Higher Education Press

SOUTHEAST UNIVERSITY

The Authors

RESEARCH ARTICLE

Syntactical analysis of the accessibility and sociability of a square in the Kuala Lumpur City Center

Hossein Safari*, Fataneh Fakouri Moridani

School of Graduate Studies and Technical Complex, Islamic Azad University of Rasht Branch, Lahijan 44158-84715, Iran

Abstract

The lack of visibility and the difficulty in developing a cognitive map may be particularly important in wayfinding and in categories where the use of accessibility and sociability will provide a square suggestion in the Kuala Lumpur City Center Park (KLCC). This study attempted to examine the existing structure within the vicinity of KLCC and the transformations of its vicinity based on a square suggestion through morphological analysis using axial analysis and observations. The axial analysis shows how the accessibility of the square has shifted within the city and compares it with an existing park. Moreover, a square suggestion can provide context for the Petronas Twin Towers as a landmark and symbolic building. A square, as a regular geometry, can aid in improving the configuration of the vicinity of KLCC. Consequently, this research is useful to architects, tourism managers, and urban designers because it demonstrates the importance of effective factors in sustaining accessible and sociable space, such as a square.

1. Introduction

Wayfinding follows psychological patterns that use perception (Emo et al., 2012). The external information of urban space, such as environmental configuration, may affect decision-making in wayfinding (Conroy, 2001). Evidence has shown that disorientation is one of the effects of impaired wayfinding on visitors. Disorientation involves an egocentric spatial sphere, a representation of heading, a lack of landmark, and viable cognitive function agnosia (Aguirre and D'Esposito, 1999; Asselena et al., 2005; Bottoni et al., 1990; Suzuki et al., 1998). Visitors rely on certain

*Corresponding author.
E-mail address: hossein.safari110@gmail.com (H. Safari).
Peer review under responsibility of Southeast University.

wayfinding tasks, which may be a stressful experience when people are in an unfamiliar environment (Hölscher et al., 2006).

Although the number of studies that focused on cognitive map and wayfinding (Gärling et al., 1986; O'Neill, 1991a, 1991b; Weisman, 1981) has increased recently, a review of the space syntax method (Karimi, 2012) for reading urban spaces based on the wayfinding literature shows minimal theoretical works in the wayfinding area; in particular, few efforts have examined the impact of wayfinding on visitors in an unfamiliar urban space (Edwards and Griffin, 2013). Early wayfinding research (Chebat et al., 2005; Hölscher et al., 2005; Ishikawa and Montello, 2006; Mallot and Basten, 2009; Nasar, 1983; Vilar et al., 2013; Wiener et al., 2009) focused on the general characteristics and roles of landmarks (Bruce and Herman, 1983; Caduff and Timpf, 2008; Wilkniss et al., 1997; Zakzanis et al., 2009). Other research related to wayfinding includes studies based on the age (Barrash, 1994; Clearfield, 2004; Driscoll and Sutherland, 2005; Head and Isomc, 2010; Learmonth et al., 2001; Moffat et al., 2006, 2007; S.D. Moffat et al., 2001, 2006; S.D. Moffat and Resnick, 2002; Newcombe et al., 2010; Wilkniss et al., 1997) and gender (Astur et al., 1998; Chen et al., 2009; Coluccia and Louse, 2004; Grön et al., 2000; Lawton, 1994; S.D. Moffat et al., 1998; Mueller et al., 2008; Piccardi et al., 2011; Saucier et al., 2002; Tan et al., 2006) of the wayfinder, and the variety of materials, colors (Dalke et al., 2005; Read, 2003; Spence et al., 2006), and interior space, such as in airports, shopping malls, and galleries (Lam et al., 2003). Despite these works, the literature on unfamiliar urban spaces and their relationship to the spatial behavior of tourists as visitors is nearly nonexistent (Edwards and Griffin, 2013). Consequently, we have an incomplete picture of how the wayfinding of visitors can be improved in unfamiliar urban spaces by using a square to sustain accessible and sociable spaces.

The objective of this study is to examine existing structures within the vicinity of the Kuala Lumpur City Center (KLCC) Park and the transformations of its vicinity based on a square suggestion through a morphological analysis. Space syntax was selected to simulate and examine whether an urban space configuration exhibits an advantage over the square suggestion. Moreover, observation aids in understanding the existing configuration in the vicinity of KLCC and the feasibility of the square suggestion are presented in this study.

The lack of visibility and the difficulty in developing a cognitive map may be important in wayfinding, particularly in categories where the use of accessibility and sociability will provide a square suggestion for the KLCC Park.

This study provides a square suggestion for the vicinity of KLCC. Wayfinding issues are presented, and certain contingencies in which the configurations of space are relatively effective are explored. The hypothesis is that a square, as a regular geometry, affects urban space configuration and wayfinding. Thus, the main objectives of the present research are as follows:

- To investigate the relationship between spatial syntactical variables and the accessibility of streets by using a square.
- To assess the behavioral pattern of visitors in the KLCC Park.

Previous research on the underlying route knowledge of wayfinding has focused on survey knowledge (Mallot and Basten, 2009; Meilinger, 2008; Meilinger et al., 2013; Poucet, 1993; Trullier et al., 1997). However, the literature is nearly nonexistent on the effects of local information, which are identified by observing static and dynamic activities (e.g., snapshots, gate, people following, and directional splits) and their relationships to visitors in real space. Consequently, an incomplete picture remains of how the wayfinding of visitors in urban spaces can be improved in unfamiliar urban spaces by using a square to sustain accessible and sociable spaces. This suggestion is supported by the space syntax method. In addition, previous research has shown that the structure developed for new squares in urban design remains applicable (Giddings et al., 2011). Studies have also found a difference in the wayfinding behavior of people when they are familiar or unfamiliar with the environment (Holscher et al., 2007). Furthermore, static and dynamic activities are two types of wayfinding that exhibit differentiation (Fewings, 2001). In the case of the KLCC Park, most visitors in this area are tourists, and thus, they can be unfamiliar with the environment and may perform either a dynamic or a static activity in wayfinding.

The remainder of this paper is structured as follow. First, the literature that explains effective wayfinding using a viable cognitive map, the relationship between space configurations and wayfinding, and a square as a geometric landmark is presented in Section 2. Then, the procedures used to test the hypothesized effects of effective wayfinding, space configuration, and regular geometry are described in Section 3. Subsequently, the findings of the study are presented in Section 4. Finally, the study is concluded with a summary of its contributions and directions for further research in Section 5.

2. Influences of relationship between wayfinding and space configuration

The current study offers explanations on how geometry affects wayfinding. Considerable research has focused on the role of cognitive maps on wayfinding (Asselena et al., 2005; Gärling et al., 1986; O'Neill, 1991a, 1991b; Passini, 1981). In wayfinding, cognitive maps have been studied geometrically (Gallistel, 1990; Golledge, 1999; Kitchin and Freundschuh, 2000).

The foundation of this research is the extant literature on relationships in effective wayfinding, the configuration of the vicinity of KLCC, and geometry. Three core relationship bonds are found in this literature. A general model for their possible interrelationships is shown in Figure 1. This model will be explained in the next section, starting with the three aspects of a relationship, including wayfinding, geometry, and space configuration.

2.1. Effective wayfinding with a viable cognitive map

Numerous studies have shown that wayfinding involves visual access, landmarks, use of signs, and plan configuration (Weisman, 1981). Other studies discuss the impact of