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The Application of Tactile Experience in Urban Perception

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ABSTRACT: Urban perception is the result of mutual transaction between human and environment and the process of perception is developed through the three continuous steps of "sensation", "perception" and "cognition". In the first step (sensorial perception), the environmental signals are received via sensorial sensors and each different sense based on its own essence, performance and ability has its own specific contribution to develop the process of perception of the environment and replace the concept in mind. The sensorial experience made from these environmental perceptions will lead to better understanding and recognition of urban features and qualities. Different senses play different roles to enrich the environmental experience based on their depth and quantity. This paper aims at remembering forgotten distinguished values of tactility in perception of urban space and study is conducted using analytical method with an interpretive approach. The tactile senses because of their unique features like universality and diversity and experiencing the space without any medium and understanding the time and place are not emphasized much. The present study aimed to manifest the forgotten values of tactile sense and its efficiency in urban environment.

Keywords: *Perception, Sensorial perception, Tactile experience, Urban environment*

INTRODUCTION

Discussing about the human being and environment relation is taken into consideration by environmental psychologists, behavioral sciences researchers, urban designers and other related sciences. The urban designers attempt to enrich the quality of the mutual relation as their important responsibility in their job. Various studies have been done in this field. Some of the studies were on perception and the process of receiving environmental signals and the efficacy on receiving, perception and cognition of the environment. One of the most comprehensive perceptions is based on tactile experience while its significance in environment perception is ignored. The present study aimed to remind the position of tactile sense in sensory experience and its forgotten value in perception of urban environment in comparison with other senses.

This paper aims at representing forgotten distinguished values of tactility in perception of urban space. This study is conducted using analytical method with an interpretive approach. The "Findings" section compares analytically the characteristics of tactility with those of other senses, to answer this question: How does use of tactility experience help deeper and more complete perception of urban space? Finally, with division of tactility into two "Substantive" and "Procedural" parts, distinguished characteristics of tactility are introduced; and applied aspects of tactility in perception of urban space are explained, respectively.

Definition of perception: From biological views, perception is the set of mental experiences of the objects and events due to the stimulation of body sensory receivers. The current psychologists, consider perception as mental process being responsible for "the selection and organizing of sensorial information and its meaning as active" (Iravani & Khodapanahi, 2011, 10). This mental reception from the environment, is not accepted equally by a person and depends upon many factors including the experiences, mental

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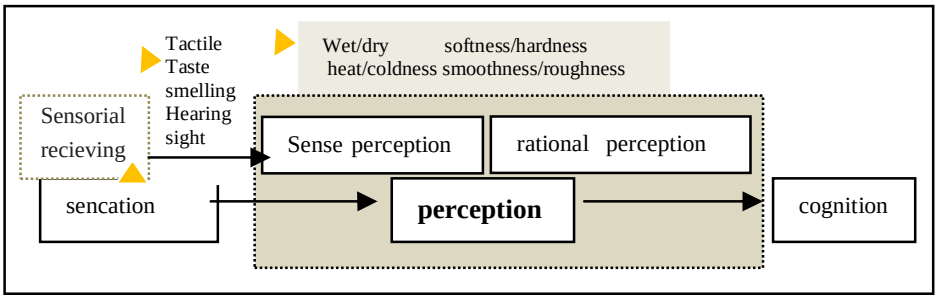

Fig.1: Perception process

imagination, social field and his education level (Cowan, 2008).In discovery of the vocabulary meanings, perception is "receiving and reaching puberty" (Dehkhoda,1940). In this definition, receiving is due to puberty and shows a kind of metamorphosis and internal growth of the one doing the perception. In the philosophical definition of perception, it is referred to "acceptance of the effect of the one doing the perception of the perception of the audience" and it is a new chapter about the perception….."The reality of perception is that the one who perceives is the same as the one who is the object of perception…... "(Sohrevardi, 1993, 409).

Sensorial perception: Sensorial perception is the first step in perception process occurring immediately after physiological feeling. As regarding the difference in perception steps, by using philosophical views, we can have a clear distinction of the previous and future steps in perception process and review them. Avicenna[1] considered perception as two general groups (sensorial perception (manifestation of tangible forms in senses) and rational perception (Fakhori, 1994, 480). (Fig1) To clarify the continual perception steps, the two first steps are explained in details.

Human being senses and environment perception: The main origin of perception is stimulation of sensory receptors. Human being senses as information receptors are important in sensation, perception and cognition and are considered as "knowledge gateway" of human being (Hall,1997). There are various views regarding the number, significance priority and application field of senses. Every thinking based on the type of views and thinking of the theorists. The philosophers consider formal senses (by which tangible features of a phenomenon are perceived) as 5 or 8 senses. Avicenna considered the senses based on the difference in their performance as 8 types but in the west philosophy considered them as 12.

Another classification that was referred by behavioral sciences theorists (Bell, 1999; Hall, 1997) was inspired by the philosophers in the west namely Kant. The classification was based on the distance of receiving the single dividing the sensory receptors into two groups:

Distance receptors: such as sight, hearing and smelling (considered as aesthetic senses by Kant);

Immediate receptors[2] such as smelling, tactile and taste (Hall,1997).

The distance criterion or the existence of physical media between the receiver and signal was considered by the philosophers and environmental psychologists and one of their measures was senses ranking. Based on the views of the philosophers, the most important reasons of distinction or priority of formal senses was difference in general features of the sense and its receiving by human being as : type of contact, extension of sense receiver and sense transfer method (light, sound). They ranked the senses order based on the presence of intervention or receiving or without it ranging from non-soft and compact to soft and complete as tactile, auditory ,gustatory , olfactory and visual (Faali,1997)

The collaboration of the senses: Perception is dedicated to the sense transferring the information to human being as visual or auditory perception. But human being sense is important in perception of a phenomenon at the same time (Naghizade, 2007). Although various senses have different effects, the environmental stimuli are perceived via different senses as related and united. This is what was called by Bashlar as multi-phonetic sensory perception"(Palasma, 2009). Indeed, a person sensorial perception is completed after the mutual action and environment perception experience is the result of the mix of various senses experiences.

The History of Application of Senses

The application of senses in development of human life and tactile sense as the oldest one is started and continues with olfactory and gustatory to help the person to be informed of environmental and auditory risks to receive the nature sound and it is completed by visual sense. This history trend of applying the senses in human thinking and wisdom is followed

differently. Based on historical tradition, visual perception is the basic sensorial perception and the first manifestation of thinking was formed related to visual sense. In the west, most of the philosophical writings of ancient Greece was limited to visual metaphors and knowledge is reduced to wisdom without any media. Plato considered sight sense as the greatest gift of God to us". By appearance of Humanism and dominance of human being-based thinking and perspective discovery, human eye as his existence was introduced as the central point of perception world. After that visual sense was considered by modernism views. "I am alive if I can see"(Le Corbusier). Later, visual dominance after the development of technology and propagation of images reduced the world only to image essence (Heideger). This was called by Italo Calvino as "images endless bombardment" (Palasma, 2009). After the development of modernity historical development, this view was changed completely and visual views were free from perspective philosophy of Descartes and it was changed into the main factor in evolutionary trend of modernity. Cubists replaced single focus point of renaissance with the visual points and by environment visual recreation from them, visual experience developed with tactile experience (Palasma, 2009). This integrative experience was observed in post-modern architecture in application of the levels with texture, waved and geometry strong volumes in the work of some architects as Frank Lloyd Wright, Alvar Aalto and Lui Kol and a kind of spatial poetic features were used in the architecture of Mayer (Palasma, 2009).

Visual sense is of great importance in the views of philosophers in the east. Avicenna considered visual sense as the most tender and complete senses and Suhrawardi[3] (Sheikhe Eshraq) associated perception with sight but there is considerable difference in these two views. Sohrevardi believed that visual sense includes intuition and presence and it leads into internal knowledge and intuitive perception[4] and this is the most important difference of Sohrevardi views in giving importance to the position of internal force in perception.

Today, visual dominance is moved to sensorial perception and its unwanted outcomes led in to a kind of retrospection and recalling forgotten values of other senses. Namely, tactile importance in sensorial perception field is emphasized more than visual sense and expresses its denied values". Visual sense tries to control everything but the tactile tries to reduce the distance and technical views of sensorial perceptions evaluates us with abstract order and separates from each other and by giving importance to sight and hearing, some senses as tactile, gustatory and olfactory cannot enter the collective knowledge (Palasma, 2009). The present study developed the application of sensorial perception in urban space and mentioned some features of each of the senses and its application and also its importance in recognition of the qualities of urban environment.

MATERIALS AND METHODS

The Visual Perception and Urban Experience

Indeed, most of the features of space as form, color, volume, size, and some qualities as beauty, order, coordination, balance, hierarchy and receiving the qualities of urban space as visual richness, diversity, imagibility and legibility via human being observation from the environment are in his knowledge field; most of the aesthetic features of urban environment were motion-visual and our visual experiences from the environment are formed as moving among the urban spaces. Some perception theories talk about the perception of urban environment qualities and environment priorities and they are based on visual receiving features such as Gestalt theory or Gibson ecological perception theory (Lang, 2009). Auditory perception and urban experience: In space perception experience, hearing presents different capability due to its comprehensiveness and definition of discrete voice space. "Voice space is bordered less and it forms the space (Carmona, 2006). One of the important auditory features is accepting the effect of voice from the environment. Manifestation of the voice in urban environment is an active reaction of the buildings that is sound echo. The buildings don't react to the seeing but they reflect our voice to our ears. Hearing via sound echo can identify the material and features of the cover, size and emptiness or full nature of the space and understand the environment quality better.

In greater spaces, the propagated voice in the environment creates special spatial experience via defining its unique auditory field such as the voice of the peddler who knows by raising his voice, he can control greater space. In the city streets by enriched voice environment, happiness is developed and the combinations of the voices show the spatial diversity and definition of continual sequences.

The echo of the steps on street is emotional because by hearing the sound echo from the neighboring walls is in contrast with the space. Voice measures the space dimensions and makes its scale understandable. However, this feature is rarely seen in the current cities due to the lack of control of urban space (Palasma, 2009). In our Islamic cities, voice of Azan reminds us of time, belonging feeling of the city and land to a great nation. The echo of alarm clock and Naqarekhane[5] of Imam Reza shrine reminds us of a kind of belonging to spiritual aspects.

The environment voice such as its visual view can be designed via the selection of urban wall materials and the nature of the existing objects in the space (see Rasmosen experience, Lang, 2009). The positive and beautiful voices in the environment such as water and waterfall sound as background voice can cover bad noises as traffic. If we accept that the related song is turning the kinetic energy of knocking on music instruments to sound energy, by designing the space and intelligent arrangement of the mass and space

and wind force, the song of a city can be composed. "What a village! its allays are full of music of wind" (Sepehri[6],1989).

Olfactory perception and urban experience: Smelling is one of the primary ways of communication methods and smelling organs are less controlled consciously. Although smelling has low density charge compared to other senses but its feeling is rich Smelling is less controlled but it is effect is deep. Smells are not classified despite activating the long-term memory. To recognize the smells, human being evaluates its bad or good smell or associates it with something with full description as sweet or bitter smell (taste), cold or hot smell (tactile), and smell of a flower (sight). The studies regarding the role of smelling in urban design verified the difficulty of the classification of naming in the smells[7] (Henshaw, 2012).
The selection of smelling experience is done when it is moved from one source to another one. Smelling sweet things as the smell of coffee, spice, etc in free air makes us happy. This diversity and change not only help us to locate people in the space, but also it is the spice of our life. Although using perfumes in the urban space eliminates the smell of public places and the smells will be the same in the air our life will be without any diversity and it is ambiguous in the mind (Hall, 1997).
Maybe, our inability in classification of the smells leads to ignoring its quality in urban environment and not considering the design of smelling space. While in a creative approach, like auditory and visual space, by selecting the type of vegetation or distribution and combination of the smells, the various smell space quality is created for an urban space to fully understand it. In the past by Rosewater (Golab) and Amber[8] by motivating the different sensorial experience spatial sense was emphasized on. Sometimes a specific smell makes us enter a space that is forgotten for a long time in our visual memory.
"Still the merchant from Yazd beside spice road gets unconscious by the smell of Indian spice" (Sepehri, 1989).

Gustatory perception and urban experience: The importance of taste sense in perception of urban environment is ignored mostly as in most of the classifications, and the role of taste in creating sensorial experience of the environment is ignored (Hall, 1997; Carmona, 2006; Lang, 2009).In most cases, in giving address or searching the locations, the favorite restaurants and coffee shops are used; The places in which we used our taste sense and they are the anchor point in our mind. The study regarding the receiving of mental views of the citizens of urban space showed that after form, the important point beside other aspects in cognitive maps is associated with taste sense motivation as restaurants and coffee shops. Our memories of urban spaces are with pleasant taste of something as "ice cream taste in the upper floor of Mina Restaurant in Arg Street" [9]. And using taste sense in urban space at the same time with leisure time took the attention to the environmental features. Our good memories of good urban space are completed with the sweet taste of what we ate or drank.

Tactile: It is the primary sense and the mother of all the other senses. Most philosophers explained tactile as "the first sense as we need it more and it is observed in all our members" (Molasadra, 2001). Avicenna divided tactile sense into four groups due to the difference in the type and nature of the sense[10]: 1) Heat and coldness, 2) Wet and dryness, 3) Softness and hardness, 4) Smoothness and rightness and in Danishnameh-yi Alai[11], heaviness and lightness was added and the number of sensed objects were 10. The psychologists define tactile as a set of some senses of temperature, pain, pressure and the related feelings as rash and tickling and considered mechanical, chemical and thermal energies as the stimulus of tactile receptors. Also, way finding sense is defined as the combination of tactile and sight.
Skin is the direct and indirect receptor reacting to different physical stimuli. All the senses are additional with the tactile system and are dedicated to skin membrane. The tactile receptors besides the identification of the nature of the objects, receive intensity and location of feeling on the body. Tactile via active touch of the objects (touching the surface) can identify the complex objects well and it is tactile perception. Tactile sense also transfers the pressure and trembling and information of the type of covering of the surface and the form of the objects. Tactile model of alphabets are used to teach the blind in brail alphabets (Coren, 2008).
Tactile guesses the form and size of the objects by deeper receptors than skin as muscle, bone, tendon and joints. These receptors are kinetic receptors or depth receptors.

The Distinctive Features of Tactile

Antiquity: The tactile systems are used for a long time. This sense is mostly applied in receiving the environmental awareness.

Comprehensiveness: The sense organ is located in all parts of the body and there is a variety of receiving perception experiences and it makes tactile system more comprehensive.
Interactive: The experience of action (touch) and the reaction (to be touched) is created in tactile perception. "It cannot touch without being touched".

Personal receiving: Tactile perception is completely personal compared to other senses. The most private moments in the life are with the changes of skin tissues.

Direct transfer: Direct contact with the object is only observed in tactile sense and this relation is obvious.

Acceptance: Direct contact increases the quality in this feeling and it is an evident effect of the stimulus. This acceptance is one of the distinctive features on which perception definition is based." When the skin is in contact with the object, the change is made due to the quality of the object and touching feeling occurs" (Molasadra, 2001).

Tactile perception and urban experience: All sensorial experiences of us are some manifestations of touching and they have close relation with tactile feeling. Skin is the first media of communication with the environment and is the effective protector. Even cornea of the eye is composed of a changed layer of skill. Our skin is the border of our contact with the surrounding world. Thus, urban skin is a good cover to transfer the signals. As the external manifestations and signals on the city skin and its walls show the personal history and group history of the spaces and the passage of time (Diaconu, 2011), the most fundamental interpretation of the city and space is done via tactile (Palasma, 2009; Diaconu, 2011 ; Sasaki, 1998).

Thus, the important condition of perception is the acceptance of the effect of the one who perceive of the one being perceived. As it was said, "as the form of the object is presented as it was, it is formed by it and it is similar to it to be united and unity is the aim of perception. " Thus, plenary perception of urban space requires unity with the environment and it means to be a part of its components, (in its physical meaning) is formed in tactile experience. When due to the temperature change or touching a cold or hot object, when by pressing the hand or body on a surface of rough wall, its trace is on our skin, or when the body is formed when sitting on the bench in the street, all show the unity of the body with the city via touching. This unity is a complementation with urban space creating high level of structural order (Salingaros, 2006).

The relation of the body with urban space: 3-D receiving of the space is done via its presence in the space and creating the relation of the body with the environment. "My body is the center of my perceptual world. Body and world image perception turn into the continual existence experience (Palasma, 2009) and any person is faced with the city with his own body and the length and width of the spaces are measured by his body.

The measurement of the space with the body and scaling based on human being measures is one of the effective issues in space dimensions perception taken into the attention of architecture and urbanism. In our tradition, the space is measured by span (palm) or steps and it is a kind of coordination of the environment with body scale and show a kind of hierarchy perception of the scales and distances. In a full space with structural order, a person can communicate in any distance with the components of a space correspondent with all the structural scales of human being: Total body, length of the arm, one leg, one hand, the width of a finger (Salingaros, 2006, 91). Human being has mutual speech with his objects and natural objects with geometrical microstructures. The exact reasons of formation of the sensitive speech are unknown. It can be said that this issue is related with the close correspondence of the body scales and is affected mostly by tactile sense. Tactile helps us to communicate with the smallest scales of a building and space (Salingaros, 2006, 166).

Heat and coldness: Based on his sensory states or emotional cases, human being via skin temperature change can receive or send the signals well. The body heat is a personal case and as the childhood experience, it is associated with the intimacy and link (Hall, 1997). The temperature change creates a completely personal feature of the space. Transferring environment heat to the body is provided only via touching or presence in the space. Light and shadow games in passing the old bazar and tents (Sabat) besides visual diversity manifests the continual quality of environment from heat to coldness and vice versa via tactile. This spatial continuance in passing the old allays of the hot climate is by passing between the open and close spaces of alley to Vestibule, to the yard and then the house and thermal exchange showed a kind of spatial hierarchy.

Dryness and wetness: The humidity in the urban space can be via the presence of water as water fountain, pool or fluid flow of water in city channels or raining that is received via the skin. In our country, raining and water are the grace of Allah. Raining presents new spatial qualities. Today, despite the application of different technological equipments in control of temperature and humidity, raining as a sudden showering show the vulnerability of human conditions before the nature and it shows that tactile cannot be expelled from the city. Raining violates the formal rules and shows the new interactions (Diaconu, 2011).

Softness and hardness (surface flexibility): Major part of the flexibility quality of the surface is perceived via the roughness of the land in urban passages. The pedestrian movement is as the result of mutual reactions of physical contact with rough topography of the city and it led into the tactile experience and it is the deepest knowledge of natural ground of the city. "Sometimes the injury in my feet, showed me the ups and downs of life" (Sepehri,1989).

In the current technological competition world, the cars are selected with the lowest movement of the driver and this means the lowest contact with the road and knowledge of land physical quality while what is enjoyable about diving in the nature and rough roads is the contact feeling with the road and receiving natural qualities of the land. The feeling

makes driving in the narrow alleys of urban organic context to a pleasant experience.

Here, tactile presents itself with multidimensional interaction of the body with physical conditions of the action personality." City is a 3-D space for life. Wide, direct and endless streets invite you to the stop less passing but narrow and spiral streets invites to standing, bending, sitting or wandering indicative of perception with strong comparison with tactile experience (Diaconu,2011).

During wandering the continual diversity of motional-tactile perspectives enrich the 2-D experience of the space. The experience with the discovery of the depth and height of 3-D space of the city (Diaconu, 2011).

RESULTS AND DISCUSSION

Tactile perception based on different types of space experience is divided into four parts:

The perception of visible tactile qualities (2-D);
The perception of touchable tactile qualities (2-D, 3-D);
The perception of the depth and height in urban space (3-D);
Endless perception of time experience (fourth dimension).

Observable qualities of tactile: Spatial receptions of sight and tactile senses are linked together closely. The perception of tactile visual qualities is occurred mostly in facing with the quality of texture surface and it is including the qualities associated with surface visual perception not its tactile perception. When it is said heavy texture make the space smaller and hot, or the spaces with light and smooth texture seem greater, it is discussed about its visual perception qualities arising from reminding experience of tactile and the main texture quality is reduced to its visual features.

Direct touch: The majority of our tactile experiences in urban environment are achieved via the feet, back and our hands to take step, sit or touching the city skin. We feel the density and land texture by the bottom of our feet. Today, new achievements of technology have different qualities in covering surface and the designers should consider the diversity and use the different perceptual experience quality for the users of space. This diversity and tangible combination is used in creation of various spatial qualities and another application is the design of floor construction paths of the blind.

Skin recalls texture type, weight and density and temperature of the surfaces. Sometimes a special texture for the cover of a space motivates the pubic inclination for touching. The surface of an old object that is shaped by the skillful hands of a person invites the hand to touch it. This sensation is experienced by touching the holy object. When a pilgrim respond to the internal voice via touching the holy object skin and its kissing is the peak of touching; A kind of turning profane to holy thing that is provided via direct contact and is observed in all religions.

Spatial depth perception: Receiving the spatial depth and distance is not possible without tactile. It is said that tactile is the only sensation that can gives us a deep spatial perception. Because tactile can feel the weight, stability and gestalt of the object and it informs us that objects are developed in all directions (Palasma, 2009). This feature is observed in comparison of our receive of the image of an urban space and presence in that space". By viewing the image of a space, rarely we can experience the complete awareness of an urban view. A photo is only a visible frame of the view that is really exist and neither the object itself and its difference can be arising from the difference of the perception of 2-D and 3-D. The deep and real experience is occurred when the image is supported by tactile sense and a photo only transfers a theme of urban view messages (Sasaki, 1998). The people who go to Mecca for the first time understand considerably about the difference of real space perception and the previous mental perception. As their mental experience is reliant upon visual perception of watching the images being seen already and are different from the space reality.

Time perception: Time perception in tactile experience is done via two ways: First perception of the past time via recalling the time passed and another one perception of the present time with motion in the space.

Recalling the time passed: Our tactile sense links us with the past; The link between us and our ancestors and the past of our cities. Touching the stone that is enjoyable not only due to its gradual forming process but also by smooth waves to comfort us and turning the handle that is polished by thousands hands before us (Palasma, 2009). By touching a wooden bench, we experience every components of it. For full tactile perception of the object, it is detailed perception is necessary. The moments in which the meaning of time and motion are perceived at the same time (Diaconu, 2011).

"The skin on the objects is the result of the close relation of materials and time and touching a surface shows its time depth. In the old features of a city skin, the passage of time is recalled. The manifestation of touching climate, people and history is repetition and repetition. This repetition besides recalling time shows reliant depth to our perception of the space. Old features turn the architectural skin of the city to cleaned and rewritten writing decoding the past of the city (Diaconu, 2011).

Time and movement: Another type of time perception in the space is occurred by moving among the space. Physical movement in the environment is the essential component of tactile sense. The perspectives show the environmental awareness (Diaconu, 2011). The perception of movement is shown in Gibson ecological approach (Motallebi, 2001). In

this approach, besides using the senses, the perceptual view is of great importance. In motion, a person structure is changed. A person to discover the small details of various fields of the materialistic world discovers the world by moving the eyes, head and body. In this motion, continual corresponding is perceived. The experiences of Gordon Cullen in perception of continual views in the space are the examples of this type (Motallebi, 2001). In motion, the observer recreates a new perspective. The flow in which a person and environment are changed continually and a new view of the environment and new quality are generated in a person perception. This is new creation called by Molasadra Shirazi "The world is created as new each time, he considered the world as the manifestation of the essence motion that is not created at a moment and forever but it is created every moment and this gives unique depth to perception. The endless trend of perception evolution is continual and it leads into the unity of person and space. A person can think that urban spaces get the meaning by his presence (Table1 and Fig. 2).

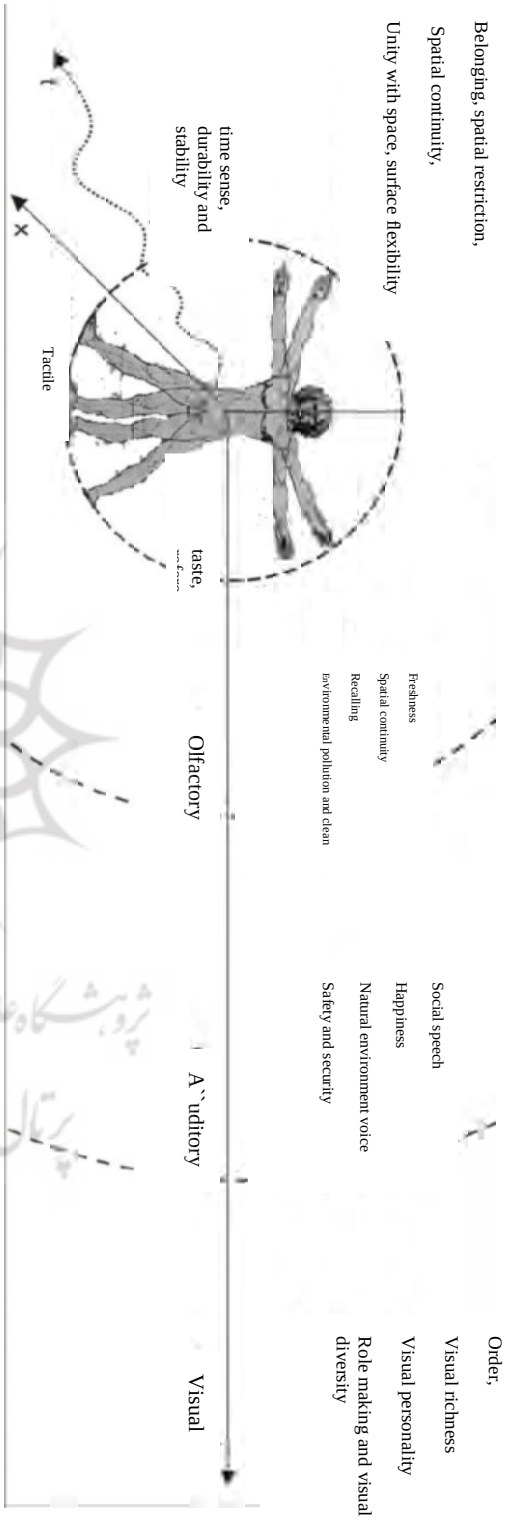

Fig2: The scope of spatial qualities perceivable with senses

CONCLUSION

The findings show that, compared with other senses, sense of tactility has distinguished and important characteristics, which can influence extending and deepening perception of urban space. These characteristics are divided into two parts: first, "substantive part" which refers to tactility nature and introduction of its exclusive features (Table2); and second, "procedural part", which refers to applied aspects of tactility experience in the perception of urban space(Table3).
Substantive aspects of tactility features include:

Table 2. Substantive aspects of tactile

Substantive aspects	Antiquity Comprehensiveness Interactive Acceptance Direct transfer Personal receiving

Procedural and applied aspects of tactility in space perception include:

Table 3. procedural aspects of tactile

Procedural aspects	The perception of tangible tactile qualities (2-D) The perception of touchable tactile qualities (2-D, 3-D) The perception of the depth and height in urban space (3-D) Endless perception of time experience (fourth dimension)

Table 1.The comparison of the features and qualities of five senses

Perceptual system	Sensory organs (receptors)	Receivable information	Transfer type	Affectivity of sensory member	Affectivity of environment	Scope	Action type	Depth and direction of space perception	Perceiving qualities of urban space
Visual	pupil	Light, glittering of color	Media (light)	Open and close pupil	Perspective definition	General	Controlled action	Directional view	Color and form, volume and size, diversity, visual richness, visual coordination,imagibility, visual personality, consistency with nature
Auditory	External and internal ear	Sound(type, direction, distance, source, speech)	Media (sound)	Stimulating hearing receptors	Echo	Public	Reaction	All directional hearing	Depth and distance, full and empty, quality of wall covering, social interaction, rush hour and traffic, vitality, security, sounds and names, natural environment sound, vibration, immediately
Olfactory	Smelling cavity	Smell direction	Media (air)	Nose mucus stimulation	Smelling field definition	Semi-public	Reaction	All directional taste	The presence of natural elements, freshness, environmental pollution and cleanness, memory and sense of place, spatial continuity
Gustatory	Tongue surface and mouth cavity	Taste and flavor	Media (mucus)	Stimulation of taste buds	-	Personal	Action	Concentrated tasting	Space taste, anchor points, identification of mental reference points
Tactile	The skin of all body surface	Temperature, humidity, tissue quality pressure, pain, tenderness, rapidness, intensity speed	Direct	Deformation, color change and skin tissue, physical and chemical changes of skin	Presence, objects transferring	Fully personal	Action and reaction	All directional access	Environment temperature and humidity, wall material, total volume depth of the element and details, passage of time, belonging feeling, important role, history and the past, restriction, surface flexibility, public arts, durability and stability, continuity of motion, hierarchy, climatic comfort, fourth dimension perception

Perception has interactive nature in which the environment and a person complement each other. The environmental experience as the result of this process is meant via receiving the senses and using the qualities of sensorial perceptions and synergy of the senses together. The urban experience can be enriched, by developing urban space methods to achieve an enriched situation full of features and qualities to be experienced and reach the goal of urban design in managing the collective memories of the society and citizens.

For full understanding of an urban space, we should be present in it repeatedly and touch it at different times and give the opportunity to all the senses. . This is the real need of the current cities. The cities without various sensory experiences and the temporary spaces take out our opportunities for presence, review and receive the full qualities. Via multidimensional aspects of space experience, the city flow can be accepted deeply every moment and the depth walking in our skin is like the swimmer who feels the water flow on his skin.

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ENDNOTE

1.Avicenna was a great persian philosopher in Medieval era (Islamic Golden age).

2.immediate receptors, distance receptors.

3.Shahab al-din Suhrawardi(1155-1191),was a persian philosopher called sheikhe eshraq.

4. intuitive perception as the result of intuition was developed by Sohrevardi (see the author thesis).

5. Minarets of the shrine of the eighth Imam of Shia, that are played some sounds on special occasions.

6.Sohrab Sepehri (1928 –1980) was a notable Persian poet and a painter.

7. See the research of Victoria Henshaw in the role of smell in urban design.

8. some material with natural origin was used for pollination scent.

9. the sense 9 The final project of Fateme Khoshsima titled "The study of mental image elements in urban space (Taqiabad of Mashhad square), supervised by Maryam Ostadi.

10. As the four verbs that are different in nature, exist in tactile, we should refer to four different powers as they are collected in one instrument. While these verbs are four types of verbs associated with four powers not one power.

11.Danishnameh-yi Alai , the book that Aviecenna wrote in Pure Persian language .

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