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Designing for Improving Social Relationship with Interaction Design Approach

Nasser Koleini Mamaghani\textsuperscript{a,*}, Azadeh Parvandar Asadollahi\textsuperscript{b}, Seyed-Reza Mortezaei\textsuperscript{a}

\textsuperscript{a}Assistant Professor Ph.D., Department of Industrial Design, School of Architecture and Environmental Design, Iran University of Science & Technology, Tehran 1684613114, Iran
\textsuperscript{b}Master of Industrial Design, Iran University of Science & Technology, Tehran 1684613114, Iran

Abstract

The industrialization of modern societies in today's world has had an enormous effect on reducing the traditional ways of communication among people. The cities of the world are in serious demand of more specific spaces that fulfils the Socio-cultural relationships of the people. As a result, creating more spaces for the people who frequently try to overcome the dearth of human communication and interaction is necessary. This study has specifically focused on Iranian traditional urban places and spaces which used to effectively address the issue mentioned above. Among them, teashops, Charsooghs, lines, squares, shrines and traditional markets (bazaar) were regarded as the main vibrant places and spaces. The findings reassure the importance of designer role to establish more spaces for more social interactions.

Keywords: Social communication; urban space; interaction design, behaviour

1. Introduction

These days, the cities around the world are experiencing different ways of living. The growth and the development of cities along with various social changes have enormously increased the complexity. Johnston (2000) believes that modernization is a process of social change resulting from the diffusion and adoption of the characteristics of expansive and apparently more advanced societies. Modernization involves social mobilization, the growth of a more effective and centralized apparatus of political and social control (Abdol Karim and Hashim, \textsuperscript{*}Corresponding author. Tel.: +9821-77240467; fax: +9821-77240468.

E-mail address: kcoleini@iust.ac.ir.

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Keywords: Social communication; urban space; interaction design, behaviour
On the other hand, technologies become progressively more an integral part of human behaviour and living spaces, the design of user interface and interactions in regard to the urban space is still a challenging task. Socio-cultural practices of any society depend on the desire of the people to continue practicing them and the resettlement program effect of such practices (Abdol Karim and Hashim, 2012). According to the Australian Ethnic Affairs Council, cultural identity is defined as “the sense of belonging and attachment to a particular way of living, including: language, religion, art, food, values, traditions or any other day-to-day practice, associated with the historical experience of a particular group of people” (1977, p. 3). The process of building a connection to the new community is highly influenced by the level of multicultural interactions (Teig et al. 2009). In a research by Agustina and Beilin (2012), the multicultural interactions within the community gardens have been studied and the degree of which gardening practices changed the people’s behaviour, as a result of Cross-cultural interactions with nature, has been revealed.

In order to create new alternatives and present services, it is necessary to know about the society and the people, their needs and preferences. Maslow pyramid, although not recent, is a good example for identification of the basic needs and create a foundation (Fig. 1). With regard to his pyramid, the lack of the each human need will results in various consequences, mostly unpleasant. On the third level, for instance, emotional and social needs are located. Unmet needs at this level bring about the disappearance of family relationships and social interactions (Maslow, 1954). It has been indicated that modernization and industrialization of modern societies today have had an effective role in reducing the communication of people in their societies (Kaczynski, 2007).

![Fig. 1. Maslow hierarchy of needs.](Source: Maslow, 1954)

With that in mind, the question arises here will be: what is or could be the solution? Regarding what is in progress in the current situations across cities around the world, one could say that cities are in demand of more specific spaces that fulfil Socio-cultural relations with proper performance. One of these spaces is the public or urban recreational space in which people spend their leisure times. Findings of a study that was done in 2006 on 1000 public spaces around the world indicate that four factors are highly effective on the utility of the urban spaces (as showed in Fig. 2). First factor is continuity of spaces and easy access to them, second factor points to the activity of the people in these spaces. The third factor refers to comfort and attraction of such spaces with the last which is social places that allow social interaction for the public (Moeini, 2012). We can refer to some factors of urban space failures such as lack of space for gathering, poor entrance, inaccessible spaces from a visible view and direction. With the progress of technology and abundant tendencies to virtual spaces (such as cyberspace) and unilateral formation of social interactions, there is a need for urban open spaces in local–urban scale in order to reduce social stresses by increasing face to face interactions and establishing verbal communication. As the city is directed to urban development with unknown identity, due to specific conditions of modern life, social interactions have been reduced and human beings made continuous effort to create and use virtual spaces. The current research will focus on how to communicate a given content using interaction design. Therefore, the aim of the study was formulated as how the formation and establishment of such spaces for the people who work during the day would increase the quality of urban environment using interaction design approaches. The authors investigated the issue of designing
for social interaction in public spaces and in particular in cities with different environments. The expected finding is supposed to decrease the mental stress of the people living in modern cities.

![Fig. 2. Four factors of effective on utility of the urban spaces.](image)

People who living in big cities participate in different social life and events, interact with different social groups and develop relationships. In other words, this is the formation of public and urban spaces which allow people to meet up and interact within the context of the whole community. These kinds of communities address family relationships, cultural groupings, local connections and social group meeting sharing their common interests. Common activity spaces are the most important parts of a social system. On the other hand, such spaces are important because social interaction takes place. Therefore, towns and cities need to create specific places where social activities can happen and people can freely choose. Previous studies have clearly showed that any kind of communicative activity would affect the quality of life. The quality of life within urban context is the outcome of the human interaction with urban environment (Das, 2008). Nasution and Zahrah showed in their study that there is a significant relationship between public open spaces and the physical quality of life. The physical elements and activities at public space offer many benefits to quality of life, including health, social interaction and economic value (Nasution and Zahrah, 2014). The satisfaction level of public space in the urban environment can be an indicator of satisfaction with the urban environment, and next can affect people’s quality of life. The fact indicated that public and urban space could have accommodated social interaction well. The completion of this need would relate to the psychological and physiological health of people. It should be noted that for a sustainable community development, convenient activity spaces must be designed for all different individuals like children, women, the elderly, and the disabled.

Other studies have undoubtedly indicated that experience of space in the urban space is directly affected by what is seen and how to view it (Lubis and Primasari, 2012). Urban image in human minds and thereby the human behaviors can be oriented through all furniture elements to be created in cities (Lang, 1994). For example, Lubis and Primasari (2012) in a study focused on the relationship between people and the urban screen and how that affects the patterns of movement and human activities in urban and public spaces. The results showed that urban screen helps to shape the movement in urban space, and it is a medium that has a share in the formation of urban space. In this regard, urban screens, which display moving images, capture the activities and movements of people in public spaces by offering an expansion of space, a virtual space (Lubis and Primasari, 2012). Well designed and planned urban, and public spaces provide significant satisfaction, aesthetic, social behavior, psychological and physiological needs and environmental benefits for their users (Townsend and Weerasuriye, 2010).

2. Social communication

The design and evaluation of the user experience for social communication is a major issue. These social experiences are thus closely related to the feeling, emotional and affective experiences and satisfaction of the interaction as well. Cognitive researchers have assumed that communication competence exists if the communicator has a diverse range of social knowledge and the cognitive abilities required for effective communication (Omar, 2014). Communication is one of the most important concepts taken up in connection with surrounding of the towns. Communication in organizational life provides a basis for understanding virtually every human process which occurs in an organization (Ayuba et. al., 2014). Edvim Amri defines communication in a general sense:
communication means skill of transferring information, thoughts and human behaviors from one person to another person. Aristotle, the Greek philosopher, may be the first thinker who mentioned communication for the first time 2300 years ago. He defines communication in book *Ritorigha*: communication means searching for all available means and available for encouraging and persuading others. Henry Lindgren in his book, Human Communication Art says: communication is a process that contains and implies all sorts of transferring the meaning (Sarokhani, 1993). Communication is regarded as an event during which two or more persons exchange their ideas, views, feelings and opinions and inform each other of the use of the messages of which meaning is equal for all of them. Then communication is the transfer of the message to another person and is the basis of society formation and expansion of the communication causes to expand the culture (Mohsenianrad, 1995). Actually public spaces can give meaning or significance to local communities by individuals or groups (Kurniawati, 2012). Supportive social environment is the condition that employs social support (Laurens, 2012). Lewin (cited in Staats, 2004) stated that one of the most important factors responsible for the success of changing communication and human being behavior in a small group, is the social interaction being able to experience group. Today, corporate communication practitioners are expected to manage extremely complex and varied operations of an organization (Mohamad, et al., 2014). Also, social media have become an integral part of communication behavior, and organizations cannot ignore social media in their crisis communications any longer. With social media presence being integrated and embedded in our everyday life, the field of communication such as internal, external and corporate communication have also been revolutionized. Because social media is built on relationships, it is worth revisiting what makes a good relationship. In a personal relationship, openness, communication, engagement, and reciprocity are all important factors to developing a strong bond and a quality relationship (Husain, et al., 2014).

2.1. Lack of social communication

The lack of social communication causes three results including the lack of language, relative stasis of social time, and failure to transfer knowledge. The lack of language causes the person far from society lacks main tool of communication i.e. language. Relative stasis of social time cause human beings exchange their knowledge through gathering and increase their communication in this way. Failure to transfer knowledge cause human beings can transfer their skills, findings, and knowledge to others only in gathering and cause their survival in history by innovating language and script and writing.

2.2. Deficiency of human relationship

Importance of communication can not only be measured by lack of communication and its effects, but also effects of deficiency of human communication can be found. The more the social increase, the more specified that the unsociable human being lacking communication with others is susceptible to social damages such as suicide. Emil Dorkim in his work (suicide) reached the same result. He thinks that suicide is not only results from disease or handicap but also from gap between person and society or deficiency of human relations (Sarokhani, 1993).

3. Area of interaction in public domain

Public domain is the field that persons have social interactions with each other. Whatever occurs in our cities is that we use two main cells in our cities: from home to workplace and vice versa, however we also visit other cells, for leisure, learning and so on. It means that the city has turned into means that direct us to two destinations and have transient role while public domain is the destination and goal not transient place. Urban spaces and our life quality should create this demand in the citizen to go out of home to see urban space. Only in this case, the persons will establish communication (Khosravi Danesh, 2005). In today’s world, public spaces have dominated on the spaces for contacts and social–cultural communication for the vehicle transportation. Hopper and Nielsen (1991) studied the impact of social interaction to change group standards or social norms on recycling behaviour, by identifying a person in the neighborhood. It has been identified four basics of attractive experiences including cultural practices, physical conditions, the content of the installations, and social practices. Even replacement of some spaces for transportation led to the loss of many traditional urban spaces with important social-cultural
performance, but cities need the spaces that fulfill Social–cultural relations and have suitable performance. In Iran, teashops, charsooghs, lines, squares, and shrines were regarded as main urban spaces (Masoudi, 2001). Traditional markets (bazaar) which are place of social interaction represented urbanism, emergence of identity and social life of the city and group images of the citizens and reflection of tribal and cultural values of the urban civilization of Iran. Market creates a strong network of social relations by creating unity and relationship between elements and performances. Open space of the mosques that is across the market can gather different persons in the market once in a day to perform religious duties in addition to communication. Other spaces, which are socially and culturally important, are traditional squares such as Hosseinieh.

These squares are spaces with different performances. The most important performances include religious ceremonies including show and music, poetry and speech which are means of showing talents and capabilities of the people in the district. These activities show that people have created special traditions and customs to preserve social relation. Traditions are predictable cultural behaviors, norm which is accepted and has a long record and should be preserved. Other functions of traditional squares include spending leisure time, daily visits, exchange of news and information, informal educations, transfer of experiences and performing charity affairs and relief. These spaces are the places for performing group activities that the persons use in any age group, with any education, any job, and income. Generally, it is more important to be present in such spaces than to know how to reach them. There are some links between space and the person and his identity, touching the space, presence in the space and experiencing it and more importantly experiencing entrance to the distinguished place (Gharib, 1997, Taghi zadeh, 2002, Habib, 2006). Typically, urban public places in contemporary places of Iran can be divided into two groups: traditional places such as shrines, gardens, and modern spaces such as parks, sale centers, and cultural centers. Also, urban places are classified into some groups due to the functional level, like district places, urban spaces, and inner-city spaces. Public spaces can be divided into artificial and natural spaces in terms of the physical structure (Golchinfar, 2006). Voluntary presence of the citizens in space increase opportunity for social interactions also has a direct relationship with space utility, desirable and good space increase tendency of presence (Khosravi Danesh, 2005).

3.1. Interaction design

This term originated from word interaction between the human being and computer for the first time. This field of computer studies relation of the user and their use that is abbreviated to human-computer interaction (HCI) and was mentioned by Bill Magrij, founder of IDU Company. He described the design of the products behavior and making them desirable for the people and users (Marion, 1999). This approach was expanded not only in computer sciences but also in other fields in particular in design service. Use, users and usability are regarded as the keywords of interaction design (Koleini Mamaghani and Morshedzadeh, 2010). Interaction design is a discipline that is concerned with design and deployment of novel interactive artifacts powered by computational technology, into everyday human activity settings. Over the years, the design boundaries of the disciplines of interaction design have expanded from the workspaces to private spaces (Ciolfi et. al., 2007). More recently, public places have also emerged as a design setting for design and deployment of novel interactive artifacts.

3.2. Aim of interaction design

Usability and user experience is the two main goal of interaction design. Usability means ensuring the interactional products and service design which the people use and include:

- **Effectiveness**: Refers to how good a system is at doing what it is supposed to do.
- **Efficiency**: Refers to the way a system supports users in carrying out their tasks.
- **Safety**: Involves protecting the user from dangerous conditions and undesirable situations.
- **Utility**: Refers to an extent to which the system provides the right kind of functionality.
- **Memorability**: Refers to how easy a system is to remember how to use, once learned (Cooper, 2001, Lowgren, 2010)

User experience is the use of the product and use of the public, and urban space should be interesting, enjoyable and pleasant. It means that interaction with the system inspires the people and satisfies him to use the system, and he
concluded that it was not enough to investigate function and form of a product and service. Some issues such as feeling, enjoyment, comfort and clarity while establishing communication with product are important. We can say that effective interaction design of art is interesting and convincing experience for others. The goals are to design the product in urban space and create interesting experiences for others and attract the persons making identity space understandable, lasting and clear. These specifications are effective on creation of place feeling (Cooper, 2001, Lowgren, 2010).

4. Quantitative measurement study

For a better understanding of the finding of this study, 80 subjects participated in this study by using 1-5 Likert scale were questioned, regardless of occupation, age, sex, education (that randomly selected). By using Likert scale questions, the perception of social communication was collected through the level of satisfaction. Most commonly seen as a 5-point scale ranging from "Strongly agree" on one end to "Strongly disagree" on the other with "Neither agree nor disagree" in the middle. Thus, the measuring of the level of participants evaluation of social relationship in public and urban space used a five-point Likert scale ranging from "1" for strongly disagree, "2" for disagree, "3" for neither disagree nor agree, "4" for agree and "5" for strongly agree. Using the mean values of the scale, "3" is considered to be the midpoint. Therefore, any value above than 3 is considered somewhat satisfied and similarly, any value below 3 is considered to unsatisfied. In this regard, 19 statements are considered for build Likert scale questions that are shown in Table 1.

Table 1. Nineteen statements used in Likert scale.

| ID. | Statement |
|-----|-----------|
| 1   | Necessary of communication and social interaction. |
| 2   | Increasing stress and tensions with the increasing working hours and redaction relationship. |
| 3   | Expansion of the communication and social interaction causes to expand culture. |
| 4   | Exchange of thoughts and feelings through communication and social interaction. |
| 5   | Reducing communication and social interaction with others and increasing mental and physical relaxation. |
| 6   | The isolation and without relationship person is leading a successful. |
| 7   | Urban spaces such as recreational and public space is suitable space for social interaction. |
| 8   | The desirability of urban spaces will be increasing of individuals in these space. |
| 9   | The availability of these spaces is one of the factors for using of them. |
| 10  | Ability to activity in these space as a space for walking and exercise is one of the factors for using of them. |
| 11  | If the places are attractive for performing activities the desire of people for using of them will be increase. |
| 12  | The urban spaces are the Suitable place to spend leisure time. |
| 13  | Whatever these places are inaccessible, participate in it more comfortable. |
| 14  | Having a distinct experience in urban spaces will be increase the Appeal of using them. |
| 15  | Create an interesting and enjoyable experience in the urban spaces making them memorable. |
| 16  | Stimulation of people emotion with using stimulus such as light, music, color. |
| 17  | Using components such as light, music and color ... in urban spaces, making them memorable and attractive. |
| 18  | Increasing social interaction with using elements such as open environment, the lack of any barrier and orientation to others. |
| 19  | Short distances and being coplanar are another factors for improving the relationship. |

5. Results and discussion

Designers can provide privacy and control of the space domain with design. Public spaces can be at the center of buildings. It is possible to design corridors with enough width and suitable corner and encounter or the appointment. Sitting and waiting spaces can be designed in such a manner that people sit comfortably and have desirable time and place for social interaction. Parks can be combined with functions of the surrounding environment in such a manner
that they can be live and useful spaces. There should be desirable conditions for movement in space, rotation and participation in social and recreational activities. If the places are attractive for performing activities, other activities such as playing, social activities and social interactions will increase growth opportunities. Mixing different activities and different groups of people (the persons who are different in terms of social class, job, age or gender) allows different performances with each other. Public spaces in the city or residential districts were inviters and are easily accessible. In this case, the people are encouraged to exit from private places and enter the public places (Talebi, 2005). According to our finding in this study, as can be seen in Fig. 3, there are five different means which the designers can improve relationship between persons or prevent it including 1-lack of wall, 2-short distances, 3-low speed, 4-orientation to others and 5-Being coplanar (Gehl, 1987).

Since the goal is to improve social relations among all people in the society and includes all classes of the society, one of the cases which should be mentioned and can be raised as a suggestion is applying the universal design rules. Also For this purpose, therapeutic group is mentioned. It means that we can alleviate some mental disorders by expanding and reinforcing human communication (Mohsenianrad, 1995). Based on our work with design in public places we suggest four design challenges that need to be considered when designing tangible, interactive, social and self-organizing systems for public spaces.

![Fig. 3. Five different means which the designers can improve the relationship between persons.](image-url)
Table 2. Results of likert scale across 80 participants (from strongly disagree = 1 to strongly agree = 5).

| Statement ID. | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree | Total participant | Likert Scale Data |
|---------------|---------------|-------|----------------------------|----------|------------------|-------------------|-------------------|
| 1          | 61            | 39    | -                          | -        | -                | 80                | 4.76 (SD 0.43)    |
| 2          | 37            | 33    | 3                          | 6        | 1                | 80                | 4.24 (SD 0.93)    |
| 3          | 53            | 22    | 2                          | 45       | 13               | 80                | 4.58 (SD 0.69)    |
| 4          | 36            | 38    | 6                          | -        | -                | 80                | 4.38 (SD 0.62)    |
| 5          | 1             | 12    | 9                          | 45       | 13               | 80                | 3.71 (SD 0.95)    |
| 6          | 4             | 12    | 22                         | 28       | 14               | 80                | 2.55 (SD 1.09)    |
| 7          | -             | 1     | 11                         | 17       | 51               | 80                | 4.48 (SD 0.77)    |
| 8          | 55            | 23    | 1                          | -        | 1                | 80                | 4.64 (SD 0.64)    |
| 9          | 42            | 34    | 4                          | -        | -                | 80                | 4.48 (SD 0.59)    |
| 10         | 45            | 25    | 9                          | 1        | -                | 80                | 4.43 (SD 0.74)    |
| 11         | 55            | 22    | 2                          | 2        | 1                | 80                | 4.64 (SD 0.6)     |
| 12         | 21            | 32    | 13                         | 13       | 1                | 80                | 3.74 (SD 1.06)    |
| 13         | 3             | 7     | 15                         | 36       | 19               | 80                | 3.76 (SD 1.03)    |
| 14         | 35            | 32    | 12                         | -        | 1                | 80                | 4.25 (SD 0.8)     |
| 15         | 48            | 29    | 3                          | -        | -                | 80                | 4.56 (SD 0.57)    |
| 16         | 60            | 18    | 1                          | 1        | -                | 80                | 4.71 (SD 0.55)    |
| 17         | 57            | 19    | 3                          | 1        | -                | 80                | 4.65 (SD 0.61)    |
| 18         | 23            | 29    | 20                         | 6        | 2                | 80                | 3.81 (SD 1.01)    |
| 19         | 20            | 28    | 26                         | 4        | 2                | 80                | 3.75 (SD 0.97)    |

Note: Only for statements ID.: 5, 7, and 13 due to different meaning of sentence, strongly agree = 1; agree = 2; neither disagree nor agree = 3; disagree = 4; and strongly disagree = 5 has been dedicated

According to the results in Table 2, the most people mentioned that communication and social interaction are the needs of their community and it leads to the expansion and evolution of culture also mention social interaction as a way to share their thoughts and feelings. In the reviewing of results, it is noteworthy, increasing the desirability of urban spaces lead to presence desire would be more thus interact with each other would be increases. One of the factors of desirability, increase the attractiveness of these spaces to create a distinct and enjoyable experience for individuals. One of the methods, designing urban space by using interaction design that identify and memorable this place with stimulation feelings by means of elements such as light, music and colour. Most of the respondents think some design items such as an open environment, orientation to others, short distances and being coplanar were efficient in improving relationships and interactions. Finally, as was proposed, an attractive and enjoyable environment is created by creating sociable space with the help of interaction design.

6. Conclusion

The most important means of social relationship is the space. In this regards, space could be at any scale from the largest one down to a specific unit, but apart from the scale, it should create social relationships. New developments in cities around the world, tend to return to traditional urban values and revive human measures; a human vs. cars campaign. As the main habitat of the human being, the urban space along with its surrounding are fundamental influencing factor in order to develop communication with others. This would also generate robust link between space and the sense of identity. Finally, the development of social relationships in urban scale should begin with careful attention to specific spaces by implementing using interaction design approaches.

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