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RESEARCH ARTICLE

Privacy at home: Analysis of behavioral patterns in the spatial configuration of traditional and modern houses in the city of Hamedan based on the notion of space syntax

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Privacy; Spatial configurations; Space syntax; Pattern of behavior; Hamedan; House

Abstract

The Iranian concept of home goes far beyond physical aspects, and its essence is interwoven with the spiritual nature of humankind. This concept has gained new meanings with the modernization and industrialization of societies. In Iranian architecture, every need is realized in socio-physical systems as well as in design issues. Therefore, spatial relationships are central to architecture, especially residential architecture that addresses a great proportion of an individual's daily life.

Space syntax seeks to explain how spatial configurations express social or cultural meanings. One such meaning is confidentiality, which was mainly introduced into Iranian architecture as a result of religious beliefs. In Iranian architecture, confidentiality is viewed from the aspect of privacy.

This study is a case study that makes use of description, analysis, and logical reasoning. The objective is to analyze behavioral patterns in the spatial configurations of traditional and modern houses in Hamedan. In so doing, library research, software simulation with the UCL Depthmap package, and comparison techniques are utilized.

The findings indicate that the spatial configurations of houses have changed in the course of time. In terms of the indices of spatial configurations, however, the striking difference between traditional and modern houses in Hamedan revolves around the integration and equivalence of all spaces in a house. In other words, the hierarchy of access to spaces and the recognition of

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territories are limited in modern houses. Hence, privacy in modern houses fades. © 2016 The Authors. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

1. Introduction

Houses have always been built according to the needs of their inhabitants. However, in recent decades, irregular and undesirable changes that are not based on real needs but are mere imitations have been applied to buildings. The beginning of this trend can be traced back to the introduction of western architecture to Tehran by the first generation of Iranian architects during the reign of Naser-oddin Shah in the second half of the 19th century (Alalhesabi and Korrani, 2013). These architects were mainly concerned about promoting modernist architecture in Iran, specifically in the Pahlavi period. Therefore, Iranian modernization in architecture is rooted in the works of these architects (BaniMasoud, 2009). As a result, Iranian architecture, which was closely interwoven with rich Iranian traditions, and the quality of residential buildings were transformed after the return of Iranian architects who were sent to Europe to study architecture (Alalhesabi and Korrani, 2013)¹.

The number of residential buildings has increased because of the urgent housing needs of the growing population. A very good example of a large-scale construction in Iran is the recent project of Maskan-e Mehr. This nationwide project is carried out by the government to build inexpensive residential complexes in large quantities for families with no permanent places of residence. Maskan-e Mehr buildings are representative of the contemporary style of residential architecture in Iran. Mostly constructed in living quarters on the outskirts of cities and towns, these buildings represent an unprecedented experience in affordable housing. The main objective of the Maskan-e Mehr project is to provide housing within a short period and with the lowest construction costs (Nastaran and Ra'naee, 2010).

Obviously, the inappropriate design of living spaces may be physically and mentally harmful to inhabitants who spend a remarkable portion of their time in these spaces. A much discussed notion in the field of environmental psychology is the notion of privacy conceived as an urgent need of individuals in artificial environments. To obtain a desirable state of privacy, each individual resorts to certain means depending on their sociocultural milieu. One important means is the appropriate design of living space and environment.

The organizing principles of space signify interpersonal relationships as much as they indicate the general state of mankind (Tuan, 1977). Therefore, lifestyle highly depends on one's ownership of a private space (Rossler et al., 2005;

Hanson, 2008). In addition, the needs and abilities of residents also change in time (Baldwin and Tomita, 2007). Hence, privacy needs vary within individuals at different times and within cultures at different historical periods because of changing social customs and taboos (Newell, 1994). Under this context, a study on the concept of privacy and its influence on the spatial configurations of traditional and modern buildings is important. The basic hypothesis in the present study is that given the current need for privacy in the spatial organization of modern buildings, privacy has not been widely recognized as a behavioral pattern that may influence the spatial configuration of a living space. The research questions are as follows:

- (1) In what ways do the spatial configurations of traditional and modern residential buildings in the city of Hamedan meet the essential need for privacy?
- (2) Do the spatial configurations of residential buildings change in the course of time in terms of behavioral patterns? If yes, in what ways?

2. Review of literature

Thus far, much research has been conducted into the meanings of privacy and its determining factors. However, in terms of architecture, accessing the interior environment of private houses to improve design quality comes with serious limitations. A solution to this problem is using specialized software packages for analysis and simulation.

The idea of space syntax was first introduced in Iran by Abbaszadegan (2002) and Memariyan (2002). Subsequently, this concept was applied to research into the urban structure in Iran (Yazdanfar et al., 2008; Rismanchiyan and Bell, 2010, 2011; Mokhtarzadeh et al., 2012). Kamalipour et al. (2012) categorized the formal composition of native houses in Kerman and studied the spatial configuration with regard to the arrangement of land for the parlor in traditional houses in Kerman. However, a gap exists in the application of this approach to architecture with a special emphasis on environmental psychology.

3. Definition of key concepts

"Housing is a crucial site in the day-to-day life of most individuals for the distribution of wealth, control over life circumstances, access to social resources, important factor in processes of social identity formation, and the establishment and maintenance of social relationships" (Dunn, 2000). Hayward identified nine meanings of home by asking the study subjects to sort statements related to home. The meanings include social relations, social networks, self-identity, privacy, continuity, personalization, activity base, childhood homes, and physical structures (Shin, 2014). According to Hanson, a house is a dynamic structure that grows and changes in size and configuration according to

¹In that period, the entrance of Shams-ol-Emareh under the reign of Naser-oddin Shah was changed. The entrance, which was previously accessible through the corner gates, was changed into a flight of stairs. This change stood in such a stark contrast to traditional Iranian architecture that the stairs were removed in the period of Pahlavi I and the entrance was again possible only through the corner gates on both sides of the building.

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