

A Study of the Development of City Parks in Japan since the 1970's

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ABSTRACT

The purpose of this paper is to study the development of city parks in Japan since the 1970's. The result of investigation is as follows; (1) Regarding research of city parks since 1970, applying the qualification theory III, The researches of the park were divided into the categories as follows; (i) children's playground, (ii) the spatial function of green tracts of land, (iii) the evaluation of actual use viewpoint, (iv) the historical viewpoint, (v) the natural environment protection viewpoint, and (vi) the social capital, citizen's participation and park management viewpoint. (2) the researches of the actual use viewpoints are increasing. This trend shows that the research viewpoints have been shifted from the individual using to the various subjects of using. (3) The researches of the historical viewpoint, researches focusing on Asia are increasing. This trend shows that the research viewpoints have been shifted to the relationship between the planning and the realization. (4) The research on the natural environmental protection viewpoints has seen a large expansion from the evaluation of forest in parks. (5) The social capital, citizen's participation and park management viewpoint were increased, as well as community development and the spreading effect.

Key Words: City Park, Trends of Research, Development, Problem, The Qualification Theory III

I. Introduction

As Japan enters the 21st century, its most pressing issues include developing a mature society at the community level from its aging and declining population, as well as tackling the global problems of stabilizing greenhouse gas output and preserving its ecosystem. In response to these issues, city parks are being looked to as a possible way to improve the environment, increase the safety of urban communities, provide a place for citizens to rest, and build a sense of community. As of the end of March 2006, the area of parks totaled 109,178ha(91,663 locations). This effective park area is converted to about 9.1 square meters per person, in comparison with area 14,791ha in 1955 before the City Parks Law was enacted(2.1 square meters per person) an increase of 7.4 times¹⁾. Because 50 years have passed since the City Parks Law was put into effect, I believe it is meaningful to look back at the study of effective parks throughout the process of the accumulation of park maintenance until the present day,

and search for ways to meet the future needs of today's various parks. Therefore this research will study the general transitions and tendencies of park research since the City Parks Law came into effect.

II. Viewpoint of This Study

In this study, I will evaluate the park development process based on two general categories: first, their economic effect through the open space theory(the effect of existence) as an open green space, and second, their use as a sports and recreation area. Then we will grasp any trends in city park research, considering any changes in societal conditions from the institution of the new City Planning Law in 1970 until today, and typify each viewpoint. I will investigate the topics and viewpoints of city park research during the 50 years since the establishment of the City Parks Law, and relate it to the history of city park history²⁾. Furthermore, I will survey research publications such as "Architectural Institute of Japan"

of Architectural Institute of Japan, "Papers on environmental information Science" of Center for Environmental Information Science and "Journal of the Japanese Institute of Landscape Architecture" of The Japanese Institute of Landscape Architecture, as well as "City planning review" of City Planning Institute of Japan, in order to grasp the trends of studies regarding city parks. For the research I use in this study, I will focus on research that in general focus on green tract of land composition, and analyze the general layout and view.

III. The Genealogy of Past Research

1. Development of the Green Tract of Land

An effective park is composed of urban facilities in the city planning control system (the City Planning Law 11th article). Therefore, when conducting this research, it is necessary to put in order how the study of effective parks has developed under the city planning control system. According to Akira Sato²⁾, during the five years between the years 1921 and 1925, many city plans and literature regarding city planning were published. Since the City Planning Law was established in 1919, the necessity of city planning for disaster prevention and refuge was more widely acknowledged, and understanding made universal by the Great Kanto Earthquake in 1923. City parks have since been widely studied in city planning, architecture, garden design science and several environment fields. The following genealogy is followed and these studies have been investigated³⁾: Souji Kikuchi⁴⁾ published the results of his research entitled "The Establishment of Open Space System" through the Japanese Institute of Landscape Architecture, but at this time the green tract of land was still regarded as an open space, and thus subject to regional legal restrictions considered open space a private possession. When the City Parks Law was enforced in 1957, it increased the recognition of the necessity for parks and open space remarkably in cities suffering from high congestion and the loss of a natural environment and recreation. City open space plans were increasingly drafted and performed by local governments, with financial support from the state subsidy of the Ministry of Construction. Rikio Takahashi⁵⁾, among others, has discussed the open space theory, which values public open space as more than just a place for children to play. The term "open space" has well known after

1962, and was introduced into law by the establishment of the new City Planning Law^{6,7)} in 1968. The desire to preserve a natural environment in the face of pollution problems in the 1970's in particular made it universal. It was important to establish the planning of parks and the green tract of land, and carry this out as a means to protect the natural environment. Open space planning and protecting the natural environment became in the national interest. The approach of this study was considered from the viewpoint of these concerns. Furthermore, Akira Sato⁸⁾ introduces the historical significance of open space and its definition in foreign countries, and moreover discusses the importance of open space in private possession in 1969. On the other hand, public opinion regarding the purpose of this plan, the response to citizens and consciousness developed simultaneously with the physical survey analysis previously mentioned, and it became necessary to consider the thoughts and methods of both sides when proposing plans. A survey analysis was performed using maps and aerial photographs, and a suitable mesh method was utilized. The present state of civilization, and the physical geography relating to open space have been made the target of surveys of present conditions. Among these, studies about the quality of the vegetation and the amount of green have also become popular.

2. Development of the Evaluation of Actual Use Viewpoint

As recognition for the necessity of children's playground rose, studies developed from a child's psychology and a sociological point of view. These studies can be placed into two main categories. The first category is of studies that made the proper arrangement its viewpoint. It began with Reijou Ooya⁹⁾ shifting from city planning in 1924~1925 to the arrangement of child parks, their scale and facilities, etc., in the cities of Osaka and Sakai, and established the scientific theory that sets the radius of children served to 5 towns (about 545m). Next Tsutomu Kano¹⁰⁾ investigated conditions in small parks in the city of Nagoya and calculated the scale of parks.

Tokutarou Kitamura¹¹⁾ determined the required area of children's parks from the activity time per person and the number of visits on in 1932 and calculated according to age class. It is assumed he referred to books by the American Butler and the German Wagner's in making these calculations. This

theory established by Tokutarou Kitamura in 1933 became the Department of the Interior's park planning standard, and was succeeded by the plot planning of today's City Parks Law. Following this, city planning studies and unit measurements quieted for a period. The second category is of studies of the use of parks by children. It is assumed that Kunio Yanagida and Masu Sueda¹²⁾ were investigated during the prewar days. Taro Osamatsu¹³⁾ published the results of his research about the area of children's park, showing quantitatively that children's parks in our country are small and concluded we need 1.5 square meters per resident population. An actual condition survey by Tadashi Kanai¹⁴⁾, Hisao Fukutomi and Masao Takahashi¹⁵⁾ was performed analyzing the rate of utilization of children's parks, and theoretical investigation in this area has been begun gradually. The actual use of children's parks and the state of children's park planning in our country were investigated by the study for Rikio Takahashi, Kimio Kondo and Shintaro Takahashi in 1950's. The City Parks Law was established in 1957, but there were frequent traffic accidents due to the development of automobiles, becoming a social problem, demonstrated by reports from the head of the Ministry of Construction "regarding urgent measures to protect children from traffic accidents" and "regarding the establishment of park of traffic education and operation" in 1968. The first city park maintenance five-year-plan in 1972 was based on the city park urgent measures law, beginning the nationwide effort to maintain in earnest city parks based on implementation plans. Kimio Kondo¹⁶⁾ investigated the use conditions of children's parks in the city of Osaka (area: 1.5ha), and the amount of children's playing rate in the park is indicated. Furthermore, this park is a special case due to its wide area, but children's parks in our country are remarkably small compared with those in foreign countries. Hisao Fukutomi¹⁷⁾ published the results of his overall research about children's parks along with the outcome of past studies. The contents investigate the actual use of children's parks and measure the rate of utilization and service radius, and the pattern is checked with the child's area of idle behavior and area of play, measuring the play space and pattern in both residential and school areas, producing an over picture of children's play.

IV. Recent Trends in the Study of City Parks

1. Analysis Method

In order to look for trends in city park research in recent years, a total of 159 studies of parks from 1970 to 2005 were chosen as shown in the key-word research paper in Table 1. To look for the trends of the effective park study to follow, I established 23 key words, consisting of 7 viewpoints - classification, area, target, kind of park, viewpoint, and method - are shown in Table 2. Next, those studies that were relevant were marked "1", and those that weren't were marked "0", and all 159 studies were individually evaluated. In addition, to grasp the major trends in the table, the qualification theory III was applied and analyzed. In the right column of Figure 1 is the quantity obtained by qualification theory III. In Table 1, this category quantity is indicated on the X-axis, and theory II is indicated on the Y-axis. First, from the fact that in the graph "Their Using theory" is expressed in the negative direction, and "Open space theory" is expressed in the positive direction of the X-axis, the study was carried out with the first and the fourth quadrant expressing "Open space theory", and the second and third quadrants expressing the "Their Using theory."

Next, the key words of "children", "small park" and "Investigation of actual conditions" etc. were grouped into the third quadrant and similarly the categories of "(i) children's playground viewpoint" and the keywords grouped into other quadrants respectively, with the remaining five respective groups being: "(ii) spatial function of green tracts of land - the system analysis and evaluation viewpoint", "(iii) the

Table 1. Review

Publicaion	Review	Number
City Planning Institute of Japan	City Planning Reivew	68
Architectural Institute of Japan	Architectural Institute of Japan	35
The Japanese Institute of Landscape Atchitecture	Journal of the Japanese Institute of Landscape Architecture	50
Center for Environmental Information Science	Papers on Environmental Information Science	6
Total		159

Table 2. 23 Key-words

Division	Number	Key Word	I-axis	II-axis
Kind	A1	Their using theory	-1.033	-0.475
	A2	Open space theory	1.335	0.583
Outside or Inside	B1	Outside of part	0.933	-0.625
	B2	Inside in park	-0.847	0.642
Object	C1	Foreign countries	3.093	-1.139
	C2	Central city	-0.212	-0.001
	C3	Local city	-0.700	0.060
Parks	D1	Small park	-0.268	-0.335
	D2	Large-scale park	0.588	0.225
View Point	E1	Children	-0.427	-2.704
	E2	General	-0.975	-0.494
	E3	Infrastructure	-0.130	4.649
	E4	Disaster and Crime	-0.230	0.039
	E5	Elderly and Handicapped	-1.576	-0.518
	E6	The resident's participation	-0.349	3.270
	E7	Management	-1.316	2.078
	E8	Natural environment	1.551	0.794
Method	F1	Social investigation	-0.770	-0.550
	F2	Humanities investigation	1.857	-0.320
	F3	Systems analysis	-0.147	5.172
Field	G1	Plan	1.709	-1.361
	G2	Investigation of actual conditions	-1.211	-1.346
	G3	Evaluation	0.023	1.891

various users' actual grasp viewpoint", "(iv) the historical thought viewpoint", "(v) spatial function of green tracts of land - the natural environment protection viewpoint" and "(vi) the social capital, citizen's participation and park management viewpoint".

2. The Different Viewpoints of Studies about City Parks in Detail

1) Children's playground viewpoint

The researches of the viewpoint of child's playground were as follows: the model of city park planning was established playing and amount of time used, the active space and the condition of relation to residence place, access mode, analyzed about the inducement distance.

2) The spatial function of green tracts of land-system analysis and evaluation viewpoint

Research on evaluating city parks as open space are also achieved, for example, on following viewpoints: relating to city development, comparing population and distance, evaluating the use of land districts, evaluating the function of green-belt and comparing the situations between cities were conducted.

3) The evaluation of actual use viewpoint

Accompanying the rise in the implementation of city park laws, it became necessary to shift the use of park research. In recent years, the researches of the actual use viewpoints are increasing, such as the evaluation of actual use viewpoints are as follows: the expanded to their various uses, crowded feeling, the surrounding environment and water, the access mode, the condition of the school, the duration of stay, the evaluation of satisfaction parks in regional cities, the demand of the elderly and handicapped. This trend shows that the research viewpoints have been shifted from the individual using to the various subjects of using.

4) The historical viewpoint

Among overseas studies regarding historical, there are studies of European and American green tract land maintenance and landscape planning, city disaster prevention and park planning, and regional planning viewpoint. On the other hand, in recent years, researches focusing on Asia are increasing, such as the comparison of policy park development and social contact, the movement of population density distribution. Japan's historical researches were as follows: the relation between recreation space and formation of city parks in the past, research on the planning in Tokyo, the concept of the establishment of park way. On contrast in recent years, this trend shows that the research viewpoints have been shifted to the relationship between the planning and the realization.

5) The natural environment protection viewpoint

The research on the natural environmental protection viewpoints are as follows: the elements of scenery, the components of the sound, the pattern of scale and shape of city parks. As for studies that touch upon the green function in detail, an increase was seen in studies such as the evaluation of forests within parks, the measurement of CO₂

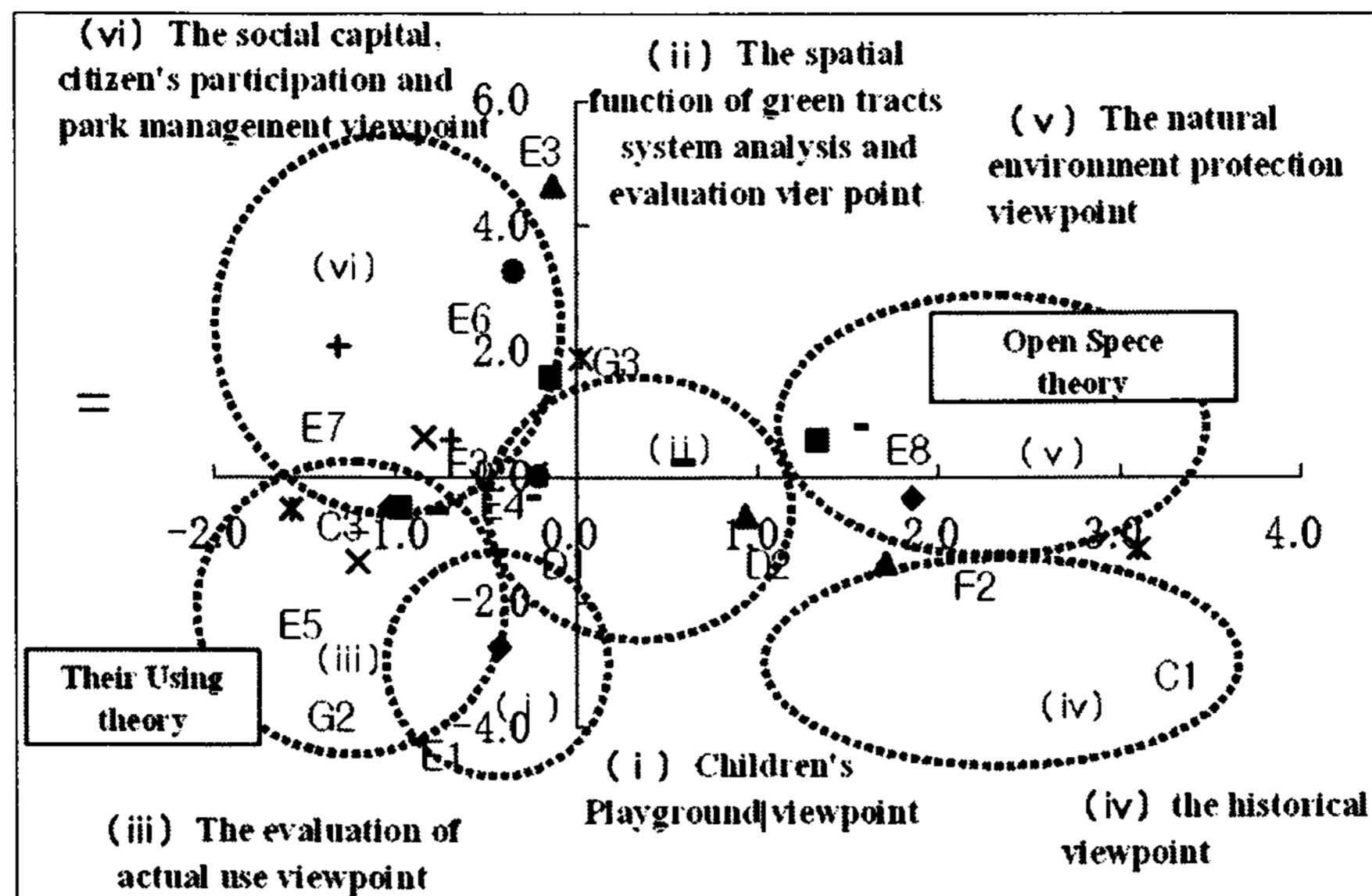


Figure 1. Type of Review by Analysis

levels using a laser scanner, and forest distribution and the estimation of carbon dioxide levels. In addition, there is also a group of studies responding to the diversity of living creatures, including a study of insects, the distribution and influence of bird diversity and open space, the evaluation of parks as a place for environmental education, and their role as a space for children to have contact with nature. The researches focusing on polity are increasing.

6) The social capital, citizen's participation and park management viewpoint

The researches on the viewpoint of the social capital were as follows: the property value was determined using Contingent Valuation Method for evaluating disaster prevention, and Travel Cost Method for evaluating economic value. In recent years, this trend shows that the research viewpoints have been shifted from asking how many different viewpoints to take to asking how to maintain the current stock, and how to reflect input from regional citizens. The researches of the park management viewpoints and the regarding resident participation were increased, as well as community development and the spreading effect.

V. Conclusion

This study aimed to look for the viewpoints and topics of research over the past 50 years regarding city parks, and found the following trends: (1) According to our literature

survey, the major theme of research during the period of the establishment of the city park system was determining how the appropriate arrangement planning should be. (2) The model of city park planning was established thorough analyzed about the inducement distance which was on the survey of users in urban area. (3) Regarding research on city parks since 1970, applying the qualification theory III, The researches of the park were divided into the following categories as follows: (i) children's playground, (ii) the spatial function of green tracts of land, (iii) the evaluation of actual use viewpoint (iv) the historical viewpoint, (v) the natural environment protection viewpoint, and (vi) the social capital, citizen's participation and park management viewpoint. (4) The researches of the actual use viewpoints are increasing. This trend shows that the research viewpoints have been shifted from the individual using to the various subjects of using. (5) the researches of the historical viewpoint, researches focusing on Asia are increasing. This trend shows that the research viewpoints have been shifted to the relationship between the planning and the realization. (6) The research on the natural environmental protection viewpoints, focusing on polity are increasing. (7) For the field of the evaluation of social capital, the shift to models in determining the value of city parks, and the promotion of citizen participation in the management of parks has been researched. To this end, the results of research from the viewpoint of future use and management have been established as future planning and design methods. The development not only city

planning policy, but also technology addressing environmental issues at a global scale are looked to in anticipation.

REFERENCES

1. Akira, S.(1968) Open space theory, Shin-Toshi(23), pp. 15-24.
2. Akira, S.(1977) Historical development about City park in Japan, Toshikeikaku-kenkyujo.
3. Arihiro, M.(1973) A Study on Children's Living Condition in the City, City planning review(9), pp. 81-86.
4. Hisao, F. Masao, T.(1954) Investigation of Children's Playgrounds in Tokyo, journal of the Japanese Institute of Landscape Architecture (17), pp. 14-24.
5. Hisao, F.(1974) The Study on Conditions of Children's Playground, Department of Gardening in Chiba University of Chiba special report(10).
6. Japanese Institute of Landscape Architecture(1999) Development of Landscape in Japan, Gihodo-shuppan.
7. Kimio, K., Miyoko, S., Sachie, Y.(1970) On the User's Research at a Big Children Playlot, journal of the Japanese Institute of Landscape Architecture (2), pp. 43-46.
8. Masu, S.(1942) Jido-Kouen Shimizu-shobo.
9. Reijo, O.(1933) A Study on playground of child in city, Journal of the Japanese Society for Horticultural Science(4), pp. 1-81.
10. Rikio, T.(1959) On the Relation between Children's Play-life and Play-ground, journal of the Japanese Institute of Landscape Architecture (22), pp. 1-4.
11. Souji, K.(1955) The establishment of Open Space System, The Japanese Institute of Landscape Architecture (19), pp. 18.
12. Tadashi, K.(1954) Statistical Study How a Park is Used by Citezen (Rep.1), Journal of the Japanese Institute of Landscape Architecture (14), pp. 17-21.
13. Tadashi, S.(1971) Research on the Structure of open space, journal of the Japanese Institute of Landscape Architecture(35).
14. Taro, O.(1951) On Children's Playgrounds, journal of the Japanese Institute of Landscape Architecture(15), pp. 10-33.
15. Tokutaro, K.(1930) Problem of Open Space in City, Toshi-Kouron, p. 28.
16. Tsutomu, K.(1981) Small park in a certain suburbs and researches on child, Journal of the Japanese Society for Horticultural Science(2), pp. 57-67.
17. Yoshisuke, N.(1972) Research on form of open space in city, City planning review (47), pp. 1017-1018.
18. Ministry of Land, Infrastructure and Transport City and Regional Development Bureau of City Park Data base(2007) http://www.mlit.go.jp/crd/city/park/siryou/database/t_kouen/index.html