Spatial Representation of Place Meaning in Urban Historical Parks – A Case Study of People's Park in Guangzhou, China

Xuanxiang. Huang*

School of Architecture and Urban Planning, Guangdong University of Technology, Guangzhou, China

Abstract. As people's demand for public space continues to rise, historical urban parks, which are an essential part of the city's public space and people's emotional space, are facing the need for renewal and renovation. By introducing the concept of Place Meaning and based on a systematic review of related literature, this paper selects Guangzhou People's Park as a case study, empirically exploring the spatial representation of Place Meaning in Guangzhou People's Park using the cognition map method. It is found that the spatial representation has differential characteristics when based on Historical and Cultural Factor, Leisure and Recreation Factor, Landscape Ecology Factor and Social Interaction Factor. By conducting scientific research on the spatial representation of place significance, this paper can provide a reference for the transformation of urban historical parks, highlighting the image of urban environment and historical culture, and meeting the construction of urban environmental engineering under the new situation.

1 Introduction

With the continuous construction of new parks and open urban public green spaces, the historical parks in the city, which have survived the vicissitudes of the weather, are also facing the need for renewal and reconstruction. As a public green space in the city, parks contain political, economic, power, and ecological structures, and on the one hand, as a window to display the city's image, they express the builders' political ideals of openness and publicity, and on the other hand, they need to cater to the demands of the general public for urban public space and environmental protection. Historical parks, as time-honored urban green leisure spaces, have an irreplaceable historical value and local connection compared to ordinary city parks. The ever-changing spatial "human-land relationship" makes a specific "space" be valued as a "place".

In the past 30 years, there has been a surge of research on "human-place emotions" in foreign countries, involving almost all branches of social sciences. Scholars have made rich explorations on theoretical and quantitative aspects of a "Place Meaning". In terms of the definition of Place Meaning, Tuan (1976) considers that Place Meaning is the inherent attributes of the place itself and people's sense of attachment to the place [1]. Subsequently, numerous case studies have been conducted abroad on the influencing factors of Place Meaning and its application. Some scholars have researched the Place Meaning of unique residents [2]. What's more, there is a richness of research methods and outcomes in terms of Place Meaning. 2000-2005 scholars such as Reed and Brown's research into the different values and importance of places in the minds of the residents [3-5], creatively began to explore the "mapping" of human-place emotions. Among them, the commonly used " PPGIS (Public Participation GIS)" technology opens up a path to marry people-place emotions and public participation.

In recent years, the research on Place Meaning in China has rapidly heated up. Among them, more empirical explorations have been conducted in major cities such as Guangdong, Beijing, and Shanghai. Xiang Fenglin and Dong Jingjing used the rootedness theory to explore the differences in the sense of place among residents, merchants, and foreign tourists in Nanluoguxiang, Beijing, concerning the historic district [6]. Hu Xianyang and Bai Kai et al. used the Qujiang New District in Xi'an as a case site to empirically explore the construction of a sense of place for local immigrant groups using Q methodology [7]. It can be found that the research objects of the domestic sense of place research are becoming more diversified, extending from those mainly targeting tourists and community residents to residents, immigrants, and special groups. Besides, the research methods are mostly borrowed from foreign research methods, but the quantitative method is the main research, lack of diversified research methods. For the spatial value perception of urban parks, some scholars have carried out many explorations, including landscape perception, cultural perception, etc. [8-9], but there are fewer researches specifically from the perspective of sense of place.

This paper introduces the concept of Place Meaning and tries to explore the emotional connection between the specific space of historical parks and local users through the users' value perception of historical parks,
emphasizing the information framework of "space + event", and reflecting the basic process of human-space interaction in historical parks as a unique type of public space. Scientific research on the spatial representation of Place Meaning can provide a reference for the transformation of urban historical parks, highlighting the image of the urban environment and historical culture, and meeting the construction of urban environmental engineering in the new situation.

2 Study Area

People's Park (also known as the First Park and Central Park) is the earliest comprehensive park, located in the old city district of Guangzhou's Yuexiu District, with a total area of 44,600 square meters. (Figure 1). As the first free park in Guangzhou to have its walls removed, People's Park, located on Guangzhou's traditional central axis, is not only a place for recreation and sports for the people living and working in the neighborhood, but also a green oasis in the hustle and bustle of the city, and carries the history and memories of the city (Figure 2).

In the process of urban planning, the transformation of historical parks is often controversial. On December 2020, People's Park was transformed into a landscape optimization and enhancement action with the strategy of "showing the axis, opening up the interface, improving the space and enhancing the quality", which attracted the opposition and doubts of many experts and citizens. From the perspective of urban pattern planning, the People's Park carried out a "sparse forest and grassland", and 213 trees moved away to broaden the interface of the city's central axis, destroying the historical appearance of the historic park, and the same time, the renovation led to a reduction in the city's green volume and ecological benefits, which broke the public's perception of the local significance of the People's Park. Taking People's Park as an object, this paper explores the spatial representation of park values by users from the perspective of Place Meaning, to understand how it is embodied in the historical park space, and how it is experienced and perceived through the environment, individuals, and interpersonal relationships.

3 Data and methods

This paper will use a combination of semi-structured interviews and a cognition map to carry out the research. Firstly, through reviewing and referring to a large number of related literature, to summarise the dimensions of place meaning related to historical parks. Under the screening of experts, four-factor dimensions of local significance of historical parks obtained: History and Culture, Leisure and Recreation, Landscape Ecology, and Social Interaction. Semi-structured interviews were conducted in the field based on the four cognitive dimensions, and then the cognition map [10] was used to explore the spatial representation of the value cognition of the Place Meaning dimension.

3.1 Research samples

A group of people aged 15 to 70 with strong recognition ability was selected, and 50 urban residents were chosen as research subjects concerning the sex ratio of men and women in China's total population and the distribution of various age structures in the Seventh National Population Census, and 49 valid samples obtained in the end.

3.2 Spatial labelling and production of Cognition Map

By the principle of open questions followed by qualifying questions, the respondents were first asked about the spaces or places that they had an impression of. Then, based on the AHP hierarchical analysis method to confirm the park value perception factor in the dimension of Place Meaning, considering easy to be understood by the interviewees, and at the same time conforming to the content of the study, the qualifying questions in the cognition map were formed from the value perception conclusions, so that the interviewees could spatially
4 Spatial representation of park values at the level of Place Meaning

The spatial representation of crowd perception was analyzed by involving the crowd in the identification according to the dimensions of general impression and Place Meaning. All of samples were used to receive the spatial perception map of the crowd using GIS technology, and the distribution map of the respective spatial representations of the parks for the value perception factors of place significance could also be obtained.

4.1 Characteristics of the spatial distribution of impressionistic sites in the park

4.1.1 three-level gradient distribution

The overall distribution of sites with significant impressions by visitors in the park was uneven, characterized by a 3-level gradient distribution. Using point density analysis, all visitor impressionable sites can be divided into 3 density gradients in general (Figure 3): high density (the number of visitor impressionable sites is 10 or more), medium density (the number of visitor impressionable sites is 5-8), and low density (the number of visitor impressionable sites is 2-3) (Table 1).

<table>
<thead>
<tr>
<th>Regional classification</th>
<th>Location/Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-density areas</td>
<td>Park gate square</td>
</tr>
<tr>
<td>Medium-density areas</td>
<td>Campus centre, East exit, Origin square, Left and right side squares</td>
</tr>
<tr>
<td>Low-density areas</td>
<td>The northern part of the park, the north-eastern part of the park, the passages connecting the three squares on the main axis of the park, etc.</td>
</tr>
</tbody>
</table>

4.1.2 Laws of diffusion of hierarchical scales

There is a hierarchical scale diffusion law for impressionistic location in the park for usage and perception. Hierarchical scale diffusion law includes the core node, medium node, and general node. The dominant influencing factors of different levels of nodes are various. The distance of the core node, medium node, and general node from the main entrance increases sequentially, and the core, medium, and general node also have their distribution patterns (Table 2).

<table>
<thead>
<tr>
<th>Node grade</th>
<th>Law of distribution</th>
</tr>
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<tbody>
<tr>
<td>Core nodes</td>
<td>Distance from main entrance impacts, including plaza near entrance area.</td>
</tr>
<tr>
<td>Medium nodes</td>
<td>Small and medium-sized building impacts, including kiosks, etc.</td>
</tr>
<tr>
<td>General nodes</td>
<td>The natural environment and the overall layout of the park, such as the lawn, the shade, and the central axis of the park, as well as a variety of plazas, but also factors such as the number of people in the event.</td>
</tr>
</tbody>
</table>

4.2 Characteristics of the spatial distribution of impressionistic sites in the park

Residents to four types of factors of the aggregation area selection are very different. Four types of factors under the conditions of the distribution of the core node, and medium node space are large differences, but there is an overlap of the factor nodes, the general nodes are distributed in the park near the central axis. (Table 3)
### Table 3. Four Types of Factor Spatial Cognition.

<table>
<thead>
<tr>
<th>Historical and Cultural Factor</th>
<th>Leisure and Recreation Factor</th>
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</thead>
<tbody>
<tr>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
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</table>

<table>
<thead>
<tr>
<th>Landscape Ecology Factor</th>
<th>Social Interaction Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Diagram" /></td>
<td><img src="image4" alt="Diagram" /></td>
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</tbody>
</table>

#### 4.2.1 Historical and Cultural Factor

It is mainly influenced by the placement of historical objects, especially ancient buildings and sculptures, objects rich in antiquity are the best sites for people to remember history and culture. The core nodes and medium nodes are mainly located in the Music Pavilion, Lu Xun Sculpture, and the southern square area.

#### 4.2.2 Leisure and Recreation Factor

Core nodes are dominated by the intensity of crowd activity and medium nodes are guided by children’s recreational facilities. The core nodes and medium nodes are mainly located in the southern part of the park in the symmetrical large square.

#### 4.2.3 Landscape Ecology Factor

Its core nodes are largely absent, medium nodes are mainly influenced by accessibility, and general nodes are influenced by the green environment. Among them, the medium nodes are mainly located in the Lu Xun Sculpture and the eastern activity site in the center of the park.

#### 4.2.4 Social Interaction Factor

It is mainly influenced by the size of the event space, which is concentrated near the main entrance or around the main axis of the park. The core nodes are mainly located in the central axis area of the park and the area of the Village Rhythm Exchange Park.

#### 4.3 Spatial Perceived Differences in Place Meaningful Value Factors

The perceived intensity of the core nodes of the whole park (from high to low): Social Interaction Factor > Leisure and Recreation Factor > Historical and Cultural Factor > Landscape Ecology Factor. The perceived intensity of the medium nodes of the whole park (from high to low): Leisure and Recreation Factor > Social Interaction Factor > Historical and Cultural Factor > Landscape Ecology Factor. The perceived intensity of the general nodes of the whole park (from high to low): Historical and Cultural Factor > Leisure and Recreation Factor > Social Interaction Factor > Landscape Ecology Factor.

Perceptions of Historical and Cultural Factor are strongest at the general node (Northern part of the park).
in the park. Perceptions of Leisure and Recreation Factor are strongest at the medium node (Left-hand event space and Right-hand event space) in the park. Perceptions of Landscape Ecology Factor are more dispersed, with lower intensity of use for all 3 levels of nodes. Perceptions of Social Interaction Factor are strongest at the core node (Entrance Square) and the medium node (the plaza near Entrance Square) in the park.

5 Conclusion and discussion

In the construction of urban environmental engineering, historical parks are an integral part that cannot be ignored. The significance of environmental protection construction of historical parks is far more than adding greenery to the city, it also has the needs of carrying people's local emotions and meeting the needs of individual users' rest and interaction, which need to be focused on in urban planning. In this paper, we take Guangzhou People's Park as an example and use cognitive maps to complete the exploration of the spatial representation characteristics of the Place Meaning of historical parks.

It is found that: the spatial representation has differential characteristics when based on different dimensional factors: firstly, the clustering and hierarchical nature of the distribution of visitors' impressionistic sites; secondly, the variability of the selectivity of the sites under the conditions of different factors; thirdly, the heterogeneity of the influencing factors of the site selection of various factors; and fourthly, the site selection of different factors presents a correlation with the level of nodes.

This paper studies the spatial manifestation of residents' perception and experience of the value of historical parks and summarises its patterns. The results of the study show to some extent that the public's perception and experience of the ecological landscape of Guangzhou People's Park is weak, further reflecting the urgency of China's ecological environment construction of urban parks. Guangzhou, as a pioneer city in ecological environment construction and a city with historical heritage, the renewal and reconstruction of the city's historical parks is one of the priorities of its urban planning.

References