycroft, 2013).

3. Method

Implementation will mostly be done in the field of junk art because trashion is often done via traditional sewing so that wearing is rather a normal characteristic of the dress. However, junk art can be manifested in all fields of surreal art form, even though it carries a special message instead of being solely functional. Therefore, by putting together the clothing concept that suggests a particular message and junk art which carries the message of protecting the Earth, we are seeking to provide a new type of coverage. This is solely done for awakening public awareness in this regard concerning a threat to nature. As we provided an explanation on the integration of costume design and wastes materials, for dress designing, the materials used in dress designing should be of maximum resistance to long term decomposition.

3.1. Anti U.V Clothing

As mentioned before, we come across with certain plastics which, in addition to the fact that their composition in the nature takes millions of years, they are also deliberately coated with a layer of anti-UV materials. Due to its stability against UV rays of the sun, this layer greatly slows down the decomposition of plastics in nature to the extent that the life of this type of plastic will be several times higher than ordinary plastics. Therefore, reminding the need to return such materials to the consumption cycle is a priority of this work. Joining all the big pieces of the dress has been carried out using a broad tape which is, in turn, considered destructive to the environment.

Fig 1 Final work clothing

3.2. Bumper Clothing

Bumper plastics are commonly used in various industries. Based on the expected application, they are expected to have maximum impact resistance. Because of this, they are composed of several layers of plastic materials with small bubbles being embedded in the outer layer. This feature prevents damage to the objects inside plastic. Moreover, the considerable thickness of the plastic makes it durable in the environment and hinders its analysis. This dress has been decorated with plastic threads which are commonly used in packaging. Although these tapes have a small volume and thickness, they can have adverse effects on a lot of living organisms as well as the environment.

Fig 2 Final work of bumper clothes

3.3. Foil-like Clothing

This dress is designed using advertising banners which could be seen in the city for a period of short time for various reasons. The base of the dress is sewn with décolletage pattern. Certain decoration has been done over the banner using plastic foil which serves as a cover for fast foods like sandwiches and burgers. Finally, table linens were used as belt.

Fig 3 Final work of foil-like dress

3.4. Trash Bag Clothing

Regarding the fact that trash bags are consumed to collect trash, while they unfortunately pose a major threat to the nature, a dress was designed using trash bags. Trash bags are incompatible with the nature and they are never decomposed in the environment.

Disposable gloves have been used in the lumbar of these clothes because despite their use in industry and services, they cannot be decomposed. With regards to the type of their usage, one can guess what a huge amount of such gloves is thrown away.

For this purpose, an old and unused dress was used as liners and trash bags were sewed on it. A piece of thick cellophane was used as the buffer for the skirt being cut with a gored pattern. For tuning up the skirts, plastic threads were sewed on the bag. And ultimately disposable gloves were used for decorating the waist.

Fig 4 Final work of trash bags clothes

3.5. Polyethylene Foam Cloth

Polyethylene foam is a derivative of polyethylene with small bubbles of air, which increase its insulating properties. This foam is commonly used for insulating various buildings and is highly resistant against chemicals and environmental agents. Since the main argument is conceptual, this dress is designed with a comprehensive approach in human life, in a way that it also surrounds a human and is even more outstanding.

Fig 5 Final work of Polyethylene foam clothing

4. Conclusion

Having analyzed the previous discussions and implementation of costume designs containing the theme of protecting the environment, we reached to the conclusion that in addition to the possibility of using the waste materials in the costume design and in the creation of conceptual and thought provoking works, this study can be regarded as a starting point for artists' thinking and innovation. Hence, once again it would be proved that art can enter different fields such as the environment and help with maintaining and developing it.

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Evaluating and Analyzing Child Friendly City for Enhancing Creativity in Children (Case Study: Yazd City)

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Abstract

Nowadays, with increasing development, cities lack favorable urban spaces. The space consistency with residents' needs has attracted experts' attention. Urban spaces have a unique role in realizing social and personal needs of children. These spaces cover a large part of everyday life of the residents, particularly children. According to humanity engineering, enhancing quality of these spaces can be effective in health and development of physical abilities, reinforcement of social interactions, and growing creativity in children. The method employed is descriptive-analytical and the data collection is based on library, documentary, and field studies. The study, extracts the data by a participatory method such as questionnaires and interviews with 384 children in Yazd city, regarding urban spaces and their activities. To investigate the correlation, SPSS software and Spearman correlation model were used. To prioritize criteria effective in creating a child-friendly city and enhance creativity, the AHP model was employed. In this study, different dimensions are available to discuss the child friendly city and creativity, five criteria affecting child friendly city, i.e. location of playing, social interactions, accessibility, participation, security and safety. The three criteria affecting creativity includes sensual, physical, and behavioral creativity identified based on previous studies and using surveys of the experts. After evaluating and administering appropriate tests, it was concluded that, among the criteria of child friendly city, the criteria of security and safety has the highest

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significance and lowest significance for location of playing. The sensual dimension of the criteria of creativity has the highest and physical dimension has the lowest significance.

1. Introduction

Cities and urban environments, in addition to adults, influence young audiences. Their perception of environment is totally different from that of other age groups. This perception produces images of the environment in children's minds which are fundamentally different from those created in adults' minds. However, a lot of spaces created for children pay little attention to children's existing dimensions and are not consistent with their perceptions, activities, and needs (Halseth & Doddridge, 2000). In fact, these spaces are shaped with regard to adults'- and not children's- characteristics and perceptions. Consequently, they not only cannot help children's development in different dimensions, but also, in a lot of cases, they cause engendering boredom in children and provide grounds for occurrence of abnormal behaviors resulting in fading of pure creativity in children (Torabi, 2011: 3).

By investigating scholars' ideas about developing creativity in children, it can be inferred that some consider creativity as a social phenomenon originating from the needs and requirements of the society and family conditions. Some consider it as a personal phenomenon on which factors such as motivation, emotion and feelings, and personal learning are effective (Amabile et al., 1994). Another group of scholars know creativity as a cognitive concept which interacts with high processes of theoretical mind, intelligence, imagination, and information processing. Finally, the other group is considered as a multidimensional concept on which a set of social and cognitive factors are effective. Accordingly, creativity is influenced by environmental effects (Gharebiglou, 2012: 87).

Nowadays, children's rights have been highlighted in the society and child friendly cities are favorable grounds for reaching this important issue and children's development at all ages. Child friendly city, according to the Convention on the Rights of the Child and Universal Declaration of Human Rights (1989) try to realize rights such as the right to comment on the desired city, participation in decision-making about the city, the right to participate in society and social life, access to basic services (such as health, education, shelter, drinking water and other related services), protection against violence and exploitation, meetings with friends and playing, possibility of safe traffic in streets, the right to live in a clean environment, having favorable green and accessible spaces and to recognize children as citizens (Riggio, 2002).

In Iran, modern and machine life is moving along its initial stages; there is increasing tendency to migrate to big industrial cities. The increase in the population and needs of residential places has resulted in devastating housing and converting them into buildings

with high stature. In such conditions, urban open spaces are considered more important because children and adolescents as largest social groups (in Iran, under-18-year-old population makes a large part of the city's population) require open urban spaces. However, children's interactions with urban spaces in the third-world cities in Iran seem to be considered insignificant and our dangerous cities do not know how to accept children. These cities prefer to keep them in protected places up until children come to the age of encountering urban environments. While investigating the needs and problems that children face in urban environments, together with planning and designing urban spaces in a way motivate them to participate in cities, it can result in enhancing the quality of these spaces for all people (Gharabiglou, 2010: 14).

Yazd City is one of the outstanding historical cities in the desert of Iran, which enjoys particular cultural and tourist attractions. In addition, it is considered as the first adobe city in the world. Because of its unfavorable climate, this city does not enjoy urban green spaces and recreational land uses. Considering the General Population and Housing Census in Iran (2011) and the 31% population of children in the City of Yazd, planning and designing the urban spaces of the city provide appropriate grounds for the presence of children in social interactions. This is also in line with the authorities of the city as they insist on converting Yazd into a social and citizen-centered city. This issue causes Yazd to be converted into a child friendly city (with regard to their psychological and physical needs and qualitative enhancement of their development and creativity in public spaces outside home and school). Accordingly, the present study aimed to identify factors affecting children's creativity in urban spaces of Yazd City and to investigate the hypothesis that: "It seems that according to existing ideas about child friendly city, there is a correlation between child friendly urban spaces and development and growth of creativity in children with regard to the status quo of Yazd City and accordingly, basic strategies can be achieved". In this regard, by using data distribution of land uses related to child friendly city, the mentioned hypothesis will be verified.

Halseth and Doddridge (2000) in a research entitled "Children's Cognitive Mapping: A Potential Tool for Neighborhood Planning" tried to answer this assumption that how planners and designers can learn more from children about their use of, and needs in, such neighborhood spaces. They evaluated the application of cognitive mapping with children against Lynch's well-known typology of urban design elements. As a result, it shows how cognitive map techniques may provide a way to collect information on what is of interest and importance to this often overlooked user "constituency".

Wridt (2010) in a research titled "A Qualitative GIS Approach to Mapping Urban Neighborhoods with Children to Promote Physical Activity and Child-Friendly Community Planning" mentioned that obesity epidemic in children has increased and they consider the role of neighborhoods in supporting children's physical activity and healthy development. In this research, participatory and qualitative GIS approach is conducted with ten and eleven year-olds grown up in a diverse low-income communities in Denver. Results illustrate the

utility of qualitative spatial analysis to understand the relationship between children's perception, the built environment, and social factors that shape children's active transport, leisure, and recreation in their neighborhood. Children's local knowledge should be valued and solicited in community-level health and planning interventions to promote physical activity.

Holt et al., (2009) in a research entitled "Neighborhood physical activity opportunities for inner-city children and youth" investigated physical activities of children and youth in neighborhoods and urban opportunities and barriers. They considered factors such as features of neighborhoods, families' interventions and programs supervised by adults as effective on children's activities. Finally, lack of security and safety as well as environmental factors were considered as threats and organized programs were suggested for children's activities.

Aarts et al., (2011) in their study entitled "multi-sector policy action to create activity-friendly environments for children: a multiple-case study" investigated the existing vision in this type of policy in four urban regions in Netherlands and concluded that structural cooperation among different parts of politics and the governments can result in facilitation and increase in child friendly environments. They considered lack of time and resources as the main challenge in this type of policy.

Esmaeilzadeh Kavaki et al., (2014) in their research entitled "Evaluation of child-friendly city in terms of Islamic architecture and urbanism in the new era" evaluated the characteristics of child friendly indices and their compatibility from the viewpoint of Islamic architecture and urban development. They suggested some recommendations about the conversion of the existing urban spaces into Islamic cities. They also discussed how children can participate in the process of urban decision making and management.

Matini et al., (2014) in a study entitled "Criteria for designing neighborhoods based on child friendly city: case study of Farhang Neighborhood of Mashhad" investigated spatial-physical aspects and finally presented criteria such as readability, accessibility and permeability, identity, presence and participation for designing child friendly neighborhoods.

Rabi'pour and Taghaddosi (2014) in their study entitled "Analyzing child friendly city using the SWOT model: case study of Zone 13 of Tehran" evaluated characteristics and indices of child friendly city and presented competitive strategies. Manochehri and Alizadeh (2014) in a study entitled "Child friendly city, a step towards future sustainable city: case study of Mashhad City" investigated urban per capita allocated to children in projects of urban development in Mashhad. They concluded that the amount of per capita allocated to child-specific spaces in urban development projects of Mashhad cannot realize children's needs regarding their population and are less than standard per capita. Therefore, paying attention to children's needs in development projects of Mashhad and moving towards the formation of child friendly city can provide better life not only for children, but for all citizens in order for sustainable development to be realized in Iranian-Islamic cities.

2. Identification of the region

Yazd City is one of the historical cities in Iran located in front of the Central Plateau of Iran adjacent to the central desert. The residential history of this city dates back to millenniums before the advent of Islam. Yazd City is the center of Yazd Township and capital of Yazd Province which is located on the Isfahan-Kerman road. This city is located between 54 degrees and 18 minutes to 54 degrees and 24 minutes east longitude and 31 degrees and 40 minutes to 31 degrees 56 minutes north latitude. Its area is about 91km (fig 1) (Moayedfar et al., 2014: 3). The population of this city is 432194 according to the Population and Housing Census of 2006.
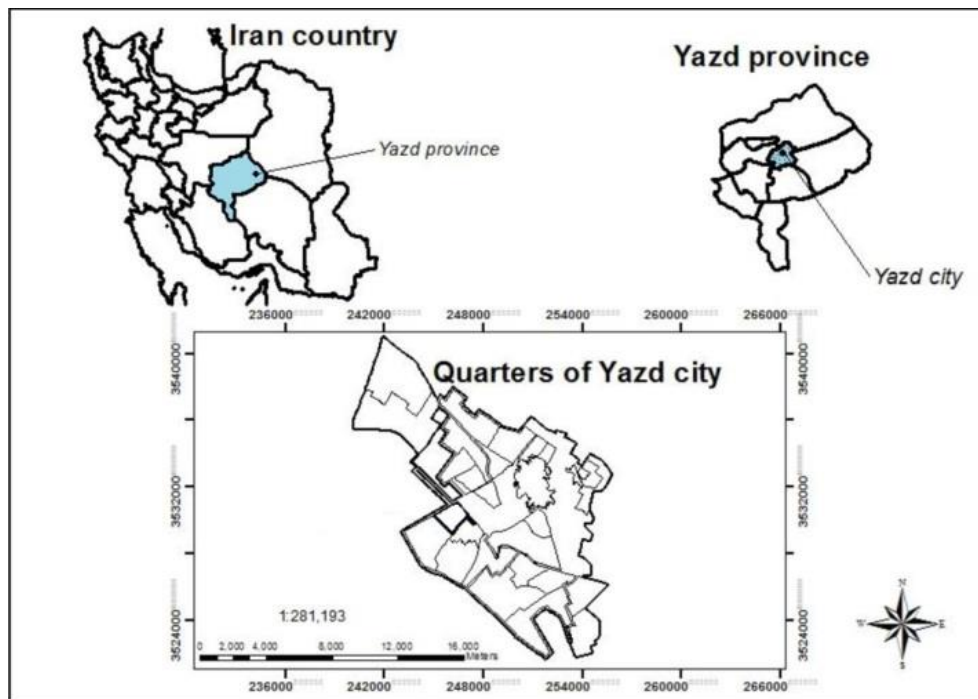
Fig 1 Political and administrative division of Yazd City (resource: Moayedfar et al., 2014: 86)

As the ease of access to activities and services is considered as one of the indices of child friendly indices, in this section, significant land uses in a child friendly city such as green spaces, educational, health, sports-recreational, and cultural land uses in Yazd City are considered (fig 3). By considering appropriate per capita according to Table 1, shortages and extras of the considered land use are investigated for the predicted population in 2016, which will be approximately 551085 individuals.

Table 1 Estimation of the amount of required area and lack of land use areas attracting children in Yazd City

Land uses		Suggested per capita	Area (hectare)	Required area (hectare)	Shortage of area
Educational	Kindergartens	0.35	3.87	19.29	-15.41
	Primary schools	0.9	39.4	49.6	-10.12
	Secondary schools	0.82	34.48	45.19	-10.70
	High schools	0.64	38.64	35.27	3.37
	Academies	0.66	34.26	36.37	-2.11
	Total	**3.37**	**150.65**	**185.72**	**-34.97**
Cultural land uses		1.2	20.2	66.13	-45.93
Therapeutic land uses		0.95	46.03	52.35	-6.32
Health land uses		0.35	2.48	19.29	-16.80
Green spaces		8	156.76	440.86	-284.10
Sports land uses		2	64.01	110.21	-46.20

Resource: Basic information: Armanshahr Counseling Engineers, 2009: 89
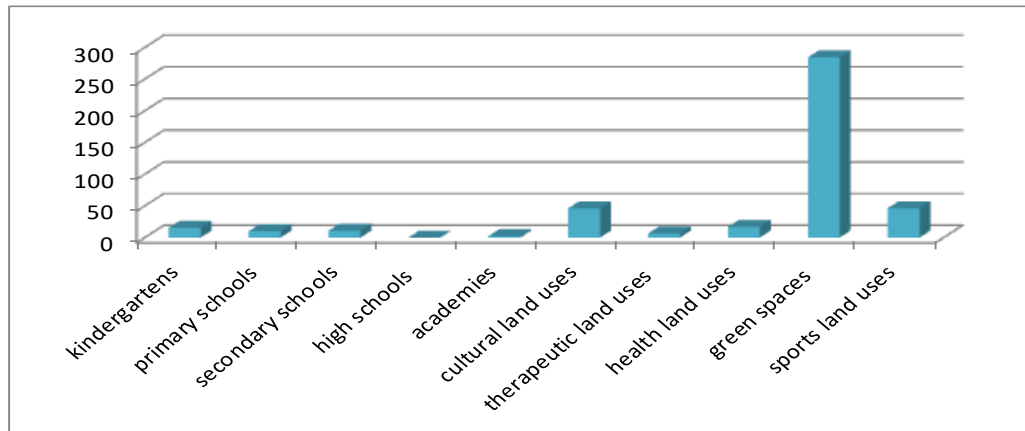
Fig 2 Lack of areas for land uses, 2016

According to fig 2 and table 1, in most significant land uses of Yazd, shortages are observed in per capita. The shortages mostly go to green spaces and sports land use,

followed by cultural land use. These land uses are spaces that mostly attract children and by enhancing their areas, more appropriate environments can be achieved for children.
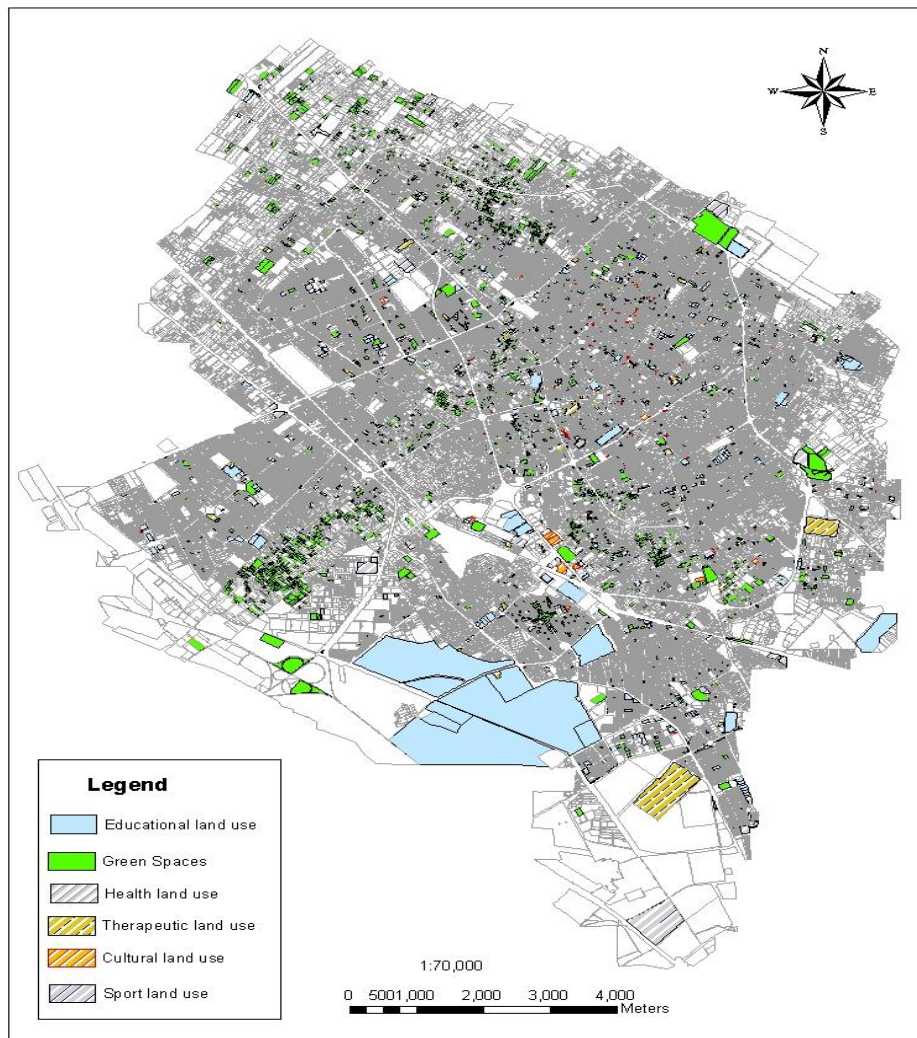
Fig 3 Land use map of Yazd City (resource: Arseh Counseling Engineers, 2007: 94)

3. Methodology

The prevailing approach of the present research is applied and in terms of the nature of the subject, the research method is descriptive, analytical, and survey. In addition, employing Spearman correlation coefficient, the relationship between planning the urban child-oriented space as well as growth and development of creativity in children of Yazd

were investigated. Statistical data were extracted using library and field studies (questionnaires and interviews with children) and research questions were regulated with regard to research objectives and key factors in investigating and evaluating child friendly city and creativity. Moreover, to investigate correlation, the SPSS software and Spearman correlation coefficient were used. The AHP model was implemented to prioritize criteria effectively on creating a child friendly city and enhancing creativity in Yazd.

The population includes all children in Yazd City. According to the Rights of the Child Convention in 1989, by a child in the present study we mean a human being who has not reached the age of 18 years and the Population and Housing Census of 2011, the population of children in Yazd City is 193407 individuals (Deputy of Planning and Employment of Governorate of Yazd, 2011: 56) (table 2). The sample size was calculated using Cochran formula for children as 384 participants and their ideas about child friendly city were investigated. In addition, since parents are considered effective on employing urban spaces, their ideas were used randomly and were employed in prioritizing the criteria and the creativity in the ideas.

Table 2 Children's population of Yazd City in 2011

Age group	Men	Women	Men and women	
			No.	Percentage
0-4 years old	27389	26509	53898	9.3
5-9 years old	24673	23690	48363	8.3
10-14 years old	22825	21604	44429	7.6
15-19 years old	23821	22896	46717	8
Total	**98708**	**94699**	**193407**	**33.2**

Resource: Deputy Governor of Yazd planning and employment, 2011: 56-60

4. Discussion

4.1. Framework of indices of a child friendly city

In this section, first, the indices of child friendly city are presented and introduced in scientific research resources as well as scholars' ideas and then the framework of indices of child friendly city is constructed (table 3).

Table 3 Indices investigated in different resources

Plans and ideas \ Indices	Driskell (2008)	Satterthwaite (2004)	Horreli (2007)	Cityfriendly (2011)	Howard (2006)	Woolcock & steele(2008)	Bartlett (2005)	Chawela (2002)	Woolcock & steele(2008)	Driskell (2002)	Jacobs	Mumford	Lenard	Shia
Security and safety	●	●	●		●	●	●	●	●	●	●			
Access to the nature and green spaces	●					●	●	●	●	●		●		●
Healthy environments, public health supply and garbage collection	●	●					●	●					●	
Access to facilities, activities and services	●		●	●	●	●		●	●	●				●
Existence of environments for entertainment and recreation	●	●					●		●	●		●		●
Access to favorable communication in the environment	●	●					●	●		●			●	
Existence of various public spaces for interaction		●			●		●	●						
Reducing traffic, considering public transport, paying attention to the quality of pedestrian and bicycle routes		●				●	●	●		●			●	●
Making children to participate and valuing them	●		●	●	●	●	●		●	●				

Regarding table 3, the frequency of important indices in child friendly city can be observed in table 4:

Table 4 Framework of indices of child friendly city

Indices of child friendly city	Frequency of indices
Security and safety	10
Access to facilities, activities and services	9
Access to the nature and green spaces	8
Making children to participate and valuing them	8
Creation of environments for entertainment and recreation	7
Reducing traffic, considering public transport, paying attention to the quality of pedestrian and bicycle routes	7
Access to favorable communication in the environment	6
Healthy environments, public health supply and garbage collection	5
Existence of various public spaces for interaction	4

Considering the identification of important indices of the research, research questions were developed with regard to the aims and key factors evaluating the child friendly city. The investigation of this index includes five criteria; location of playing, social interactions, accessibility, participation, security, and safety investigated in the form of certain items in the questionnaire distributed among 384 participants. The results are presented in table 5 in the form of frequency distribution related to each dimension of child friendly city.

Regarding the obtained data, it can be identified that the mean scores of items of the child friendly city are higher than the moderate level. It means that these cases can be enhanced in urban spaces of Yazd.

Table 5 Frequency distribution of items related to child friendly city

	Criteria	Items	Frequency (%)	Mean
The child friendly city	**The location of playing**	From among water, soil, animals, and to play in the nature and green spaces, which one do you like more? 1. Water; 2. Soil; 3. Animals; 4. Play in the nature and green spaces	Relationship with animals: 44.8% Green spaces: 31.8 Water: 21.6 Soil: 1.8%	2.87
	Social interactions	With whom do you like to spend your leisure time and activities? 1. Solely; 2. Parents and family members; 3. Friends and peers; 4. Children of relatives	Friends and peers: 42.4% Parents: 22.7% Children of relatives: 20.8% Solely: 14.1%	2.7
	Access	How many minutes is the distance of your home to the nearest parks in your neighborhood by foot? 1.5 min; 2. 5-10 min; 3. More than 10 min; 4. The lack of parks in neighborhoods	The lack of parks in neighborhoods: 37.2% 5 minutes: 22.7% 5-10 minutes: 16.1% More than 10 minutes: 11.5%	2.48
	Participation	Which spaces do you like more in the city? (If you were as the mayor, which space would you like to construct in the city?)	Gyms and pools: 13.8% Playgrounds and parks: 13% Circuses and folk shows: 12.7% Spaces for biking: 12%	6.47
		Music hall for children / Museum for children / Toy House		
		Spaces for biking / Green spaces / Stores for children and adolescents		
		Book houses / Cinema for children / Circuses and folk shows		
		Others / Playgrounds and parks / Gyms and pools		
	Security and safety	With which vehicle do you go school? 1. By foot; 2. Automobile; 3. Bicycle; 4. Public transportation	Automobile: 85.9% By foot: 7.6% Bicycle: 4.4% Public transportation: 2.1%	2.01
		Where are your playgrounds? 1. Alleys in the neighborhoods; 2. Playgrounds and parks in neighborhoods; 3. Sports complexes in neighborhoods; 4. Yards or green spaces of complexes	Yards or green spaces of complexes: 34.4% Playgrounds and parks in neighborhoods: 21.1% Alleys in neighborhoods: 13.5% Sports complexes in neighborhoods: 10.9%	3.66

4.2. Investigating criteria of creativity

Playing is one of the main features and needs of childhood causing comprehensive (social, emotional, mental, physical, etc.) development. Moreover, it is considered as an important factor in creating vivacity in children and results in the growth of creativity in them. Considering these factors concurrently causes the creation of a sense of children's belongingness to the environments.

The present study investigated the creativity among children as one of the main dimensions. The framework to investigate this index includes 3 criteria of behavioral, physical and sensual domain of creativity in the form of items presented in table 6. Frequency distribution related to each dimension of creativity is also identified.

Table 6 Frequency distribution of items related to Creativity

	Criteria	Items	Frequency (%)	Mean
Creativity	Behavioral	Developing creative games	2.18	1.84
		Creating new ideas	5.1	1.27
		Evoking the sense of exploration	9.93	2.1
		Creating warm and freely relations with children	15.24	2.7
		Compliance with certain behavioral patterns in games	1.05	0.54
	Physical	Observing scales for children	10.1	1.93
		Flexibility of spaces with children and maintenance	2.74	1
	Sensual	The use of the nature (by combining spaces with the nature)	4.2	2.50
		Taking advantage of the natural elements in the design of spaces (soil, water, etc.)	29.6	2.87
		Creating a sense of privacy and tranquility in spaces	10.71	2.01
		considering outdoors or courtyards	6.35	1.7
		Implementing programs such as: selection and planting of herbal species in open areas of kindergartens	0	0
		Creating the favorable landscape (trees and lawn spaces)	2.8	1.02

4.3. Analyzing the research hypothesis

In the present study, it is necessary to investigate the relationship between child-oriented urban spaces and development of creativity in children. The variables of child friendly urban spaces and criteria of creativity were identified and used for estimating the correlation between these two factors, and the accumulation of items in different dimensions was considered. The questionnaire items were regulated in the form of ranked data, analyses were then conducted in the SPSS. Based on the Spearman correlation coefficient, the results indicated that correlation between criteria of child-oriented cities and enhancing creativity in children is at a highly significant level as r=0.726 (table 7). That is, the more the criteria related to child friendly city include security and safety, participation, access, etc., the more the city of Yazd would be improved, and thus different dimensions of creativity including behavioral, physical, and sensual creativity increase in children from Yazd.

Table 7 Results of Spearman correlation coefficient between two factors of the child friendly city and creativity

			city	creativity
Spearman's rho	city	Correlation Coefficient	1.000	.726*
		Sig. (2-tailed)	.	.013
		N	384	384
	creativity	Correlation Coefficient	. 726*	1.000
		Sig. (2-tailed)	.013	.
		N	384	384

*. Correlation is significant at the 0.05 level (2-tailed).

Furthermore, regarding the issue that different dimensions have been investigated both about child friendly city and creativity, according to the AHP model, different dimensions of these two factors in Yazd City were prioritized. The AHP model is one of the multi-criteria decision making models based on paired comparison and hour rates from 1 to 9. The estimation of the degree of significance of each criterion was compared with others to identify the weight of items. To do these paired comparisons, experts' ideas related to children's affairs were employed. The results of the comparisons are presented in tables 8 and 9.
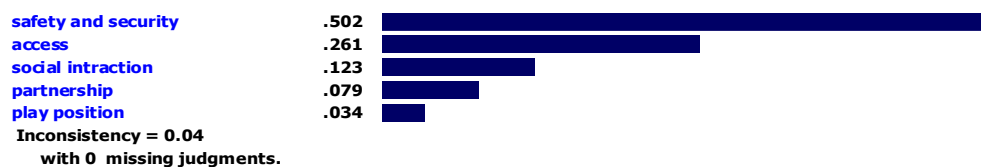
Table 8 Matrix of paired comparisons of criteria of child friendly city in Yazd city

Child friendly city	Location of playing	Social interactions	Access	Participation	Security and safety
Location of playing	1	1/5	1/7	1/3	1/9
Social interactions	5	1	1/3	2	1/5
Access	7	3	1	4	1/3
Participation	3	1/2	1/4	1	1/5
Security and safety	9	5	3	5	1

According to the Expert Choice, the final weight of criteria was calculated and presented in fig 4. Accordingly, from among criteria affecting child friendly city, security and safety with the weight of 0.502 had the highest significance, whereas the location of playing with the weight of 0.034 had the lowest significance in Yazd.

Model Name: child friendly city

Priorities with respect to:
Goal: child friendly city

safety and security	.502
access	.261
social intraction	.123
partnership	.079
play position	.034

Inconsistency = 0.04
   with 0 missing judgments.

Fig 4 Prioritized chart of the weight of criteria related to child friendly city using the AHP model
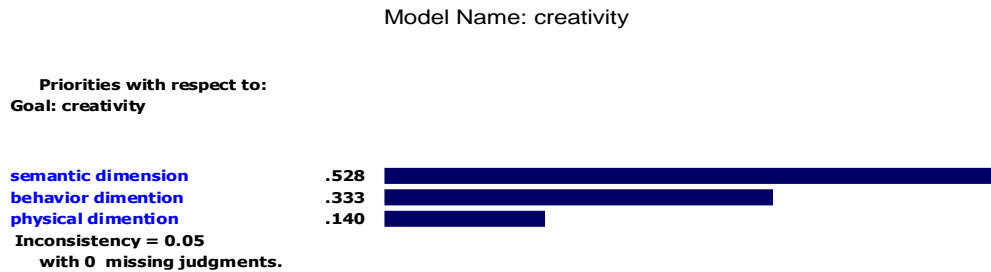
The criteria related to creativity in Yazd City, using the AHP model and regarding the mean scores of experts' ideas, were investigated and the results are presented in table 9:

Table 9 Paired matrix of criteria related to creativity in Yazd

Creativity	Behavioral dimension	Physical dimension	Sensual dimension
Behavioral dimension	1	3	1/2
Physical dimension	1/3	1	1/3
Sensual dimension	2	3	1

In addition, according to the calculations conducted in the Expert Choice, the final weight of criteria was calculated and presented. Accordingly, from among criteria affecting child friendly city, the sensual dimension with the weight of 0.528 and behavioral dimension with

the weight of 0.333 had the highest significance, while the physical dimension with the weight as 0.14 had the lowest significance in Yazd (fig 5).

Model Name: creativity

Priorities with respect to:
Goal: creativity

semantic dimension	.528
behavior dimention	.333
physical dimention	.140

Inconsistency = 0.05
   with 0 missing judgments.

Fig 5 Prioritized chart of the weight of criteria related to child friendly city using the AHP model

5. Conclusion and suggestions

Children have different attitudes and preferences in urban spaces. In general, it can be stated that an urban space should be socially and physically accessible to all people regardless of their income level, physical limitation, and wherever they live in a city. In addition, this space should be able to provide a ground for equal presence of all residents. It should be appropriate for their social needs. For example, to supply accessibility, not only ideal conditions of adolescents should be considered, but also the needs of disabled and old individuals and those mothers with big baby strollers or baby bags, or children who use bikes in these public and social spaces in the city. In addition, by knowing children's abilities and skills, we can increase the presence of children in the city. Moreover, by a sense of participation and independence that is created by children's social interaction, we may enhance the sense of self-confidence in children and consequently increase their creativity.

The findings of the present study about Yazd City, regarding the newness of the subject, indicated the lowness of operational and implementation levels of the child friendly city by effective organizations such as the municipality of Yazd. There is shortage of social facilities and utilities for children, such as lack of recreational places and green spaces in the city and lack of security for children in public passages and urban spaces. The results indicate that the proposed per capita for projects was for the entire city of Yazd. Hence, the calculation level of land uses especially for children cannot be valid. The per capita allocated for children in development project of Yazd city compared to children population cannot realize the needs of this social layer. For example, in Yazd, there are thousands of children who do not enjoy the conditions, instruments, and facilities for playing. To realize children's needs, appropriate toys, relations among peers, identification of phenomena and facing new issues, enhancing children's health and training life skills via plays, etc., Yazd requires establishment of toy houses and consider per capita of land uses in urban

development projects for accessing cognitive, psychological, emotional, and physical development.

Unfortunately, most of the land uses of Yazd city in each neighborhood are more economically, and not emotionally, advantageous; therefore, these spaces cannot realize children's needs. Consequently, applying playgrounds which cannot be parks can contribute to children' development. It is better that all spaces, passages, and sidewalks in the city be more attractive for children by using different designs, appropriate lighting, and favorable urban furniture in order that children today and in future will not observe a gloomy and dull environment in the city and instead make a constructive relationship with the urban space. In general, based on the statistics and figures obtained from investigating levels, per capita and high-level projects, in the status quo, we face serious shortages for children's needs in the present and future. Naturally, these shortages will be more serious for the future with population increase and the capacity of Yazd to accommodate more population. Therefore, this problem requires appropriate planning and design to enhance the quality of settlements and increase the level of services.

The results obtained from research analysis emphasize prioritizing the criteria of child-friendly city and creativity in Yazd city. Appropriate and more executive strategies can be suggested to create child-friendly urban spaces and to enhance the creativity in children from Yazd.

o   Security, safety and access

- Neighboring spaces specific to children with residential areas
- Creating spaces to sit near open local spaces
- Enough light
- Observing security considerations

o   Social interaction

Regarding the effect of rich Islamic-Iranian architecture on Yazd, the following traditional strategies can be applied in the city:
- Identifying and defining the center of neighborhoods away from vehicular roadways
- Creating a walkway in neighborhoods
- Creating bicycle tracks
- Converting dilapidated spaces into places tailored to the needs of children
- Enhancing the quality of public spaces of Yazd according to the culture and identity to enhance and stimulate the activity level and desired behavior for children in Yazd.

o   Participation

- Children's participation and decision-making about their city

- Using signs to orient the children in the neighborhood
- Child - scale use of furniture
- Use of bright colors in urban areas

o   Location of playing

Regarding the lack of green spaces and playgrounds in Yazd and the existence of arid lands, the following strategies are presented:
- Increasing the per capita of urban green spaces
- Designing theme parks
- Creating game garden
- Using natural elements such as sand, water and animals in designing spaces.

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Explaining the Concept of Flexibility in Urban Spaces

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Abstract

Nowadays, comprehending urban spaces and the appropriate design of space is a way toward meeting the diversified needs of each citizen. Among this, attention to the flexibility principle as a dynamic of qualified urban space creation can facilitate spaces to provide multiple opportunities for the general public. Accordingly, this study attempts to address the concept of flexibility and realization of it in urban spacing. In order to achieve flexibility in urban space, a new pattern is presented. It is notable that achieving the space at first needs prerequisites including permeability, adaptability, legibility followed by body requisites such as positive outdoor spaces, spaces with multimodal behavioural patterns, multiuse buildings, active frontages and fine amenities. These include constructive elements like activity, place and people. Through preparing such elements, flexibility can emerge in urban spaces into three classes; versatility, convertibility and expansibility at micro and macro scales.

Keywords: Flexibility; Urban space; Versatility; Convertibility; Expansibility

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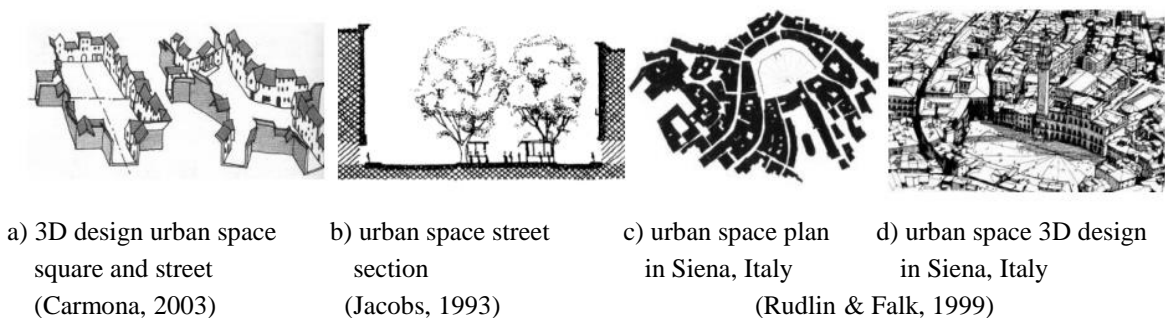*E-mail address:* ardeshiri@biau.ac.ir.

1. Introduction

Public spaces have an important role in forming social life, initial civilization appearances and biological complexes. By taking into account old cities in the 1900's that were just 13% of world population and also the population increase in the world, it is foreseen that up to 2050 cities will be filled with 70% of the world population. Hence this issue shows the necessity of having a new look towards urban development and its elements.

Future perspective is illustrative of flexible and creative cities as economics, social, and cultural development contexts of societies, and urban spaces such as streets, parks, and squares are important sites to shape social, economic, and political activities (Collins, 2009: 517). Given the importance of issue, it is tried, in this paper, to offer a pattern after explaining the concept of urban spaces and flexibility matter in order to have a comprehensive grasp of the issue and also to become familiar with all dimensions of flexible urban spaces by utilizing it.

2. Urban Space Nature

The urban space issue, as a conceptual phenomenon that is organized from information in various forms, performances and meanings, social life promotion and the shaping context of society is an indicator of culture and urbanity of civilization. Urban space is the reality resulting from the combination of social relationships in body context to needed human performances (Majedi et al., 2011: 263). According to performance perspectives urban spaces are known as outdoor spaces of buildings. These spaces are defined by city symbols and city roofs (Chau, 2000; Paumier, 2004).

a) 3D design urban space	b) urban space street	c) urban space plan	d) urban space 3D design
square and street	section	in Siena, Italy	in Siena, Italy
(Carmona, 2003)	(Jacobs, 1993)	(Rudlin & Falk, 1999)	

**Fig 1** Examples of urban space

Urban space status is essential in cities at various scales among created elements. It can be stated that urban space is the only unique element from the built environment in city that is posed in the field of engineers and urban planners. This issue demonstrates an emphasis on coherent and an all-dimension look into these spaces.
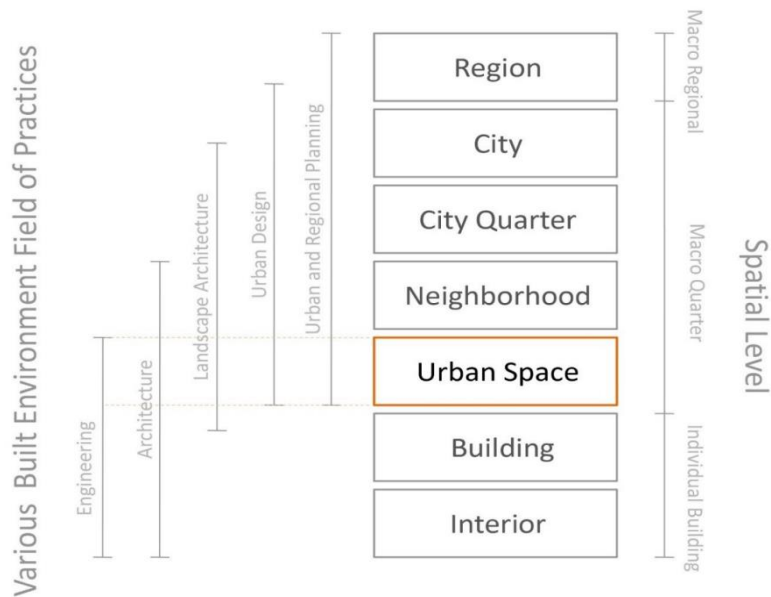
Fig 2 Urban space status among different living sectors
(Source: Moughtin & Mertens, 2003; Chau, 2000)

3. Public Urban Space

Urban spaces are explored in several classifications as determined urban fields and according to the necessity of their shape in order to answer the users' needs and offer acceptable levels of spatial quality to the users. These categorizations are public, semi-public and private urban spaces. Among these are streets, squares, and parks also known as public spaces, and also frontal yards can be recognized as semi-public spaces; and finally, private parking spaces which are known as private urban spaces (Madanipour, 2003).
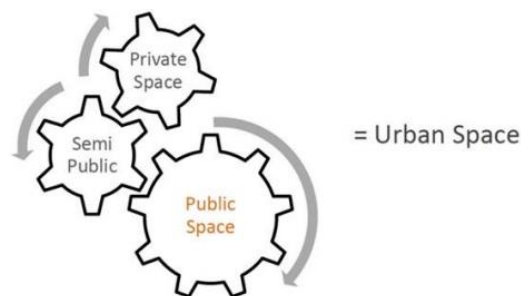
Fig 3 Urban spaces classifications including public, semipublic, and private spaces

It should be mentioned that among the various classifications of urban spaces, public space can be the most effective urban area for refreshing and dynamics. This space, in actual fact, provides services available to all walks of life without gender discrimination, ethnic prejudice, age bias, or religious, social, or economic favouritism. Moreover, public urban spaces are also called public arenas or public fields.

Fig 4 Public space, a kind of space for all people (Jacobs, 1993: 47)

4. Typology of Public Space

Generally, there are 4 types of separable public spaces. The first types are streets including all hierarchies, boulevards, and rest areas. The second types are plazas and squares. The third types are parks which include linear parks, city parks, and recreation grounds. The last types are water borders that include spaces leading to seas and water channels (Moughtin & Mertens, 2003).

a) Shanselize St, Paris   b) Hans Sq. Copenhagen   c) Washington, Lafayette park   d) London, Nayebossaltasneh channel
   (Gehl, 2004)   (Gehl, 2004)   (Paumier, 2004)   (Paumier, 2004)

Fig 5 Examples of public space

5. Public Spaces Performance

Public spaces are social, economic, leisure time spaces, where traffic congestion occurs (Gehl, 2007; CABE, 2004), and it should be noticed that the influence of public spaces on the performance of space must be of desirable quality. Regarding public space performance, Lord Ragers states that, these spaces should play an important role as outdoor room to relax and to enjoy urban experience and various activities like to eat outdoors and a place for recreation, to walk and sit and for political and civic events (Thompson, 2002: 61).

6. Accessibility to High-Quality Urban Space

Similarly, Gehl (2004), Paumier (2004), Davise (2007), and Evans (2007) believe in seven qualities that can create urban space promotion and development including safety, comfort ability, inclusiveness, attractiveness, durability, good management, and flexibility. It can be understood that flexibility has the lead role among them all. A new look toward urban spaces with flexibility is an attempt to define and reuse space, give personality to open spaces, and create social changes with respect to environment and in urban dynamic framework and accessibility to urban spaces (Thompson, 2002: 59).
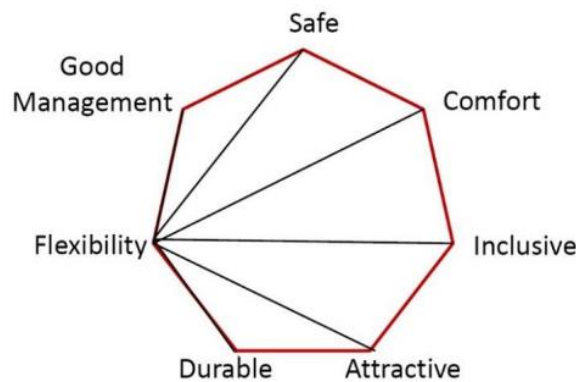
Fig 6 Required components to get to high-quality urban space

7. Explaining the Concept of Flexibility and Flexible Urban Spaces

The relevant literature indicates that the flexibility should be considered as a "useful act"; although, this concept indicates useful benefits, it is not absolutely good (Adler, 1988: 36). Flexibility, literally, means coordination and qualification in every environmental condition (Moein, 1992) and the concept of changeability is the simplicity to be able to adapt to the environment and its changes at different levels (Mardomi, 2010: 110). Flexibility, in

general, means a change in the system and making the possibility of obtaining new conditions, needs, and frameworks.

The concept of flexibility is obtained from Latin references in urban context studies conducted on environmental systems' behaviour usually against tensions and disorders rooted from exterior factors (Davic and Welsh), and indicates "durability of relationships in system" (Barnett, 2001: 978).

The inspiration from flexible ecosystem means the system's ability or society at risk to resist internal and exterior risks, and also to recover from risks at certain times with efficient behaviours including structure maintenance and infrastructural performances and an attempt to repair them (UNISDR, 2010: 10). The flexibility is a system's ability to perceive environmental changes and its fast and efficient response to them. It should be noted that the flexibility of an urban space leads to a system's having better response to changes (Pasmore, 1994: 4).

Generally, flexibility can be considered as a connector between urban space and its outdoor environment to attract non-certainty, system dynamic degree as well as adaptation and changeability. In effect, it should be stressed that flexibility searches for selection arrays against needs.

A notion should be considered about urban space, i.e., accepting that space being able to respond to various needs made by life's new streams, cultures, and different values. This important fact should also be considered that whether it is proper for one group in one space and whether it is not an obstacle for other groups' fulfillment and enjoyment. It should be accepted that urban spaces cannot be seen as the 19th century parks. Those parks were like melting pots that dissolved all peoples and cultures as one coherent nation in themselves. Therefore, today it is needed to search to create spaces like salad bowls for various people and cultures to be able to find inter-personal various needs (Thompson, 2002: 60).

8. Necessary Perquisites to Achieve Flexible Urban Spaces

Undoubtedly making flexible urban spaces enables the provision of many options for citizens' needs perquisites including permeability, versatility, and legibility that influence different dimensions of citizens' power or selection procedures.

8.1. Permeability

Places available for citizens are the only ones that give the rights of selection to people. Permeability in this interpretation means potential ways for environments, which is the central factor in achieving flexible urban spaces.

8.2. Versatility

Versatile spaces are the ones with easy accessibility giving direction to suggested options of space and experiences in the implementation stream (Bentley et al., 2003: 6).

8.3. Legibility

When citizens have the opportunity to utilize benefits providing quality, they would be able to perceive the place organization and what happens there. Legibility is the quality that helps one space to be perceived (Bentley et al., 2003: 113).

9. Urban Space Flexibility in Two Scales

This is an important fact in exploring urban space to make a differentiation between micro and macro scales. This makes the twofold analysis more comprehensive and the exploration possible.

9.1. Flexibility in Macro Scale

In this scale, flexibility addresses urban space ability coherently or its main sector in making different options available. Utilizing flexibility advantages in this scale usually includes references which are not available for most people, but flexibility in macro scale indirectly can increase the users' general selection power in the long-term.

9.2. Flexibility in Micro Scale

Flexibility in this scale is defined in spatial elements and ingredients and urban space performance, and it considers certain elements in urban space in order to be able to link vast ranges of functional options to it. It should be taken into consideration that this issue influences most people's daily selection power and activities quality; therefore, it is regarded as important and serious (Bentley et al., 2003).

10. Body Perquisites of Flexible Urban Spaces

After introducing accessing perquisites and accomplishing flexible urban spaces, it is required to refer to body elements and their features that are undoubtedly necessary to create flexible urban spaces. These body features appear in positive exterior spaces, multimodal behavioral patterns, multiuse buildings, active frontages and fine amenities which are mentioned in the following.

10.1. Positive Outdoor Spaces

Flexible urban space is positively coherent with certain limitations which can provide an optimum size and proper shape in a good relation with space characteristics and performance (Davies, 2007).

Negative space   **Positive space**
Fig 7 Example of positive Outdoor Spaces
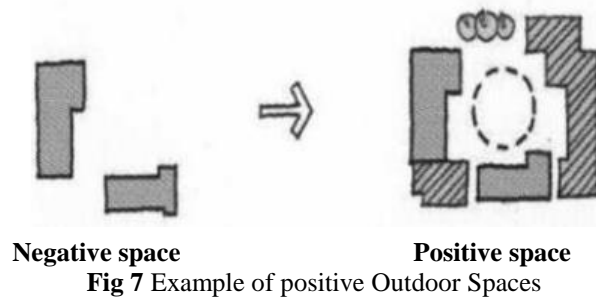
10.2. Spaces with Multimodal Behavior Pattern

Flexible streets as the flexible urban space element is an example of multimodal spaces utilized in order to adapt with the macro spectrum of citizens' needs. These spaces are always pathways where passengers commute on foot or drive with private cars, public transportation vehicles or bicycles with a complete coordination with the city's other paths. It is important to note that flexible paths are patterns of optimum space usage providing various options. Some parts are accomplished by various activities among streets, and they also create safety and passenger-oriented environments with low traffic.
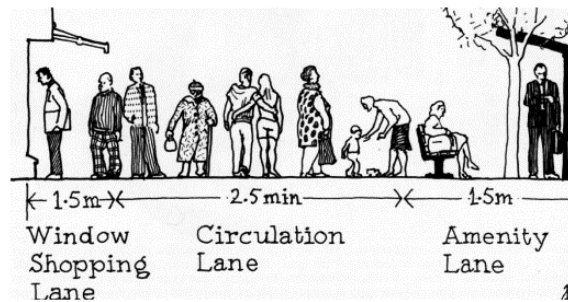
Fig 8 Convenient pavement, space with multimodal behavioral pattern (Bentley et al., 1985)

10.3. Multifunctional Structures

To obtain a flexible urban space, multifunctional building shaping in this environment is essential. Flexible building indexes can be referred to as adaptations and adjustments that

are created along with different tasks during time and shaping various activities in the given spaces.

10.4. Active Frontage

Cooperation among buildings and public plazas are one of the most important issues that should be considered in flexible urban space, and this can be accomplished by semi-public plaza designing. These are the kinds of design which are configured after the indoor private interaction with neighbours and vast ranges of outdoor activities in the edges.

a. Spaces to wait and sit   b. Social transaction sites   c. Arcade to protect from sun and rain
Fig 9 Examples of Active Frontage (Bentley et al., 1985)

10.5. Fine Amenities

This is the kind of place able to utilize various forms to be attractive and convenient and offers fine amenities. These amenities prevent from shaping unpleasant feelings from space in citizens and move forward reinforcing the sense of enjoyment including experience of elements like trees and bushes, water quality, pavement, benches, public art works and street regular furniture.

a. Coquette statue   b. Using urban amenities   c. Reinforcing freshness with water in environment
Fig 10 Examples of Fine Amenities (Gehl, 2004)

11. Flexibility Types in Urban Space

Urban spaces have been figured in urban contexts in various periods which have relatively sought to meet people's needs and expectations such as squares, paths, mosques, and markets. There are spaces where three types of flexibility can be found. This classification is adopted from William M. Pena and Steven A. Parshall's perspectives about the flexibility issue that is addressed in their book entitled 'Problem Seeking, An Architectural Programming Primer' which includes multifunction, convertibility indoor space, and expansibility to the outdoors (Pena & Parshall, 2012: 84). It is emphasized that these three types together can accomplish flexibility in its complete meaning, and each one alone cannot be replaced by the concept of flexibility.
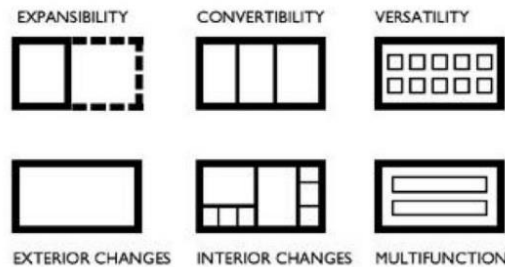
Fig 11 Flexible space typology from Pena and Parshall perspective (Pena & Parshall, 2012: 84)

11.1. Flexible Urban Space Multifunction

Spaces which can be used for different purposes offer their users more choice than places whose design is limited to a single fixed use (Bentley et al., 1985: 56). Spaces benefiting these abilities with quality are known as multifunction. Multifunction or performance versatility is considered as an important feature of flexible urban spaces which seek to create various selections in using spaces by citizens. Activity, place, and people variables can be regarded as this kind of flexibility; a flexible space can be utilized for several usages simultaneously and also for one performance at various times and in different places by people of different ages, genders, and cultures. Totally, it should be stated that urban spaces' multifunction and versatility is assumed as the most effective and basic way to increase urban space flexibility.

11.2. Flexible Urban Space Convertibility

The feature of convertibility happens in an urban space when this space is able to include different performances against changes in it and adapt to new conditions. It should be noted that changes happening in this type and space are created by spatial elements and happen

without a change in total dimensions of urban spaces such as changes in characteristics and structure, micro elements and spaces combination. The notion is that this feature happens in new spaces for boundaries being variable, elements, space furniture, the possibility to add or reduce other elements, and their combination.

As previously mentioned, changes to coordinate urban spaces with new conditions occur in space, but effective factors in a system may impose themselves, from indoor or outdoor, on urban spaces. It is worthy to mention that flexibility in urban contexts is one of the solutions for reducing natural and non-natural harms; given the necessity for accurate energy usage with daily growth of population, attention to future generations is crucial for world population, and new urban planning has to try to put forward durability and non-functional defense by creating flexible urban spaces. These issues will be solved using urban space convertibility features.

11.3. Flexible Urban Space Expansibility

In designing expansible urban spaces, the feature of expansibility tries to consider outdoor changes in urban spaces, leading to its expansion according to performance, structure and space, hence helping citizens have more of a selection. The expansion happening in urban space can be accomplished horizontally and vertically. The appearance of automobiles in urban spaces or the urban space users' increase can make new needs for which expansibility can, without doubt, provide solutions.

Flexible Urban Space			
constructive elements	people - place - activity		
flexibility types	expansibility	convertibility	multifunction
changes field and range	outdoor structural-spatial	indoor structural- spatial	indoor functional

Fig 12 Constructing elements and changes range for flexible urban spaces types

12. Conclusion

Today urban space recognition and proper designing is a way to meet society members' needs, while in many cities it is seen that urban space occurrence as a turnoff, designed by permanent and contemporary versatilities and body divisions, show people's attention and presence. To this must be added that attention to flexibility principle in configuring urban spaces has been very important and the presence of many facts like the triple flexibility types mainly multifunction, convertibility, and expansibility in these spaces confirm this

high importance. It is worthy to point out that a regular and all-dimension analysis in urban spaces provides a pattern which depicts the triple flexibility types more according to people, place and activity variables in two micro and macro scales. In this way, quality accomplishments such as legibility, versatility, and permeability as perquisites and positive outdoor spaces for the quintuple body necessities, multimodal spaces, multifunctional structures, active frontages, and fine amenities become surely necessary in creating flexible urban spaces.

Finally, it can be concluded that life's new approaches and configurations with various cultures and values as well as the creation of various needs in order to accomplish the flexibility concept in urban spaces are highly more efficient than those by technology revolutions. The utilization of a modern conciliator in responding to draw a responsive urban space and more efficient and optimum urban spaces can be deducted to citizens by a better understanding of the flexibility concept.

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