

論文の内容の要旨
Abstract of Dissertation

CLUSTERING PLACES
Character and Activity in Ueno Park
(場所の階層性に関する研究
上野公園の特質と人々の活動について)

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1 Introduction

Place is one of the many unclear complexities which arises when we study our relationship with the environment, and no ultimate definition can be found for it. Instead, the many available distinctions are coming from a variety of fields, and they generally reinforce the idea that place is not a purely spatial phenomena (although space is, indeed, an important part of it). Place is, above all, *human experienced space*, and this is the reason why many fields had attempted to study and define it. This research states that there is a common structure for the place, and proposes a methodology in order to identify, measure and graphically represent the components of this common structure. The proposed methodology was tested through a case study in Ueno Park, showing that the common features of the place could be incorporated as concrete variables into the architectonic research and design process.

2 The structure of place: theoretical background

In order to define which elements of the place are part of its common structure, the literature review focused first on the history and evolution of the concept. It becomes evident that in philosophy, not a loud but steady discussion has been evolving since Aristotle, passing through Descartes, Kant and Heidegger, to contemporary philosophers like Edward S. Casey. The range of the discussion goes from giving to the place an almost cosmical, metaphysical quality of transcendental nature, to consider it merely from its physical attributes, just the site or location where a building or someone is. Divergency about the place can be found in Architecture as well. Some architects regards the place as the retainer of everything that the act of dwelling should be (Charles Moore and Norberg-Schulz), while others completely separate the place from the design process (Koolhaas), defending the decontextualization of modern architecture. The implication of this fact raises a problem. In the architectonic discourse regarding the place, what we usually find are ideologies, rather than methodologies. Yet regardless of the position that architects may choose towards the place, there is an unavoidable fact: any work of architecture has to be located on a place, and more importantly, any work of architecture will generate a place.

3 Proposition and Hypothesis

Places may have many meanings depending on the person who is experiencing it (individual scheme of a place), but at the same time, some features of the place are recognizable for all of us (common scheme of

a place). Most of us are provided with the same perceptual tools, and we all know how to be in our environment. We share a common world. Hence, at some point, it should be a common structure of the place. The research starts with the hypothesis that the common structure of a place made up by three main components: Architectonic Elements, Visual Scenery and Activity. Following, a methodology for measuring these components is proposed and executed through a case study in the first public park of Tokyo: Ueno Park.

4 Case Study in Ueno Park

Ueno Park was suitable to this research for many reasons. First, Ueno hill has been related to leisure activities since the Kanbun era (1661-73). Site of battles and refuge during natural disasters, the park has been through many changes, both in itself and the part of the city around it. As a result Ueno park is composed by a big variety of sub-places, allowing a diversity of activities. Because of their variety both in characters and elements, the sub-places of Ueno Park are very different between them, and some of them may seem disconnected from each other. Nevertheless, Ueno Park stills manage to retain a sort of integrity as a place. Also, the size of the park allows conducting the research in the totality of its sub-places.

4.1 Case study: Defining the boundaries of Ueno Park's sub-places

The theoretical review showed that boundaries are a major factor when defining a place, because they provide the frontier between what is here and what is there. It is also one of the main reasons why, in cartography or geography, place hasn't been introduced as a concrete spatial unit. Of course that to study the space as a system of places has been considered before, because a place is, indeed, a recognizable feature in the space. The main problem is that its boundaries are not always linked solely in the interaction between solids and voids. There are more subtle distinctions which can be crucial for defining a place (like a change of pavement, or a change in the level of enclosure between spaces), distinctions difficult or impossible to acquaint from an urban scale or geographical scale. This problem was addressed before by Kevin Lynch, and he proposed a methodology for categorizing the urban landscape from a perceptual point of view. The research shows that his methodology can be adapted surprisingly well to the Park, even that is not completely an urban landscape, but a combination between urban and natural landscapes. Features like hills, slopes or shores can be identified as edges, districts or nodes as well. This allowed sub-dividing the park into 33 sub-places, translating it into a network of places where its components can be now scrutinized.

4.2 Case Study: Defining and measuring the components of the place

The components of the common structure of a place were defined as: Architectonic Elements, Visual Scenery and Activity. The next step was to define a methodology in order to register and measure these components in each one of the 33 sub-places of Ueno Park.

Architectonic Elements

First component of the place, the architectonic elements are essential when defining boundaries and space of a place, and allowing or not certain activities to happen in them. Every element which could be found in a sub-place was first mapped, counted and later categorized by form and function. At the same time, most categories contained different types of elements within it. This categorization proved itself consistent, including all elements in the park.

Visual Scenery

The second component of the place is defined as the visual perceptual field that can be experienced when being in a place. It is made by the relationship between natural elements and man-made elements, comprising a unified whole. A place is not only made by the features within its boundaries. Every place offers a unique perspective of the environment, and this unique perspective is as part of the place as its space and its elements. By using 360 degree panorama pictures, the average scenery was registered from every sub-place. Then, the pictures were segmented into the proposed categories which comprised the visual scenery of the park. The areas of the segmented categories were then calculated, allowing measuring the visual scenery of each sub-place.

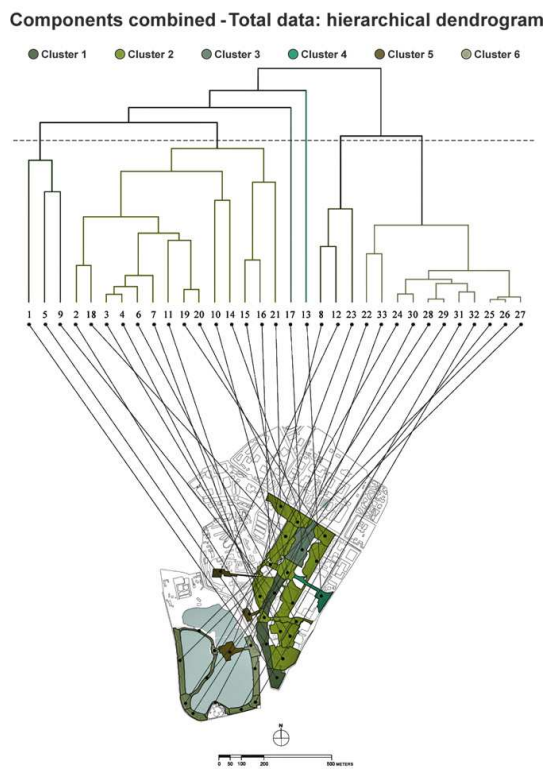
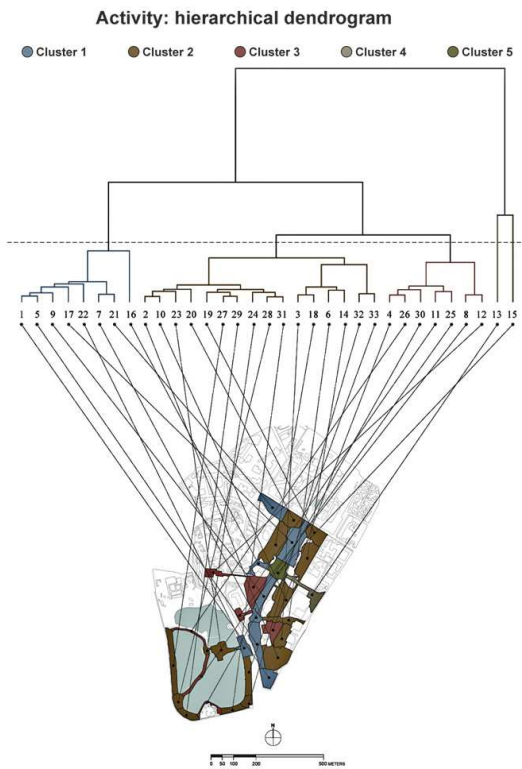
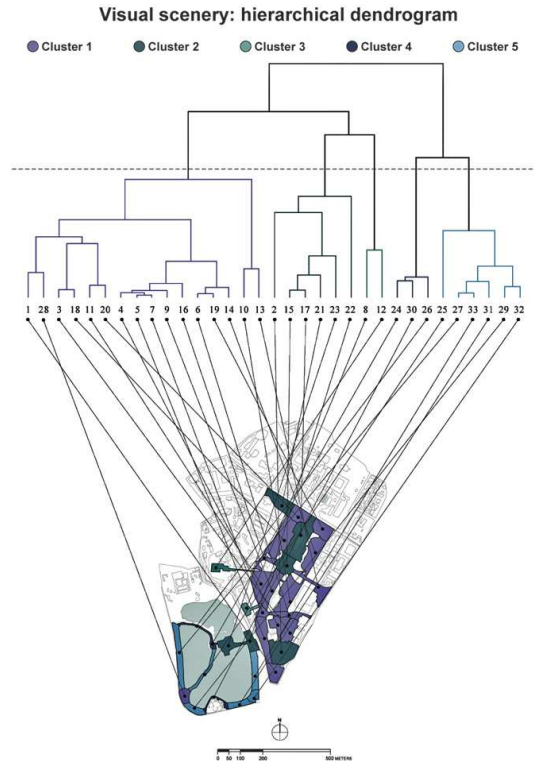
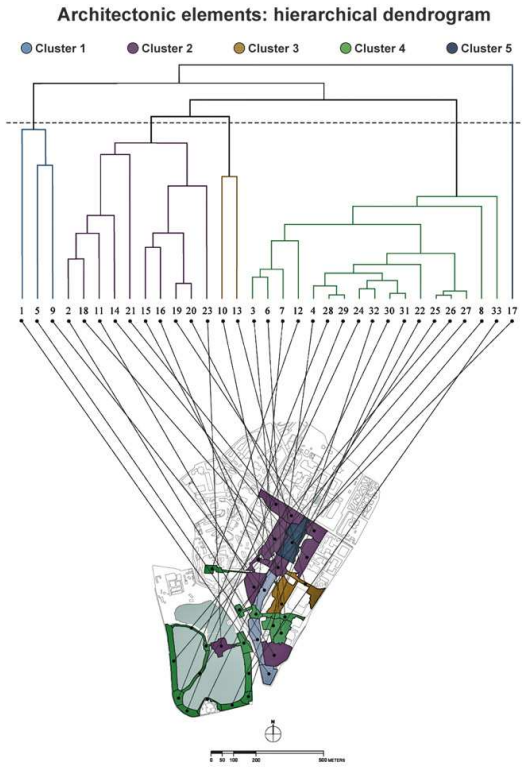
Activity

Third component of the place is defined as the use and relationship which the people establish with a given space. Yet relationship between activity and space is a complex one, and is difficult to draw a clear division between when our activities dictate how our environment should be designed, and when our environment defines how our activities occur. They both permeate each other constantly in our places, especially in public ones. Stating that the way in which people use a space is a concrete place-making-coordinate, the case study proposed a methodology in order to measure the intensity of activity in each sub-place. This allowed two main things: to incorporate activity as a concrete component for the analysis, and, by using Activity Counter Maps, it was possible to visualize how the activity distributed in the park throughout the studied day. In other words, activity was studied in relation to the total (Ueno Park) and the parts (sub-places).

5 Cluster analysis

The next step on the research is focused on the analysis of the collected information. When the data collection was finished, the result was a database of Ueno Park, where each sub-place has a total of 103 place variables assigned to them. The database allowed us to do cluster analysis (Ward's method) in order to group the places not by their correlation in the space, but by their similarities or differences as places. The cluster analysis was made for each one of the components (Elements, Visual scenery and Activity) and one more using the totality of the data. Hence, every sub-place belongs to a specific cluster in each one of the four performed analyses.

5.1 Cluster analysis: results



6 Conclusions

When the cluster analysis was performed for each component, the clustering results would clearly speak about the relationship between the sub-places of the park regarding those specific components. Indirectly, they may contain information about other features of the place. For instance, it is reasonable to assume that the places with high quantities of benches will have more people sitting in them than the ones with no benches at all. So in this case, the presence of an element tells about the possibility of an activity, yet in a vague, imprecise fashion. Another example of this is the already mentioned high activity in sub-place 13. Someone unfamiliar with Ueno Park and its surroundings could look at those results and assume that sub-place 13 is the main access. So the results of the activity clusters could, indirectly, suggest spatial organization. In other words, every component speaks very precisely about itself, yet more vaguely about the character of the sub-places. This is because place is an overall phenomena. The operation of breaking a place down into components was necessary in order to understand its structure, and more importantly, to be able to quantify its structure. Once the quantification was done, and the components individually analyzed and understood, the final step was to combine all the components and analyze them as a whole. The risk of this operation was that places evidently unrelated could end up grouped together in a cluster, indicating an inconsistency in the methodology, or a missing component. This was not the case. The cluster results of the data combined were enthrallingly coherent.

The results of the cluster analysis allowed us to translate features that cannot be geographically measured (the components of the common place) into geographical information, which was one of the aims of the case study: to propose a geographical representation of the park as a system of places. The conclusions are divided in two scopes: the first one is regarding the specific case study in Ueno Park. The methodology made possible to study the park from a perceptual point of view, geographically representing place-features that wouldn't be otherwise evident and visible, showing that the methodology can be used for place research in Ueno, and adjusted to be used in other places as well. The second scope is regarding the place as a general concept. The consistency of the results shows that the place can be partially (not totally) objectify. The introduction of a common structure of a place can offer valuable inputs for the research of the environment and the design of public spaces.