The Relationship between Urban Sidewalks Design and Psychological Sense of Security

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ABSTRACT: One of the basic and important concepts in sustainable development is taking human needs into consideration and meeting them. Security is one of the most basic human needs, which in effect will lead to progress. Urban traffic is one the causes that put a psychological pressure on people and threatens the psychological sense of security. Today the fact that many people don't use the sidewalks in streets and alleys is a constant psychological pressure both for the pedestrians and for the drivers. Studies show that such constant pressures can lead to serious psychological and mental problems. There are many reasons as to why people avoid using sidewalks for example poor flooring, uneven surfaces, natural and artificial obstacles, the disproportionate width of the sidewalks in comparison to the crossings, failure to take into account the human scale and the importance of viewing angle and the issues of visual perception and so on. In this article this issue is viewed from the pedestrian view and guidelines to solving this problem are researched. To this matter the method of research is combinatorial investigation. The results of the survey showed, that in short distances people over the age of 40 show more interest in a stroll than people under the age of 40. The superficial beauty of sidewalks was evaluated of much importance to both groups. The issue of uneven surfaces was the first priority for the group of over 40 and for the people under the age of 40 the problem that took priority was the width of sidewalks. Taking into consideration the results of both the descriptive and survey research the comfort level of pedestrian pathways were researched and presented.

Keywords: Sustainable Development, Psychological Sense of Security, Psychological Pressure, Sidewalk, Pedestrian Pathway, Human Scale

INTRODUCTION

Stability, as a key word in mainstream social, environmental and economic thoughts, counts as a relatively new concept, and as such, may be interpreted in various ways based on personal believes knowledge and political outlooks. But the fact remains that every outlook towards sustainable development alongside numerous other outlooks is credible. Since there are verities of lifestyles in different communities as well as lots of different preference in different countries, there cannot be a single definition of sustainability concept that attains all Opinions and expectations. In general Stability has key properties that will be mentioned as will follow:

✓Trans-generational justice and justice between two generations

✓Protecting and living in the ground Capacity of the transition possible environment

✓Minimizing the usage of Natural resources

✓Adequate providence of basic human needs (Krizeck and Power, 1996, quoted by Behzadfar and Habibi, 2010 (RIC)).

People shape the place where they live to be molded to their acceptable behavioural pattern. The environment also effects the emotions and the behaviour of people by effecting activities and creating significant sense. A stable environment is where human needs are provided for. If this doesn't happen an environment will be either abounded or changed. For an environment to remain there is the need of stability, so it's of utmost importance that human needs be attended to. Humans are complicated creatures, who have different materialistic and Spiritual motives. Motive is a leading force and institutor of Perception, cognition or Purposive actions (Motalebi, 1996). Actions also play roll in satisfying human needs. To this point understanding human needs is of utmost importance for environment designers. There have been various models of human nature in an attempt to understand these motives and needs in both psychology and social sciences presented (Stringer, 1980, Herzberg, 1966; Jung, 1967; Michelson, 1970; Spivack, 1974; Murary, 1983; Simon, 1957; Cantril, 1965). These models have been noted in environmental psychology, architectural designs and urban designs. But architects need a model that displays the complex that is human behavior in a systematic arrangement (Motalebi, 2001). Maslow (1968) humanistic psychologist presented a model in human needs and motives, (Image 1) which is considerable. (It should be studied further) Studies on environmental psychology and architecture theories have proven that his model can be used in architectural designs as well as in urban designs (Motalebi, 1998; Lang, 1987).

In Maslow's Classification of necessities, safety, after physiological needs, is in second class of humans

most basic and most important necessities. Understanding and being able to use what our environment offers is of the most important necessities to ensure safety. If safety is not provided the mind won't be able to concentrate on other matters. These needs originally begin with feeling of being in no immediate danger (Pakzad, 2010). Maslow's theory says that people need to have their basic needs taken care of in order for them to tend to their other needs such as falling in love, having confidence in one's self or having high spirits. It's just natural that having concerns regarding safety and security at all times puts people in different kinds of danger. Satisfying human needs, According to Maslow, is one of human motives that need special attention. These motives can be either materialistic or moral. It's changing these motives that give meaning to our surroundings or make it meaningless and let it fall into destruction (Motalebi, 2001).

Many theories and studies of psychology, social science, political science and management, including Fromm (1941 and 1955), Allport (1961), Horney (1939, 1942, 1945, 1973), Maslow (1942, 1952, 1967, 1968, 1969, 1970), Laing (1984), Mroz (1980), Louw (1978), Luciani (1989), Trager and Simoni (1973), Wolfers (1962), Buzan (1991) and Mandel (1994) have confirmed the necessity of safety as a very basic human need. Satisfying the need for safety has a positive mental effect that gives people a sense of bravery and Audacity (Maslow, quoted by Rezvani, 1996). In addition, insecurity creates constant anxiety, public apprehension, and agitation, lack of sleep, uneasiness and angst regarding possible incidences. Insecurity can also force the body to gather all of its energy and cause the disruption of metabolism; should this state continue it can cause physical as well as mental illnesses (Delavar, 2005; Shamlou, 1984).
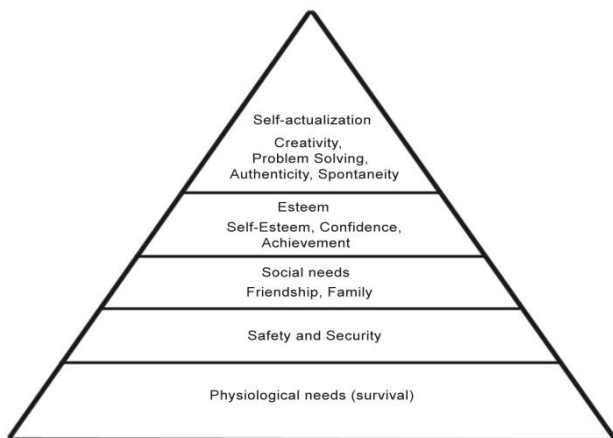

Figure 1. Maslow's hierarchy of needs (Maslow, 1968)

Safety is a subject that psychologists insist is very important especially in Mental Health and Psycho-pathology. Peace of mind, growth, flourishing of human creativity, development of human potentials and all human perfection is only achieved in light of security. Security is one the most important spiritual needs that is the most important purpose of life and the very essence of health (Fromm, 1941). In many definition given to this day, the emphasis has always been on the relation between humans and the environment and scholars in this field have indicated that the point of the studies on the subject of security is to promote the quality of social life (Hendiani and Rostami, 2009), public security is also one the potentials that our environment offers (Lang, 2004).

MATERIAL AND METHODS

Sense of security

Probably even until these past decades social intellectuals didn't differ between *security* and the *sense of security*. But today it has been proven that mental aspect of sense of security has an undeniable importance that can't only be submitted to security indicators (Delavar, 2005). Giddiness in his definition of sense of security says: "when a person knows how to continue what he's doing and is occupied without any gaps or problems, he is in a mental and psychological state that is the sense of security. If this person is utterly unable to continue his work, he will feel helpless, anxious and insecure" (Stones, 2000). According to Horney, being secure means that being free of anxiety (Landine, 1999). He also believes that sense of insecurity causes psychological disorders more than anything else (Bayat, 2009) sense of security characteristics are as follows:

- Mental sense of security, which in itself cannot be defined and can only be defined based on the presence or absence of danger.

- Sense of security is a process that through time and depending on the dangers at hand changes.

- Mental aspect of sense of security is more important than the Objective / tangible aspect.

- Sense of security defines our cognition of the environment and sets the very base of human perception. (Salehi Amiri and Afshari Naderi, 2010)

Researchers have distinguished three major theoretical approaches in the analysis and the cause for the phenomenon of sense of security. The first approach is known as "Vulnerability" physical, mental or economic vulnerability. The second approach comes with the title "crime experience" either direct (as in victim) or indirect (through friends or social connections or the media). The third approach is "the local society and physical environment" as potential source that can cause a sense of insecurity, like the focus on physical disorder and lack of social cohesion as a source of creating angst and insecurity (Hosseini, 2007). This Article is consistent with the third approach.
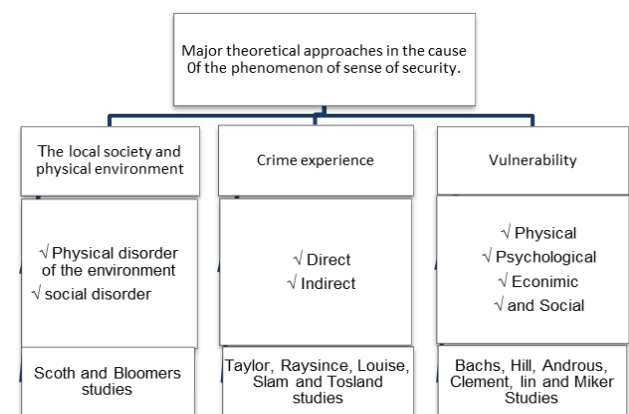

Figure 2. Major theoretical approaches in the cause of the phenomenon of sense of security (Adopted from Shahivand et al., 2011)

As was observed our physical as well as our social environment can be effective in creating or eliminating the sense of security. Jean Jacobs in her book "the death and life of great American cities" points out the subject of Security and the Restrictive Factors in districts and cities. She states that in the outset, peace in the city isn't provided by the police force but their presence. The cities' peace is kept manly through the complex subconscious social network and the existing standards between people. She explains the fact of a self-policed street: "there should be always eyes on the streets, the eyes that we name the real owners of the streets. Sidewalks should be constantly in use, so that the number of observers is increased and Supervision techniques should be thought to all citizens" (Jacobs, 1961). What is easily witnessed in Tehran is the lack of usage of the sidewalks.

RESULTS AND DISCUSSION

Outdoor activities in public spaces and its relationship with artificial environment

It is obvious that people are constantly in connection with public spaces for their daily routines. Human activities can simply be arranged in three groups: necessary, optional and social activities, each of these require different characteristics in artificial environment (GoleIyan, 1987, quoted by Shasti, 2008).

- **Necessary activities:** are more or less mandatory. (going to school or to work, waiting for the bus or someone in particular and so on) In other words, activities that a person has to participate. Daily activities in general are categorized in this group and these activities include activities that require a walking. These activities are necessary and are done throughout the year.

- **Optional activities:** are done only if there is an inclination for them and the time and place are provided. For example a sidewalk where people could get fresh air, where they could watch the vibrant life as it goes on or just sits and enjoys the sun. Such activities are only done if the outside environment is favorable and if the environment and the weather are inviting.

- **Social activities:** more than any other activities are dependent on presence of others in public places, like children playing, meetings and chats, different group activities or the most common of social activities like simply watching people or listening to them. Such activities happen in all kind of public place for everyone. These could be called resultant activities since they are a combination of different activities. This means that anyplace, where both necessary and optional activities have the grounds to be carried out, social activities are supported (GoleIyan, 1987, quoted by Shasti, 2009).

	Low Quality	High Quality
Nessesary Activities	●	●
Optional Activities	⬤	·
Social Activities	●	•

Figure 3. The relationship between Quality of physical environment and human outside activity (GoleIyan, 1987)

As it was mentioned above necessary activities include most activities that require lots of walking and are done throughout the year. People are always in connection with the world around them. A relationship that occurs through the exchange of information, transmission, and the ability of being influenced and so on. An urban Space consists of physical factors (Artificial and Non-artificial), Non-physical (regional and non-regional) and human activities (Pakzad, 2010) Architecture in comparison to any other field, in an artificial environment has the most direct effect on human kind and their activities. The mind establishes a mental connection with its surrounding environment and determines the structure of stable physical connection.

It offers and understanding of the complex information network about the environment and so gives people strength and power. On the other hand facing something that is so disconnected that isn't easily understood and only results in more anxiety for people. (Saligrose, 2006, quoted by Zarinmehr and Motaki, 2008)

The most important part in a person's connection with he's surrounding environment is the environments emotional and excitement quality. Even after people leave a certain environment, it can affect their behavioural pattern, and the effect of behavioural pattern on the emotional memory and sense of responsibility and creativity has been proven (Mc Andrew, 1992, as cited by Mahmoodi, 2008) Excitement consists of behaviour, physiological changes and mental experiences, Agitation, control and satisfaction are three excitement factors that best explain an excited reaction to environment and different occurrences. The Three- factor theory of emotion which was introduced by Albert Mehrabian and James Russell is as follows (Mehrabian, 1976):

People have different reactions to an environment. Based on this theory it seems that the aspect of satisfaction and dissatisfaction, agitation and contentment and control and obedience is beneficial in predicting environmental behaviour (Mc Andew, 1992, quoted by Mahmoodi, 1999). The three- factor theory of emotion is appropriate in predicting people's reactions in big environments, people's preferences and special stuff. Every environment stimulates people's visual, auditory, or tactile senses. These sensory data might be intense, varied, average, or recurrent. The traits, intense environmental data (high level of sensory stimulation), freshness (being familiar with the data their receiving) complexity (this need in better understanding our environment) has an effect on the environmental load (the amount of data that the environment provides) (Merabian, 1976).

People are in constant contact with their artificial urban environment both for their necessary and mandatory activities, and are constantly affected by it. The environmental load that each environment has is different. It can affect people's behaviour pattern and their state of mind. There for the design of different urban components should strive to have a positive effect and to have a calming impression as in creating more stress and being inconvenient. This will be even more important in relation to necessary activities.

Because people aren't very effective in choosing their living environment, and as required they engage in appropriate or inappropriate in conditions and since these activities are continuous and repetitive their effect lasts

longer. As it was mentioned above, most necessary activities involve walking and so the environmental impact on these kinds of activities is evaluated in present paper.

Psychological pressure caused by in city coming and goings

Psychological pressure creates this unconscious impulse to flee when confronted with any kind of demand and causes aggression (Quick and Quick, 1984). Also complex emotional behaviour pattern, physical reactions and relevant thoughts occur in response to psychological pressure (Greenberg and Baron, 1996).

Everything that an environment demands, are factors resulting in psychological pressure that cause an adaptive response influenced by people's different reactions. Cohen (1980), Mechenick (1978), Seligman (1975), Shroud (1974) and Stockholm (1972) believe that sometimes it seems that the environment is uncontrollable and unpredictable and the reaction to this kind of psychological pressure sometimes causes this feeling of helplessness and the inability in adapting to one's environment (Mc Andrews, 1992 quoted by Mahmoodi, 2008).

Most residence in Tehran faces these kinds of pressure every day. Although these kinds of pressure seems to last only for moment, the effects lasts longer and should these pressures occur on daily bases they can result in serious issues. In this research the focus is on the pressure that people on foot face. This issue has been argued by various researchers from both viewpoints: of public transportation staff and individual drivers, issues such as heavy traffic, inconvenient and insufficient and so on. In this paper the focus is on the pressure that people face while walking in streets or urban pedestrian areas and their different reactions. Sometimes people's reactions affect not only themselves but other pedestrians. For example a person who chooses to walk on the side of a narrow street instead of walking on the sidewalk puts an additional stress both on the drivers as well as on themselves. These issues are discussed in more detail below.

Psychological pressure invokes an active aggression and passive evasion in people (Slay, 1974). People exhibit different reactions to various psychological pressures. In this context Slay (1956) has presented one of the first general descriptions on the body's reaction to psychological pressure. What he called the general adaptation syndrome has three stages. The first stage is a general warning and agitation that invokes the fight or flight motion in body. This physiological state of agitation is measurable with conventional techniques such as heart rate, respiration, blood pressure, muscle tension and skin conductance.

This state however lasts a short period of time. After that the second stage begins with fatigue, depression and illness. Should psychological pressures be continuous man reaches the point of complete exhaustion (the third stage). Prolonged psychological pressures may result in illness and physical complaints ranging from high blood pressure, psychological problems, such as substance abuse, depression and personality disorders (Mc Anrew, 1992, quoted by Mahmoodi 2008).

Figure 3 and 4. blockage of the sidewalk
Figures 4 and 5. No sidewalk!

Psychological pressures that people face every day in the cities can be harmful and destructive. Although, this matter gets little consideration potentially; this matter is mostly discussed from drivers' point of view. For fifteen years psychologists have studied the relationship between psychological pressure and traveling back and forth to the workplace. Studies show that problems while traveling back and forth raises the blood presser, causes negative feelings and reduces ones failure tolerance and life satisfaction. Problems while traveling in city is intertwined with constant headaches, common cold and influenza and reoccurring absence from work (Mc Andrew, 1992, quoted by Mahmoodi 2008).

The necessity of considering human needs while designing sustainable urban spaces

Urban spaces are places that belong to the general public and are not limited to the physical and non-physical aspect and indeed find meaning solely with human presence. In sustainable cities the harmonious connection between buildings, roads and open spaces and in other words the integration of single scale design and urban design as an important factor in building a sustainable city (Kashani Joe, 2010). Nowadays large cities such as Tehran streets are basically a big parking lot and precious hours of human life is wasted sitting in long distances in streets and highways, while all the sidewalks are almost empty. Constantly using different transportation means while walking less and less has caused various issues such as air pollution, noise and loss of landscapes and beautiful sceneries (Visual pollution) (Gharib, 2004; Soltan Hosseini, 2011).

To find a solution to these issues urban designers started collecting main urban components in these societies and it became known as the "new attitude-based urbanism" movement which is subset of sustainable development. In this movement people and their needs take priority in its programs (Ibrahim pour and partovi, 2006).

One of the key points in the "new urbanism" movement is creating urban spaces so that people are able to walk a certain distance to obtain necessary provisions and for their daily activities (Soltan Hosseini, 2011). In this movement the sense of security, comfort and convenience and satisfaction are important and the emphasis is on mental and physical health. Unfortunately this type of urban planning is still not a priority in our country's urban planning.

Figures 6 and 7. walking on the sidewalk that seems inconvenient rather than walking on the street which seems easier

Pedestrians and pedestrian sidewalks

As was mentioned above most necessary activities require walking. In streets and urban spaces with low quality design the least amount of activities will occur and people will go back home as soon as their done, but in a good and completely different environment a wide range of possible human activities could be performed (GoleIyan, 1987, quoted by Shasti, 2008). How much people go for a stroll in their surrounding area is one of the determiners of their quality of life, and as sir Colin Buchannan says:" the position where people can walk freely in the city and take look around, is an indication of quality of life in that area" (Tibaldez, 2006). Walking is one the most basic kind of transportation, and it doesn't require any tools or external instruments.

Walking also can be considered a complex activity that affects not only the body but also the mind. Walking is the best way to see different places, activities and feel life's energy and the passion for life and to discover the city's hidden attractions. It's especially important in understanding the environments characteristics and having this sense of belonging toward our environment and to realize its beauties (Pakzad, 2006; Saghafi Asl, 2008).

Sidewalks are a part of urban spaces that because they have certain capacities and do not allow vehicles, are spaces are allocated only to humans. Sidewalks are not only one the most important urban spaces, but basically their essential to the continuity of urban life. That's why sidewalks are what make a city memorable and gives it a special character (Kashani Joe, 2006).

Paying attention to the of qualitative and quantitative factors of sidewalks which are defined by passersby (humans) and passing time and in relation of existing space, will create the desirable pedestrian pathways. People should be able to move easily within their rout. Pedestrian pathways should be more desirable than any other transportation (Saghafi Asl, 2008, 79-87). To build the most desirable sidewalks considering these points is important.

- **Easy navigation on pedestrian sidewalks:** proper flooring, resistant floor coatings against climate factors, and smooth sidewalks without bumps and up and downs, etc.
- **Ensuring people security:** eliminating hazards and obstacles in the path, ensuring that motorcycles aren't able to move about on the sidewalks, the lack of natural and artificial barriers on the sidewalks,
- **correct orientation**: the Readability of signs for navigation, considering the pedestrian's visual field and lack of natural or artificial obstacles that might bar pedestrians field of view
- **Understanding pedestrian need of sufficient view:** Prevent visual pollution, sidewalks designed in

human-scale and having considered the pedestrian need of sufficient view

- **Considering human-scale:** Considering the details regarding pedestrians angel of view and also its limits
- **Aesthetic aspect:** Synchronized floor design in front of each building block, designing the sidewalks while considering the landscaping of streets and pathways
- **Landscaping:** considering the landscaping of the sidewalks and attending it.

Figures 8 and 9. solving the problem of the slop in one sidewalk with slops and on the other with steps

Improvement of safety and security on the sidewalks

As mentioned before, security is a factor of sustainability in today's societies and no society has the chance of development and growth without it. Immunity and security are the main expectations of an urban space. Flexibility and vitality of an urban environment are only achievable if the pre-mentioned is safe. Otherwise, the inhabitant will be too involved to secure himself that even if the environment is vital or flexible, there will be no feeling of freedom or happiness toward any task. Physiological and mental security is the main demands of safety which are important for urban design. Considering that this research is based on the safety of hiking and sidewalks, therefore, regarding the security demands the objectives of this research are as below.

Physical security (Freedom and Physical security)
-Simple and easy motion
- Fixing the dangers of the route
- Weather protection
-Avoid the inappropriate use of furniture
-Placing the right facilities and installations

Mental Security (Having a sense of place and sense of mastery of the space)
-Routing and navigation
-Considering the visual perception
-Production of appropriate green zone
-Considering aesthetics
-Considering Human scale

It is being observed that pedestrians are not mostly using the pavements, which is both affecting their health and causing stress for the drivers. Under the light of the survey's result between 110 participants from Tehran, it is concluded that in short distances the age group over 40yrs old are more willing to take a walk while the age group under 40yrs old would prefer a ride. This fact is actually very hesitating (Diagram 1). To increase the safety in urban routes we need to consider Proportions in the width of sidewalks in relation with the roads and their width, sufficient brightness, increase the quality of passage

flooring, steep of the streets and avoidance of steps, appropriate functions across the streets, appropriate resolution of roadway and sidewalks etc. According the survey result, it was also proven that inappropriate width of pavements is the main reason not to use the sidewalks in the age group under 40yrs old (Diagram 2) and uneven road surfaces is the main reason of not using sidewalks in the age group over 40yrs old (Diagram 3).
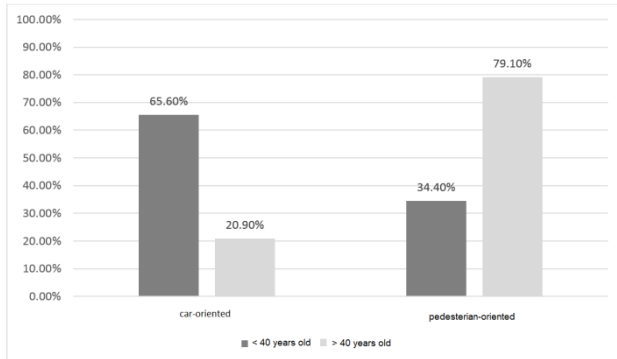

Diagram 1. Preference comparison of participants over and under 40 years old for hiking in short distances
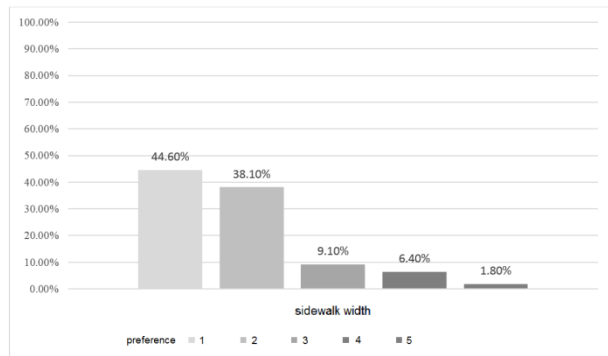

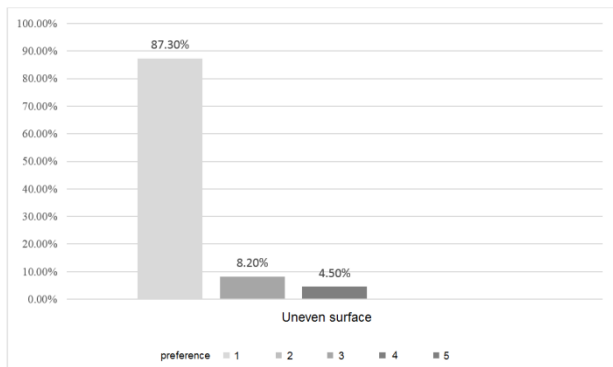**Diagram 2.** Main reason not to use the sidewalks of participants under 40 years old

Diagram 3. Main reason not to use the sidewalks in participants over 40 years old

In addition to former conditions for practicality of sidewalks, to persuade people to use the pavements there must be some facilities considered. Some practical discussions in some cases have been held within the experts and their necessity is clear. More over in this text there will be recommendations that people will be persuaded to use sideways with their observance.

Figures 10- 12. obstruction of the path in different ways

Encounter of the pedestrian and the visual synthetic environment

What a pedestrian will face is either a natural or synthetic visual environment. A natural visual environment matches the physiological standards of vision. This is while today synthetic environment is largely in dissension with the natural environment and visual savvy rules (Filin, 1998). Feline has divided the visual environment into three groups; Homogenous environment, Aggressive environment, Comfortable environment and they are defined as below.

-**Homogenous environment**: An environment which is not informative enough for consolidation of eye, due to lack of detail and tedium. It is promptly recognized, if continued it will firstly become discomfort able and later disordered.

-**Aggressive environment**: An environment where the observer will notify many similar shapes in the first sight. In this situation eye will be quickly exhausted and mind distracted. Continuity of this state is firstly felt by discomfort and later it can cause mind disorders.

-**Comfortable environment**: An environment with an appropriate variety of natural-like forms. Therefore eye can maintain a longer period without mandatory hesitation on the image (Pourjaafar et al., 2011, derived from Filin's studies, 1998).

A necessity which is due to the success of sustainable growth of this subject is to make synthetic visual environments as comfortable environments. This is while what is being observed in most cases is in contrast with expectations and belongs to aggressive or homogenous environments. Synthetic visual environment which a pedestrian is in contact with is the lower façade of the buildings, in first floor and close to the sidewalk and roadway and in front of the buildings on the other side.

From some modern architects' point of view, environment is only based on formal aspects and according to them we should not expect serenity from buildings. Furthermore these architects have been trying to relate sharp angles, metal edges and enormous councils to industrial design glossary. Relatively they produce Lack of emotional comfort. Their formal typology had a strong emphasis on straight lines that even under circumstances that it was clear that curves are functioning better than straight lines they would still insist. It was not because of practical justifications that these actions would take place but because these actions would impact contrast to functions. The surveys held in the Field of environmental psychology have proven that many structures in 20th century have caused hesitation for their inhabitants (Salingrus, 2006, quoted by Zarrin mehr and Mottaki, 2008)

Human has an instinct for form, which is in relation with his ability to recognize hazards with assistance of eyes. Over thousands of years architecture has been based on user's feeling of comfort. Currently the formal criteria have priority over human feeling of comfort. So that, despite the unpleasant feeling in respect to many buildings they have been praised in intellectual levels (Sommer, 1974). What decides a buildings success at the end is a series of emotional reactions arisen from the forms of completed buildings (Day, 1990; Alexander, 2004). Success in Architectural forms is based on the angle of the view of the observer. Closest points to the sidewalk are the most important ones and the further points are the least important.

Figures 13-15. Flooring differentiation in front of each building block

Human pace is probably a horizontal movement with the average speed of five km per hours and the sensory organs are appropriately calibrated with it. Senses are mostly directed to the front and one of the most practical and an efficient sense which is vision is clearly functioning in horizon. The horizontal visibility is wider than vertical visibility. If someone stares at his front overly he will notice what is happening on his both sides within an arc of 90 degrees in each side. Downward visibility is more limited than horizontal visibility and upward visibility is even more limited (GoleIyan, 1987, quoted from Shasti, 2008). Therefore while a passenger is walking on the side walk he will only notice the ground floor façade and what is happening on the roadways.

Regarding the flooring of the pavements each building itself is liable to choose the flooring, therefore discontinuity and difference of the flooring pattern causes visual pollution. Mostly there has been no attention given to the flooring of the frontier area of the buildings and there is no connection between façade and flooring. Use of different materials together, selection of materials without considering the ease of pedestrian's movement, constructing steps in front of buildings, parking ramp extensions in sidewalks and similar subjects are all the issues caused by individual buildings for pedestrians.

In regards to building's façade of adjacent buildings, in most cases there has been no attention to human scale to use appropriate details for ground floor façade. Some facades have created a uniform environment with no details, on the other hand use of duplicated details and non-connected details would induce an Aggressive environment to the observer. This is while ground floor façade and the frontier enclosure of adjacent buildings should be linked and with consideration of human scale and ease of passenger movement, hierarchy and induction

of positive space it should be designed. Results of the survey showed that aesthetics of the pavements is important for people; therefore we need to consider that. It also states the aesthetics are not related to age groups and it is a common state from both the over 40s and under 40s.

Chart 2. Answers to the question; how much aesthetics and adequacy of pavements are important to you?

Have never thought about	Not Important	Some how	Very Important	
2.7%	0.9%	10%	86.4%	Under 40 Yrs old
2.7%	4.6%	11.8%	80.9%	Over 40 Yrs old

Designing sidewalks walls in respect of creating a comfortable zone

Human mind has developed in a way that it can recognize hierarchy structures in the nature and analysed them, regarding the synthetic structures that haven't been organized hierarchal would be unfamiliarly recognized (Salingerous, 2006, quoted by Zarrin mehr and Mottaki, 2008). A design which has a hierarchy of scales would facilitate the progress of observer's perception. The amount of transparency in description of architectural scale and the adhesion of them are the decisions of design which would be made according to many respects. These respects are nothing in comparison to attain the assistance of hierarchy. Temporary stylize of design are promoting the reversal of hierarchy. These designs would defeat the progress of developing coherent forms and would mandatory ignore the hierarchy of natural scaling. In a simple attitude toward design all the aligned scales would be eliminated. This act is an act of form ignorance; it would reduce the twist of form. On the other hand, by illustrating the accidental substructure it would prevent the hierarchy and accretion. This action will debilitate human perception by diffusing the alignment of coherent (Simon, 1962). Both of the spectrums would result in structures with no hierarchy. Up to now these two spectrums had been observed as live design options that had been justified with formal and innovative gimmicks. In the first case, if someone is seeking for a pure geometrical and logical shape, he is not demanding any internal structures. That kind of architect who is willing to present a form in its purest platonic shape has stepped toward a hollow form. This logic is mostly appropriate for the contractors who struggle to produce a block with the least spending. Omitting the whole assistance of hierarchy from the environment will metamorphosis the form and will probably make it more sensible to (material erosion) damage. Eliminating it will also affect people feelings and physical conditions and may cause depression. (Salingerous, 2006)

Though there is a long way for this content to be ripe enough, to protect this fundamental in justifying psychology there is a strong proof (Sommer, 1974; Mehrabian, 1976; Kaller, 1980 and Alexander et al., 1977). One of these justifications is that, human mind has been trained in a way to recognize the cooperation between hierarchal natural and live forms with analysis. Any form which doesn't contain these qualities will warn

and therefore it will increase the adrenalin level. Every synthetic and disordered form will attract attention and meanwhile mind is struggling to justify that, it will burn the body's energy. There is no comfort in these forms composition. These forms react conversely to human inherent mind arrangements. Therefore they can never be visually or mentally experienced comfortable. The presented model here matches Gibson's direct perception hypothesis in psychology (Gibson, 1979; Michaels and Karlo, 1981)

Figure 17. Disordered façade   **Figure 18.** Ordered façade

According to Gibson's point of view, pattern's perception is not started by informational data. It is for the data to pass continuous levels according to different groups of criteria to be analyzed. Rather when the patterns are being seen will be perceived at the same time (Fischer and Firschein, 1987). This process contains a kind of emphasis which is done between our internal and external structure of recognition. While this process is done in seconds the observer will not usually notice that, though the way of impact is not recognized but the impact it is perceived (Salingerous, 2006). The most important function of roadway is to use the movement experience to simultaneously percept the body and memory of the city. Environmental perception would differ due to the human movement. Hiking is the closest to the environment and therefore would allow a rigid process of commenting and recording (Madanipour, 1990). Roads and sidewalks are the main image of the people from cities and the pavements and the connected features to them (building façade in ground floor scale) will solidify the city panorama with their pattern. Justification of on structure in different scales (or loss of it) would affect the user directly and Gibson's perception hypothesis would confirm it.

CONCLUSION

Walking is on itself a transportation method, and at the same time it provides an opportunity to be in a public space. In order for one to enjoy walking, there should be no problems, no pushing each other, people shouldn't have to manoeuvre around different obstacles, and they should be able to walk freely and easily. Human's passages on the sidewalks is sensitive, uneven, poor, loose flooring, is always problematic for people especially if they have walking problems. Poor surface conditions have a negative effect on people. People avoid wet and slippery pathways. Such conditions plus walking problems causes inconvenience as its problematic. Also level differences are a serious problem for pedestrians. And so people would try and avoid problems (GoleIyan, 1987, quoted by Shasti, 2008).

And if people avoid the sidewalks they'll walk on the streets and that would put psychological pressure both on themselves and on the drivers. Should we consider the situation from an optimistic point of view where no accident occurs, it can lead to verbal conflicts between pedestrians and drivers. Although nowadays sidewalk floorings have been improved in most main streets like Valiasr St., many side streets still lack proper sidewalk floorings. Poor, slippery floorings or blocked by plants or electricity poles … all are problems that drive people to rather walk on the streets. Level differences are also very big issue that should be avoided. To make sidewalks Practical and to encourage people to walk on the sidewalks, determining proper sidewalks scale depending on the number of people that use a specific sidewalk at any given time, doesn't take much effort, and they make these spaces useful. Better designs, removing blockages, using slops instead of steps, proper landscaping, good lighting, preventing motorcycles to enter the sidewalks are things that could make sidewalks more useful.

The results of this research show the necessity of a proper planning, can lead to a better lifestyle and an increase in using the sidewalks, only with proper outdoor designs. However this is only possible if different activities and different reactions are properly evaluated, so that the streets themselves count as outdoor attractions. It's also important to pay attention to human's limited function perimeter o the street or on each square meter. And finally in outdoor designs it's important to design a practical sidewalk that can be used by any and all people, without putting any pressure on them. Although proper teachings and public participation are also of utmost importance

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