Environmental factors and urban crime

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Abstract

Urban Environment planning can prevent abnormal behaviors, crime and felony in urban places by identifying effective local features and environmental conditions, along with other actions, so that the felon would have much less opportunities for committing criminal and unlawful acts in urban areas.

This article is part of the outcomes of a study project called “formulation of environmental criteria for preventing transgression in urban areas”. Aimed at identifying the role of environmental factors and formulating the criteria for reducing susceptibility to crime in urban areas, and carried out by the instructions of the Undersecretary urbanism at the Ministry of Housing and Urbanism, it was completed in 2006 at the study and research center of architecture and urbanism.

In this article, field findings are analyzed using the descriptive method in comparison to the environmental theory of crime prevention and environmental features of safe urban areas

Keywords: Urban places, environmental conditions, environmental prevention, urban crimes

Introduction

The need for safety has always been one of the most profound needs of man, and the issue of crime occurrence one of the most important issues of human beings. Fulfilling this need and resolving this issue has become more complicated with the increase and complication of societies.
In the countryside, there’s a higher feeling of safety due to the domination of social supervisions. On the contrary in urban societies, particularly in metropolitan societies, the citizens’ feeling unsafe is one of the major issues due to the higher potential of environmental conditions for transgression.

According to the report of the UN Habitat, urban incidents and violence has increased from 6 to 8.8 per 100000, between the 1990s to 2000s. Recent studies show that during the last 5 years, 60 percent of the entire world’s city residents have, directly or indirectly, been a victim to violence, crime and felony. Thus, the increasing crime rate, violent or non-violent, is a serious threat for all the urban societies of the world.\(^1\)

In such a situation, official control means, like the police and judicial system, will not suffice for fighting against social turmoil, while law enforcement and judiciary actions are at the final stage of the crime and felony control process.

To put it simply, it’s neither feasible nor reasonable to assign a police officer to every single resident for creating the feeling of urban safety.

Sociologists and education experts suggest social prevention for addressing this issue, using official and unofficial education and other social policies in order to try to instill values and norms into each person.

However, the matter in hand in this article is some environmental features of the city which, for several reasons, sometimes make the area susceptible to transgression, and hence create a feeling of unsafety among citizens. In fact, since committing any kind of crime requires suitable conditions regarding both time and place, there are some areas in cities that have the required conditions for transgression. These places and areas in cities are called crime-prone places and areas.

Therefore, regarding the problem of creating security, experts consider some more indirect methods in addition to the necessity for tangible control (by assigning police officers) and also social prevention (by controlling social behaviors from birth and giving essential instructions).

For this purpose, crime-prone conditions of public areas in cities are mentioned. These conditions could be reduced or removed as much as possible using spatial and framework methods.

**Theoretical framework**

Effective environments in emerging criminal behaviour can be explained on three levels:

A) Macro level: general features of the larger scale of environment, or society.

B) Medium level: environmental characteristics on a city level.

C) Micro level: situation and circumstances of a particular location in a particular environment.

A) Macro level

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\(^1\) (The significance of this issue in the world made the UN opt for “a safe city is a just city” as the slogan of The International Human Habitat Day in 2007, to attract all scientific, political, executive, and general public thoughts. For the same reason it published several books and held several international symposiums on safety and security in the world’s cities on the same day. For more information see: http://www.unhabitat.org)
Generally, in every society (or each country or region) the "phenomenon of committing crime" with respect to cause and effect is always influenced by a series of interdependent environmental factors all of which play a role in the emergence of criminal behaviour in society\(^2\). These can be divided into:

1- Social factors
2- Economic factors
3- Cultural factors

Of course, the mentioned categorizing follows sustainable development issues, too. However, in the case of social factors, the French authority Lacassagne believes that, the "social environment is a cultivating container of offence (Najafi and Beigi, 1997). Similarly, the experts of the Chicago School have pointed out factors such as "high social incompatibility". The well-known sociologist Durkeim noted the "oppositeness of [the] unlimited wishes of humans and [the] social restrictions (Durkeim, 1951). Walter Miller pointed to deep gaps between social facilities, while Merton argued for the "lack of possibility to control the instinctual tendency of individuals, when there is no monitoring or social structure in society (Davis and Stasz, 1990).

In the case of economic factors affecting emerging criminal behaviors, different authorities (W. Godwin, C. Pecquer, Proudilhon, F. Angels, A. Parnell, J. Kasarda, etc.) discussed the existence of "poverty and financial needs", "unemployment level", "economic cost of committing crime", "unbalanced economic growth and development", "amount of inflation," (Gizeweki and Dixon, 1995) among others. Cultural factors have also been suggested to play a role in the emergence of crime in urban society. Lewis Worth, Robert Redfield, Walter Miller, R. Cloward, and L. Ohlin observed a "break down of cultural structure", "existence of micro deviator culture", "cultural in homogeneity in large cities", etc. (Afroogh, 1997and Mohseni Tabriz, 2005).

All these factors as Figure (1) shows, interact within in the frameworks and conditions created by a particular environment (in both its general meaning referring to the general condition of natural and in the context of human-made environments, i.e., the spatial, physical, and environmental conditions of a specific place). Thus, in all urban societies, undesirable social, economic, and cultural conditions and factors cause social, economic and cultural abnormalities that, alone or in their interaction, lead to criminal acts. In addition, these factors are influenced by other aspects such that the medium and micro levels of analysis will be intensified or undermined.

\(^2\) In addition to environmental factors, the psychological reasons of offenders can be mentioned. In such cases, environmental factors may have less of an influence, with a greater role ascribed to genetic inheritance.
Figure 1. Role of effective factors (in macro level or larger environment space and society) emergence of criminal behaviour

CB = Criminal Behaviour
UEF = Undesirable Economic Factors
USF = Undesirable Social Factors
UCF = Undesirable Cultural Factors

B) Medium level

Medium level is an element of Macro level which includes social concepts of environment; furthermore there is a reciprocal interaction between these two levels. It must be considered that each urban place (or space), as a human-made environment, is part of a larger environmental space, i.e., the city, and each city is a part of a larger environmental space, i.e., society. Hence, the same factors (including social, economic and cultural ones) and reasons involved in the emergence of abnormalities such as crime at the general level of society also play a role in urban spaces. In other words, whatever affects human behavior in urban societies will also affect human behavior in urban spaces.
At the same time, there is also a medium level at which each city has its unique characteristics (such as size, role, social, economic, and cultural conditions). These intensify or mitigate macro level effects as well as the emergence of anomy at lower levels (medium, micro) or within urban environments (Salehi, 2005).

In fact, much research has been directed at examining medium-level effects and has led to the identification of two groups of urban characteristics that influence the emergence of criminal behavior (Fig. 2):

1- Urban physical abnormalities: abnormalities in the size of a city (Walmsly, 1985), its settlements (Stravrou, 2002), its public spaces (Whit, 1998), and its transportations and network of streets (Perkins et al., 1993).

2- Urban functional abnormalities: abnormalities in social (Body, 2000), economic (Gizewski and Dixon, 1995), and cultural (Wakefied, 2005) functions.
Figure 2: Effective characteristics of cities environment in emergence of Criminal behavior

Macro level
(Environmment Society)

Medium level
(Environment city)

Effective characteristics in emergence of criminal behavior at city environment

- Abnormality in the social functional
- Abnormality in the economic functional

- City size abnormality
- Habitat abnormality
- Form abnormality in

Criminal Behavior
C) Micro level

Finally, environmental and situational circumstances (especially in public places) that lead to the occurrence of crime and anomic behavior can be ascribed to micro level factors. Of course Micro level is a branch of Medium level, in fact every medium level might is composed of some different micro levels.

As shown in Fig. 3, criminal behavior might be surrounded by three basic elements (the three sides of a triangle): offender, victim, and situation.

Figure 3: analyzing anomic behavior


John Evry, argued that; gunpowder has explosion power, but needs spark and dry air or pressing a button to explode (Afroogh, 1997). Analogously, a crime needs a suitable location and situation, an offender, and a victim in order to be committed. The situation and circumstances can be assumed as one side of the triangle. The international group authors of the CPTED (Crime Prevention through Environmental Design) concept and other researchers in this area believe that by defining and reforming the spatial and physical parameters as well as the circumstance of each place, it is possible to reduce the offensive conditions that exist in various places. Figure 4 shows the role of situation and location in crime, as the point where offender and victim intersect with each other.
While in principle this can occur anywhere, there are specific circumstances that facilitate or prevent the committing of a crime at a particular place. Characteristic environmental and spatial circumstances have essential roles in determining an urban space or location’s destiny. Success or failure of an urban space depends on the characteristics of that space and not just its equipment and installation (Terner, 2000). Therefore, everything that occurs in these places and situations—including abnormal or normal social behaviours and events—is under the direct or indirect influence of these circumstances and include variables of form, space, and function.

In order to secure a specific place or space within a city, protective and supportive site-specific and environmental conditions must be met at the macro, medium, and micro levels (Figure 5). According to above mentioned, meso or medium level is as a link between two levels of macro and micro level, then it includes some characteristics of both of two different environments, and the criminal actions will be occurred in micro level, so environmental characteristics of this level will have directional effects on criminal behaviors, then under this condition other levels would be changed and the negative effects of meso and macro levels such as economical, social and cultural abnormalities, will be mitigated, because under this condition (healthy conditions of micro level) there is not any situation for occurrences of crimes. So in this study, the macro and meso agents were considered constant and author (researcher) focused on micro spatial level, according to purpose of study.

Otherwise by environmental design, some sorts of criminal situation might be prevented. “CPTED” is the proper design and effective use of the built environment which may be lead to a reduction in the fear and incidence of crime, and an environment of the quality of life (National Crime Prevention Institutive). Also by environmental design through product design or street furniture design, some
critical or hazardous situation would be limited. For instance, if a glass bottle changes to plastic one, nobody can use it as a fatal weapon after breaking the bottle, or by lighting design and lighting modification across the streets, environments` privacy will be decreased, then under this condition criminal behaviors are limited as well. Otherwise by safety design of equipment in public areas, vandalism rates might be prevented, Therefore, related crimes would be decreased.

**Figure 5: three supportive shade, creators of a secure urban place and space**

![Diagram](safe_urban_space)

**Theoretical background and analysis**

The theoretical background of this issue can be traced to Urban Ecology studies, which have provided a scientific framework for recognizing reciprocal relations between humans and their environment. Jane Jacobs's theory regarding urban-planning provisions for creating safe environments in streets and urban parks is one of the most practical in this regard (Carmona and others, 2003). Also kind of space is another factor which affects on criminal behaviors, i.e. Ellen m Kurtz mentioned that Specific types of land uses are associated with higher crime or victimization rates because they draw numbers of victims, offenders, or both. Blocks with bars (Frisbie et al.1978; Roncek and Bell 1981; Roncek and Pravatiner 1989) and schools (Perkins et al 1990; Roncek and Faggiani 1985) experience higher levels of crime, calls for service or victimization rates. Researchers disagree on whether mixed land use in a primarily residential area will enhance or diminish resident-based control. Jacobs (1961) argues that mixed land use promotes healthier blocks because they are used more heavily and thus have denser informal control network. Land use influences resident-based informal control in several ways, first, it affects both pedestrian and vehicular traffic patterns (Kurtz.E.M, and others, 1998).

In 1971, following publication of the article "Crime Prevention through Environmental Design" by C.R. Jeffery, an important turning point came about in studying social abnormalities and crimes. Prior to this article, the dominant viewpoint in criminology was the study of crime itself. However, Jacobs and Jeffery's ideas led to the consideration of CPTED as a methodology that could be implemented by urban...
planners, designers, and architects. In this framework, suitable and objective design in human-built environment would reduce the feeling of insecurity in places by removing opportunities for crime, and thus improving the quality of life of city residents and visitors (Atlas, 1999).

This approach was furthered by other authors, such as Elizabeth Wood, S. Angel, Oscar Newman, Alice Coleman, J. Wilson and G. Kelling, and D. Hillier. Their proposals to prevent criminal offences via environmental design and rearrangement can be summarized as follows:

"Awareness of environment means that the design and layout of a place is understandable. This includes the ability to see and to comprehend the significance of what is around and what is ahead through adequate lighting, clear sightlines, and elimination spots in order to avoid and prevent dangerous situations. Visibility means that a person using a building or a space is not isolated. It requires the ability to be seen, through reduction of isolated areas, improvements to the mixture and intensity of land use; and intelligent use of activity generators.

Finding help means that a person can readily receive assistance from others. To do so, the must be clearly marked means of assistance, such as emergency exits, alarms, and phones, and opportunities to escape, communicate, or obtain help, through improved signage and legible design (Wakerle and Whizman, 1995).

To the studies that form the basis of this article, the concept of the importance of the "quality of an environment" must be added. This is an outgrowth of the apparent relationship between anomic and criminal behaviour and undesirable environmental quality (including kinds of environmental pollutions and deterioration or destruction). In other words, it is often the case that environmental degradation attracts criminals and crime in a "same time, same place" manner. Thus, besides the three above-mentioned proposals, the following one, which can be validated by case study, have been added. Quality of environment means if an environment has specific qualities that allow its permanent monitoring there will be a greater degree of environmental comfort as well as greater human interest in exploiting and occupying these environments. Table 1 lists several indicators that will facilitate analytical measurement of these proposals.
### Table 1: Analytical measurement of the role of “Quality of environment”

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Indicators</th>
<th>General Expression of Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Environmental awareness (increasing awareness of an environment increases its security)</td>
<td>1-1 Human scale of the space</td>
<td>- In case of very vast of places with lack of perceivable boundaries, environmental awareness decreases</td>
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<tr>
<td></td>
<td>1-2 Access to correct environmental information (without symbolic pollution)</td>
<td>- Incorrect information or a lack of information about an environment decreases spatial awareness</td>
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<td></td>
<td>1-3 Role of visibility in conferring an understanding of an environment</td>
<td>- Spatial form has an effective role in generating a complete understanding of a particular space and thus influences environmental awareness, especially that of the person visiting the space for the first time</td>
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<td></td>
<td>1-4 Provision of light for users of the space</td>
<td>- With the appropriate use of light, people's environmental awareness at night increases</td>
</tr>
<tr>
<td>2-Visibility by others</td>
<td>2-1 Surveillance ability of space</td>
<td>- The extent to which the space and activities taking place in it are seen and under surveillance</td>
</tr>
<tr>
<td>(ability to be seen)</td>
<td>2-2 Provision of light in the entire space</td>
<td>- Light conditions should make the entire space visible</td>
</tr>
<tr>
<td>3-Finding help</td>
<td>3-1 Consideration of public access</td>
<td>- Suitable size of the space such that it readily allows finding help (in vast empty spaces this possibility is very low)</td>
</tr>
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<td></td>
<td>3-2 Amount of noise pollution</td>
<td>- High noise pollution prohibits calls for help from being heard</td>
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<tr>
<td></td>
<td>3-3 Attendance indicator</td>
<td>- Continuous presence of people and activities prevents a lack of access to help</td>
</tr>
<tr>
<td></td>
<td>3-4 Accessibility to police</td>
<td>- Presence of a near-by police station</td>
</tr>
<tr>
<td>4-Quality of space</td>
<td>4-1 Quality of environmental health</td>
<td>- Environmental pollutions and destruction and degradation are evidence of a lack of official and unofficial monitoring (thus granting criminals better opportunities to commit crime)</td>
</tr>
<tr>
<td></td>
<td>4-2 Quality of local residences</td>
<td>- Physical quality of local housing, local population density, and overall quality of the surrounding neighbourhoods</td>
</tr>
<tr>
<td></td>
<td>4-3 Quality of land use</td>
<td>- Quality and variety of land use and activities</td>
</tr>
<tr>
<td></td>
<td>4-4 Quality of spatial crowding</td>
<td>- Possibility to maintain reasonable individual distances</td>
</tr>
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<td></td>
<td>4-5 Quality of penetration</td>
<td>- Penetration of the space from different locations to others</td>
</tr>
<tr>
<td></td>
<td>4-6 Public transportation</td>
<td>- Quality of access to public transportation</td>
</tr>
</tbody>
</table>
Analytical Model

Accordingly, the macro, medium, and micro levels can be used to construct an analytical model (Figure 6). This model takes the form of a case study and the conclusions that can be drawn from it.

Figure 6: Analytical model

- Undesirable social factors (social abnormality of society)
- Undesirable economic factors (economic abnormality of society)
- Undesirable cultural factors (cultural abnormality of society)

People of urban society → Offender → Urban space (places)

Lack of opportunity and possibility of offensive and criminal behavior

Secure urban space

Potential urban space for committing crime and anomic behavior

Hypothesis

Characteristics of form, space and activities of place in creating conditions for:

- Awareness of Environment
- Visibility by others

Field study
Conclusion

Urban spaces are the main sources of human urban community actions. In these spaces, challenges and collisions between actions and humans reach to extremes their highest level. Currently, environmental rearrangement science, such as urban planning and design and architecture, cannot be restricted to seeking the achievement of technical principles; rather, they also need to better appreciate social needs with the help of other sciences, such as sociology and environmental psychology, in order to provide a better quality of life to residents and to prevent social degradation. The goal is to create a harmonious and compatible relationship between members of society and their environment.

Urban Environment planning can prevent abnormal behaviors, crime and felony in urban places by identifying effective local features and environmental conditions, along with other actions, so that the felon would have much less opportunities for committing criminal and unlawful acts in urban areas.

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