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Landscape preference among Chinese visitors to Chinese elements in a Japanese Garden

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Abstract. Koishikawa Korakuen is an Edo-period garden in Japan that was inspired by scenes typical of Chinese gardens. This study aimed to clarify how Chinese tourists evaluate the Chinese elements at Koishikawa Korakuen and compare landscape preferences. The preferred landscapes were determined and analyzed using visitor-employed photography, GPS, and questionnaires. Fifty-seven Chinese visitors were asked to take photos in the garden and select their 10 favourites from among them. GIS was used to identify the positions of the preferred photos. The results indicate that "Full-Moon Bridge" is the most Chinese-looking landscape at Koishikawa Korakuen; the second is the lotus pond. Moreover, spatial analysis was conducted by dividing the garden into six areas. Within these six areas, seven locations showed high levels of appreciation. This study's findings help to clarify the elements Chinese visitors prefer at Koishikawa Korakuen as well as the differences among Chinese and Japanese visitors regarding landscape preferences in Chinese-style gardens.

Keywords: chinese elements, chinese visitors, landscape preference

1. Introduction

The number of foreign tourists visiting Japan has increased in recent years. Among these tourists, the number of Chinese visitors has grown rapidly since 2013. In 2015, Chinese comprised the largest number of foreign tourists visiting Japan [1]. Gardens are popular destinations among these tourists. Experience of landscape comes from the perception of human being, so it could be different from the cultural background that they carried. Hence, it is necessary to add the comparison between different cultures into experience of landscape research. It is well known that Japanese gardens were deeply influenced by Chinese garden culture, and Koishikawa Korakuen is a representative case. By showing this aspect of the historical relationship between Japan and China, Koishikawa Korakuen can potentially trigger cross-cultural exchange. In this way, tourism not only has economic impacts but can also promote cultural communication. Therefore, it is necessary to consider foreign visitors as an important aspect of garden management.

Yorifusa began construction on Koishikawa Korakuen in 1626, and it was mostly completed by his successor Mitsukuni. Since Mitsukuni was influenced by Confucianism (between 1665 and 1682, he was advised by the Chinese Confucian scholar Chu Shun-shui [2], the garden contained many aspects of Chinese landscapes (in fact, the name Korakuen was taken from a song dynasty poem, under Chu

Shun-shui's recommendation [3]. Though some Chinese elements were destroyed as a result of natural disaster (e.g., Kara-mon and Hakke-do), many are still present in the garden today. These include Engetsu-kyo (Full-Moon Bridge) and the West Lake embankment. Moreover, Nobedan is a road paved with natural stones of various sizes, which is also a Chinese landscape technique [4].

Previous studies have clarified Chu Shun-shui's contributions to Koishikawa Korakuen [5]. Others have investigated the garden's history [7, 8, 9, 10, 11], landscape features [12, 13, 14] and use capability. Recently, Matsumoto et al. [6] used visitor photographs to investigate how Japanese people use Koishikawa Korakuen. However, there remains a need for research on foreign visitors to Koishikawa Korakuen and their evaluations of Chinese elements in the garden. Therefore, this study aimed to clarify Chinese tourists' evaluations of Chinese elements at Koishikawa Korakuen and compare landscape preferences between Chinese and Japanese visitors.

2. Methods/Experimental

2.1. Study site
Koishikawa Korakuen is located in Bunkyo, next to the Tokyo Dome and the Japan–China Friendship Center. It was designated a special historical site and scenic spot in 1952 under the Law for the Protection of Culture Properties. This double designation is quite rare, and the site has attracted many foreign tourists.

2.2. Surveys
To clarify Chinese tourists' evaluations, we used on-site surveys as well as visitor-employed photography and GPS. By synchronizing photo time codes and GPS log data, we could identify what the respondents were interested in and where the photos were taken. At the garden entrance, GPS loggers (HOLUX M-241 wireless GPS logger, v. 1.13, MTK chipset) were given to Chinese tourists (including those from Hong Kong and Taiwan). They were asked to take more than 10 photos while walking through the garden using their smartphone or digital camera. After their visit, we gathered the GPS loggers and asked them to pick 10 favorites from the pictures they took. We then conducted questionnaire surveys, which gathered the following:
1) Attributes: 1) age, 2) gender, 3) number of visits to Koishikawa Korakuen, 4) number of visits to Japan, 5) year(s) they stayed in Japan, 6) how they got information about Koishikawa Korakuen, and 7) why they visited Koishikawa Korakuen.
2) Objects of interest: their 10 preferred photos and the landscape elements they liked or disliked.
3) For each photo, 11 options were given concerning the landscape elements they focused on. The options covered the whole composition, trees, flowers, grasses, water landscapes, stones, animals, structures, buildings (outside the garden), facilities, and pavement, among others. They were asked to check "○" for items they liked and "×" for those they disliked. (Preliminary research was conducted on June 10, 2016, with four Chinese respondents. They were asked to take more than 10 photos, select their 10 favorites, and write down the objects they intended to photograph. These data were used to create the options for the questions about objects of interest.)
4) Chinese elements at Koishikawa Korakuen: there were three questions about Chinese elements in the garden: 1) a yes/no question about whether they sensed Chinese taste and flavor in the garden, 2) a question asking them to select one photo they felt reflected Chinese flavor most strongly and check the item they felt had Chinese elements from the 11 options above, and 3) an open question asking them to comment generally on Chinese taste and flavor in the garden.

2.3. Analysis
Based on whether the option "whole composition" was checked in the questionnaire, all photos were divided into two groups: point and space. "Point" refers to photographed objects focused on a single point; "space" refers to photographed content focused on expanded space. Then, based on the

questionnaires, these were divided into 13 types: trees, flowers and plants, facilities, structures, buildings (outside the garden), animals, stones, pavement, water landscapes, paths, spatial trees, spatial flowers and plants, and overlook (Table 1).

Table 1. Objects of interest: types and descriptions.

Type	Interested objects	Characteristic
point tree	○	single tree is the main focus
point flower	○	interested objects are only flowers and grass
sign/facility	○	the sign stone lantern stone tablet
structures	○	structures inside the garden like bridge
buildings(outside)	○	buildings outside the garden
animals	○	interested objects are annimals
stones	○	stones are the main focus
pavement	○	the pavement of path
water landscape	■	water landscape is the main focus, pond, lake
path	■	path is main in the photo
spatial trees	■	composition of trees are valued
spatial flowers	■	composition of flowers and grasses are valued
overlook	■	distance view focused and numerous interested objects

photographed objects those focus on one point were marked with ○

photographed content those focus on space expand were marked with ■
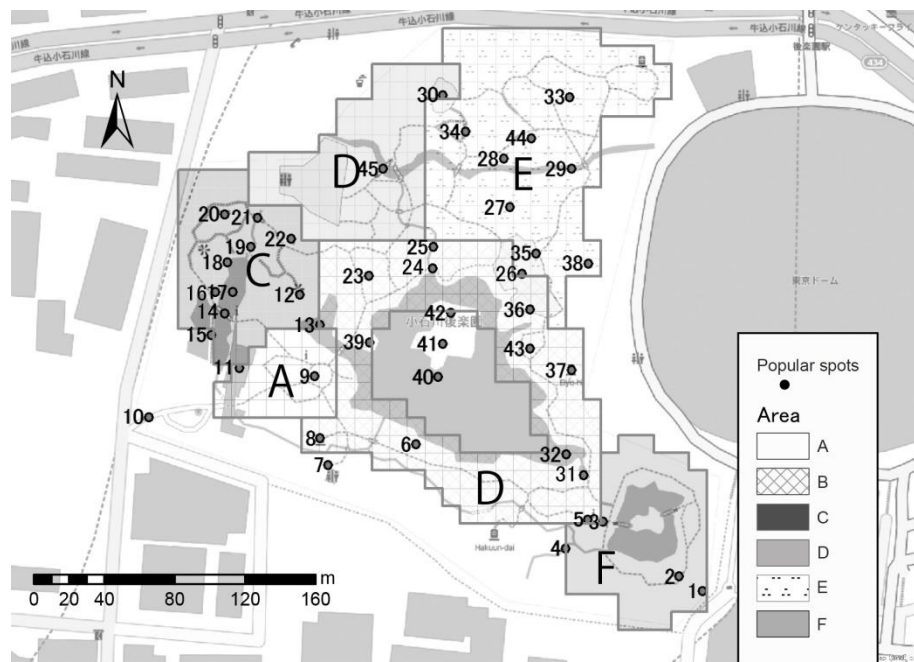
Figure 1. Distribution of each area.

The photos selected as reflecting Chinese taste and flavor were divided into the same 13 types as shown in Table 1. Based on the Chinese elements checked by the respondents, specific Chinese elements were determined (Table 4).

To identify places that interested the respondents, we conducted a two-level GIS analysis. The first was at the zone level. The whole garden was divided into six areas (Figure 1), following Matsumoto et al. (who essentially followed Yoshikawa's research); Yoshikawa noted that zoning lends spatial characteristics to Koishikawa Korakuen. ArcGIS 10.2 and js-STAR 2012 were used for the analysis. Figure 1 shows the locations of the popular spots, which are listed in Table 2.

Table 2. List of popular spots.

No.	area	popular spot	*	No.	area	popular spot	*
1	F	East gate		24	B	Sawatari	
2	F	Monument		25	B	Shiraito-no-taki	
3	F	**Former site of Chinese gate**		26	E	Pine trees	
4	F	Nezameno-taki		27	E	Irises Rice paddies	○
5	B	**Nobedan path**	○	28	E	Wisteria trellis	
6	B	Maple trees		29	E	Furosui	
7	B	Chuhosen-no-hi		30	D	**Former site of Hakke-do**	○
8	B	Former site of Saigyo-do		31	B	Naruto	
9	A	weeping cherry	○	32	B	Chikubu-jima	
10	A	West gate		33	E	Ume grove	○
11	A	Kantoku-tei		34	E	Atago slope	
12	C	**Sho-rozann**		35	E	Kuhachi-ya	
13	B	Lotus pond		36	B	Funatsuki	
14	C	Togetsukyo		37	B	Eiyo-hi	
15	C	**Seiko-no-tsutsumi(West Lake embankment)**	○	38	E	Akamon	
16	C	Byobu-iwa		39	B	Hitotsu-matsu	
17	C	Ogiwa		40	B	Tokudaiji-ishi	
18	C	Sawatari		41	B	Horai-jima	
19	C	Otowa-no-taki		42	B	Benzaiten-hokora	
20	C	Former site of Kannon-do	○	43	B	Ikei-tourou	
21	C	Tsuten-kyo	○	44	E	Yatsuhashi	
22	C	**Tokujin-do**		45	D	**Engetsu-kyo**	○
23	B	Maroya					

The items have pictures on the Koishikawa Korakuen's pamphlet are marked with ○.
The items have Chinese elements are marked in bold.

After zone-level analysis, we performed spot-level analysis. A "hotspot" is a particularly popular place for photos. The whole target area was covered by a grid comprising 10 m sections. Then, the number of photos within each square was calculated. After this, the Getis-OrdGi* statistical technique was used. Getis-OrdGi* is a hotspot analysis technique that calculates the z-score of each grid. This shows whether features have high or low spatial clustering, with each feature examined in the context of neighboring grids.

3. Results

3.1. Respondents profile
The 57 respondents were all from China (including Hong Kong and Taiwan); 23 were male and 34 were female. Thirty-five had come to Japan for a short visit, 14 were visiting Japan for the first time, and six had visited Japan more than 10 times. Twenty-two of the respondents were currently living in Japan for work or school. Forty were visiting Koishikawa Korakuen for the first time while 17 had visited the garden before.

Table 3. Whether respondents sensed Chinese taste and flavour.

answer	yes	no
count	50 (87.72%)	7 (12.28%)

3.2. Chinese elements

Table 3 shows the results for whether the respondents sensed Chinese taste and flavor at Koishikawa Korakuen; 87.72% responded affirmatively.

Table 4 shows that 50.9% of the photos selected as containing Chinese taste and flavor were categorized as structures. Among these, Engetsu-kyo (Full-Moon Bridge) was the most popular, with 40.4% of respondents saying it contained Chinese taste and flavor.

Table 4. Types of Chinese-looking photos.

Interest type	Total	Specific	count	percentage
structures	29(50.9%)	Engetsu-kyo	23	40.4%
		Uchi-niwa	3	5.3%
		Kuhachi-ya	1	1.8%
		Tokujin-do	1	1.8%
		The bridge beside Engetsukyo	1	1.8%
water landscape	11(19.3%)	Uchi-niwa	6	10.5%
		Dai-Sensui	2	3.5%
		Oigawa	1	1.8%
		Inada	1	1.8%
		Kisogawa	1	1.8%
point flower	5(8.8%)	Lotus pond	5	8.8%
spatial flower	4(7%)	Lotus pond	3	5.3%
		Inada	1	1.8%
stones	2(3.5%)	Horajima	1	1.8%
		Atago-slope	1	1.8%
spatial tree	2(3.5%)	Uchi-niwa	1	1.8%
		Shoro-zann	1	1.8%
point tree	1(1.8%)	Pine trees	1	1.8%
sign/facility	1(1.8%)	Stone lantern	1	1.8%
path	1(1.8%)	Dai-Sensui path	1	1.8%
overlook	1(1.8%)	Inada	1	1.8%

3.3 Resources of interest

All 570 photos gathered from respondents were divided into 13 types (Table 1). Hotspots. Using Getis-OrdGi* hotspot analysis, seven hotspots with different characteristics were identified (Figure 2).

Hotspots and landscape types. Hotspot 1 is around the lotus pond. Hotspot 2 is around the West Lake embankment and Oigawaarea. Hotspot 3 is near Engetsu-kyo. Hotspot 4 has popular spots such as Kohachi-ya, pine trees, and Inada. In hotspot 5, along with the revetment from Eiyo-hi to Chikubu-jima, the water landscape was the main interest. Hotspot 6 is in the Uchi-niwa. Hotspot 7 runs from the former site of Saigyo-do along the path to the maple trees, including Chuhosen-no-hi.

Photos and objects of interest in different areas. Table 5 shows the amounts of photos taken in each area and the percentage for each landscape type.

Based on the resources of interest in each area, visitors' preferred landscapes can be clarified (Table 5). In area A, the spatial flower type was the most preferred (28.57%); next was the point flower (15.71%). This result is nearly same as for hotspot 1, which is around the lotus pond in area A. We can see that the lotus pond accounted for a large proportion of interest in area A.

For area B, the water landscape was the main resource of interest, accounting for 39.47%; spatial trees accounted for 11.40%. Water landscapes also held the most interest in hotspots 5 and 7. In area

B, every type held a certain proportion of interest, indicating the while the water landscape was the main resource of interest, there were varied areas of interest.

Area C had two main resources of interest—water landscapes (32.76%) and structures (29.31%). Combined with the results for hotspot 2, which is in area C, the water landscapes are the West Lake embankment and Oigawa, and the structures are the West Lake embankment, Togetsukyo, and Tsuten-kyo.
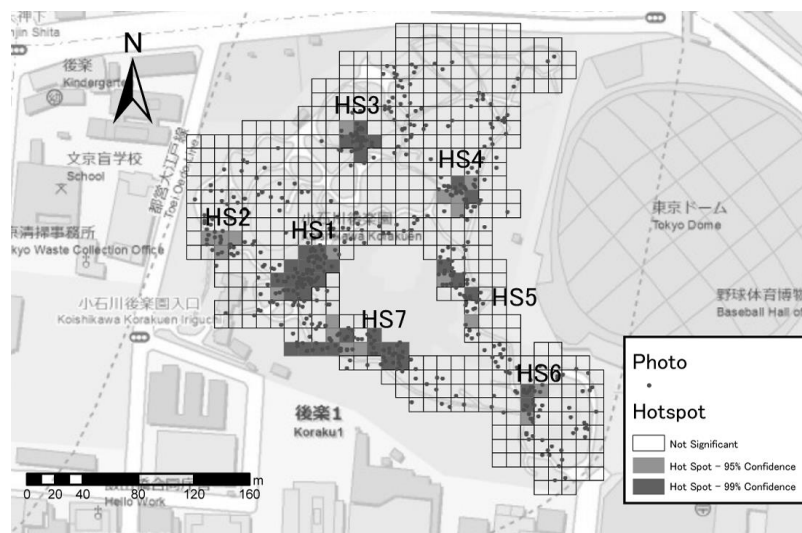
Figure 2. Distribution of hotspots.

In area D, the major resources of interest were structures (80.77%). Therefore, Engetsu-kyo was the mainly preferred landscape.

The main resources of interest in area E were structures (31.37%) and water landscapes (20.59%). All other types were below 10%.

Table 5. Resources of interest in each area.

area	total	point tree	point flower	sign/ facility	structures	buildings (out)	animals	stones	water landscape	path	spatial tree	spatial flower	overlook	pavement
A	70	5.71%	15.71%	1.43%	2.86%	2.86%	0.00%	0.00%	14.29%	5.71%	14.29%	**28.57%**	8.57%	0.00%
B	228	7.46%	2.19%	5.70%	5.70%	2.19%	4.82%	6.58%	**39.47%**	4.82%	11.40%	5.26%	3.07%	1.32%
C	58	6.90%	1.72%	1.72%	29.31%	0.00%	0.00%	15.52%	**32.76%**	0.00%	5.17%	5.17%	1.72%	0.00%
D	52	1.92%	5.77%	3.85%	**80.77%**	0.00%	1.92%	0.00%	3.85%	0.00%	0.00%	0.00%	0.00%	1.92%
E	102	1.96%	5.88%	8.82%	31.37%	0.00%	3.92%	2.94%	20.59%	3.92%	5.88%	9.80%	3.92%	0.98%
F	60	6.67%	1.67%	5.00%	10.00%	0.00%	1.67%	0.00%	**48.33%**	3.33%	8.33%	15.00%	0.00%	0.00%

The interest resource types have largest number of photos in each area are marked in bold.

4. Discussion

At Koishikawa Korakuen, 87.72% of Chinese respondents reported sensing a Chinese taste and flavor in the garden. This result indicates that Koishikawa Korakuen has a high potential to promote cross-cultural exchange between Japan and China.

The most strongly sensed Chinese element was Engetsu-kyo. Twenty-two respondents selected it as the Chinese-style element from their 10 favorite photos. Eighteen respondents mentioned Engetsu-kyo in their comments, and three described Engetsu-kyo as the only object that can be recognized as a Chinese element without the need to read the signboard. Designed by Chu Shun-shui, Engetsu-kyo is a stone arch bridge that can be seen as a full moon by combining the bridge itself with its reflection in the water. Arch stone bridge is one of the Chinese han population basic traditional bridge form, it is very familiar in ChinaQ), and arch stone bridge has a long history in China, the oldest arch stone

bridge that was ever recorded is Luren bridge mentioned in 'Shui Jing Zhu', which was built in AD 282D).

5. Conclusion

In considering inbound tourism in Japan, it is important to consider the evaluations of Chinese as well as other foreign visitors. This study aimed to clarify Chinese tourists' evaluations of Chinese elements at Koishikawa Korakuen and compare preferred landscapes between Chinese and Japanese visitors. The results showed that 87.72% of Chinese visitors recognized a Chinese taste and flavor at Koishikawa Korakuen. Among these Chinese elements, Engetsu-kyo was the most highly recognized.

In terms of resources of interest and preferred landscapes, there were few differences between Chinese and Japanese visitors. The analysis of hotspots showed only slight differences. This result suggests that it is not necessary to change explanations of or advertisements for Koishikawa Korakuen for Chinese visitors.

This study only compared the landscape experiences of two East Asian groups. However, Koishikawa Korakuen has many visitors from various countries, and there could be very significant differences in the way foreign visitor's experience this garden, beyond the scope of what has been studied here. It may be worth investigating, for example, whether Westerners can recognize the Chinese elements in this Japanese garden.

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