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HGG01-01 Room:424 Time:April 29 14:15-14:30

Influence of existing scenery in an on-site forest environment in terms of Subjective Appraisal, Restorativeness, Affect

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INTRODUCTION

Many stressors of urban life are increasingly driving humans to seek some form of stress relief (Frumkin, 2001). Natural environments, including typical urban parks and natural, secondary or artificial man-made forests are generally associated with stronger positive health effects compared with urban environments (Velarde, Fry & Tveit, 2007). For instance, natural scenes bring higher tranquility and a reduced feeling of danger compared to urban scenes (Herzog & Chernick, 2000), while outdoor recreation in a green environment has been shown to relieve stress among urban inhabitants (Li et al., 2008), hence the evidence to date seems to indicate the positive health effect of a natural setting. However, the question of how the existence of scenery as a sight stimulus produces a psychological effect in an on-site forest environment and to what extent remain unclear.

Therefore, during this research conducted in an on-site forest environment (a mixed forest including Larch, Giant dogwood), we set out our research purpose, namely to clarify the psychological healing effect of forest scenery as visual stimuli on respondents.

METHOD

With eleven male and four female adult respondents respectively, we conducted a viewing experiment to investigate the appraisal (Semantic differential method; abbreviated to SDM; 25-paired adjectives), the affect (Positive And Negative Affect Schedule; abbreviated to PANAS; 16-queries), subjective restorative quality (Restorative Outcome Scale; abbreviated to ROS; 6-queries) and degree of attention restoration (Perceived Restorativeness Scale; abbreviated to PRS; 26-queries) using four types of research questionnaires. The viewing experiment was conducted in the forest inside the Forest Therapeutic Research Institute (Fuji Iyashi-no-mori Institute) and managed by the University of Tokyo Forests in early May 2013. The experiments were conducted one-by-one during fine weather throughout the experimental period (four days). Each respondent was given respectively from the opening session (with well-managed forest scenery) to the closing session (forest scenery covered by tarpaulin) or vice versa to eliminate any order effect.

RESULT AND CONSIDERATION

Consequently, in terms of the comparison of appraisal, the opening session saw scores higher than the closing session for many measurement indexes and the degrees of score difference were cleared. Conversely, it became clear that a difference would emerge in both the opening and closing sessions, even if it was a measurement index not corresponding to visual senses but directly to other senses. Finally, based on the result of multiple regression analysis, it emerged that the basic links between them included aspects of difference and commonality for the integrated index appraisal such as likableness, comfort, beauty and sense of security when comparing the opening and closing of the forest landscape respectively, and this was an appraisal of concrete environmental factors which resulted in such differences and commonality. Furthermore, in terms of afect, even though neither a positive nor negative affect could be confirmed from statistical interaction when comparing the opening and closing sessions, there was a statistical decline (reduction) in the before (pre-viewing experiment) compared to after (post-viewing experiment). As for the quality of subjective restorative, the interaction between the opening-closing and before - after sessions was confirmed as well as individual statistical differences when comparing before and after in the opening session and opening and closing sessions in the after session sequentially. Regarding the degree of attention restoration, subsequent results of the opening-closing comparison clarified that the criteria of run away, fascination, scope and compatibility were statistically higher in the opening rather than closing session.

Keywords: Attention restoration theory, Positive affect, Negative affect, Subjective restorative outcome, Appralsal, Forest therapy

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HGG01-02 Room:424 Time:April 29 14:30-14:45

Evaluation of Landscape Conservation at Green Space on Campus Based on the Level of Willingness to Work

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1. Introduction

A university campus with a large-scale green space is precious access to green for the residents in the surrounding vicinity. However, very often only a very low budget is granted for management of green space on university campuses in Japan. Volunteer activities among students are expected for management of the landscape and maintenance of those green spaces on campus. In this study, landscape conservation of green space on campus has been evaluated, based on the level of students' willingness to work.

2. Study Methods

Matsudo Campus of Chiba University in Japan has been selected as a subject. The total area of this campus is 15 hectares, and 13.7 of which counts for green space. A survey was conducted in July, 2013, with students who belong to the Faculty of Horticulture at Chiba University. The number of respondents was 77. The following four items were surveyed: 1) Attribute of respondents (gender, participation experience in green space conservation activities, and willingness to participate), 2) future vision of green space on campus from nature experiences, 3) ecosystem services expected from green space on campus, and 4) desired participation hours to spare for green space conservation activities.

3. Results and Considerations

Regarding respondents' attributes, the number of valid responses was 59, with 35 males (59%) and 24 females (41%). The number of people who have participation experience in green space conservation activities counted 27 (46%). The number of those who are willing to participate in those activities was 48 (81%).

With regard to the future vision of green space on campus, an free answer question was provided and 65 valid responses were obtained. The two most common opinions were as following: 1) "Increasing of nature experience events" (19 respondents, 29%), and 2) "Increasing of facilities such as restrooms, benches, gathering area, and lighting" (19 respondents, 29%). The next most significant answer was "Better management of gardens and woods" (15 respondents, 23%).

The next topic about ecosystem services expected from green space on campus was captured from 59 valid responses. Approximately 90% of them had certain expectations from ecological services related to green space on campus: examples, "to create beautiful landscape in the area" and "space where people can enjoy nature".

Finally, as for the number of participation days to spare for conservation activities on Matsudo campus, 59 students provided valid answers. The average number of days that they are willing to participate is 14.2. Since the participation hours per day had been specified and presented as four hours, the average hours figure is 56.8, converted from the number of days. The grand total of days willing to spare among all valid respondents counted 841 days. Next, the number of desired days to spare was computed for each activity location within the campus. "Ohisama Garden", which is a flower garden managed mainly by students' initiatives earned the highest number of days among all the campus locations. Thirty-five respondents (59%) are willing to spare time here with an average of 6.4 days, which totals 225 days. On the other hand, traditional garden is the most popular in terms of the number of respondents who are willing to spare time. Forty respondents (68%) indicated their interest in sparing time in the traditional garden. The average counted 4.8 days, which totals 191 days. While the main reason of the location choice for Ohisama Garden was "interest in the activities" (14 respondents), the one for the traditional garden was "to acquire knowledge and know-how" (12 respondents).

4. Conclusion

In this study, students' willingness to participate in landscape conservation was clarified by gauging their willingness to work. In doing so, the specific number of days and the available labor in scenery maintenance have been drawn.

Keywords: Willingness to Work, Landscape Conservation, Green Space on Campus

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Table. Result of the number of participation days to spare for conservation activities on Matsudo campus

Traditional Garden	Ohisama Garden	Bamboo Grove	Around School Grounds	Sloping Forest	Other
					
Average of days 4.7 days	Average of days 6.4 days	Average of days 3.4 days	Average of days 3.2 days	Average of days 4.9 days	Average of days 4.8 days
Number of Respondents 40 (68%)	Number of Respondents 35 (59%)	Number of Respondents 36 (61%)	Number of Respondents 20 (34%)	Number of Respondents 32 (54%)	Number of Respondents 16 (27%)

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HGG01-03 Room:424 Time:April 29 14:45-15:00

Landscape Evaluation Method by Visitor-Employed Photography with Usage of Cellphones - Case Study of Mount Gwanak, Korea

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1. Introduction

For spatial planning and designing such as natural parks, it is important to understand how users percept and evaluate landscapes. The relationship between viewpoints and a viewing object has been regarded important in the landscape perception model which has been studied in Landscape architecture, Geography and some sciences. One of the study methods to understand such landscape perception uses a camera called Visitor-Employed Photography (VEP), and this method is considered effective in extracting visual images of a space. However, while existing VEP is effective in understanding viewing objects, it still has shortcomings. It requires interviews and descriptions separately in order to extract viewpoints. Therefore, in order to develop a study method of landscape perception to overcome these limitations, we conducted experiments to get viewpoints by using the GPS function of cellphones which visitors to the sites possess for their daily usage.

2. Outline of the experiment

A research was conducted with 60 subjects, and the trail of Mount Gwanak in the suburbs of Seoul, Korea, was selected as a site. This location is designated as Urban Eco-Park. The subjects were instructed to use their own cellphones and take photos of landscapes which subjects evaluate. They were also instructed that Geotag must be attached to the photos. In addition, geographic information of the subject's action was simultaneously collected by GPS logging application of their cellphones. Following this activity, a questionnaire survey about subject's profile was conducted. From the collected photos and spatial characteristics of Mount Gwanak, we analyzed landscape objects which are appreciated by the visitors.

3. Results

1,119 photos were collected from 60 respondents. Among these, the redundant photos of the same composition taken by the same subject (121 photos) were eliminated. In addition, geographic information were not available from 6 subjects, hence theirs (99 photos) were also eliminated. Further eliminated were the other photos with geographic information errors (45 photos), and the remaining 842 photos were used for analysis. These photos were categorized based on the viewing objects and viewing distance. As a result, based on the trail as a viewpoint, the photos of landscapes within the woods counted most with 120 photos. Panoramic views (105 photos) and closer shots of the space with a river as a main subject were also common. We analyzed the collected geographic information with the Kernel density estimation, and identified the viewpoints of visitor's preference (Fig. 1). This result was combined with the categorized viewing subjects for further analysis, and it was found that photo shooting density tends to be high at the following locations: 1) panoramic view, and the rock and the building at the mountain top in the surrounding area of the mountain top (Fig. 1.1), 2) the touching points of the trail and the river (Fig. 1.2 and 1.3), and 3) locations with a temple (Fig. 1.4)

4. Conclusion

In this research, landscapes within the woods, panoramic views, and river views from the trail are highly appreciated at Mount Gwanak. While panoramic views and river landscapes were concentrated in certain locations, there was no spatial tendency detected with the landscapes within the woods. From the questionnaire survey, 42 respondents (70%) responded comfortable. Eighteen (30%) responded not comfortable; and among those, two (3.3%) were about GPS and others were about the course. Thus, the load of study method itself can be considered light. As described above, this study method can be useful as a future development of a landscape perception research method. It enables visual extraction of viewpoints and viewing objects as shown in this research. Furthermore, this method can be applicable to international comparative studies to identify cultural differences in landscape recognition.

Keywords: landscape evaluation, GPS, GIS, Visitor Employed Photography

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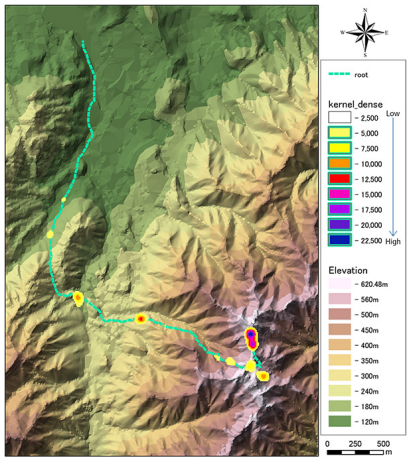
HGG01-03 Room:424 Time:April 29 14:45-15:00



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HGG01-04 Room:424 Time:April 29 15:00-15:30

Comparison of natural landscape appreciation between Russia and Japan: landscape exoticism evaluation

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People belonging to different cultures differ by their landscape preferences due to a number of ethno-cultural features as well as historical, social, and environmental factors. It is very important to reveal and consider these differences. The purpose of this study is to compare perception, visual and emotional evaluation of natural landscapes in Russia and Japan, that are situated so close to each other and share a common border, but differ so greatly in cultural aspects, while both have deep-rooted traditions of landscape appreciation. We have interviewed respondents in university centres of Russia (Moscow in Central Russia, Irkutsk in East Siberia, and Petropavlovsk-Kamchatsky in Far East) and Japan (Sapporo, Chiba, and Miyazaki); metropolitan areas of both countries and two outermost areas, which differ most strongly in their natural environment, were represented. Young respondents (17 to 30 years old men and women) have taken part in the survey. During the interview, each respondent received the same set of 70 photos of natural landscape. For evaluating the exoticism, we asked respondents to use the 3-point scale, on which exotic landscape got a mark ”+1” and usual landscape - ”-1”. When respondents could not decide between these categories, they were suggested to use an average value ”0”. Data obtained were analyzed using elementary and multivariate statistical methods.

Exoticism is very important parameter in landscape appreciation and evaluation. As we have learned during the interview, respondents consider attractive landscape as beautiful and comfortable not only for a long-term stay, but for living in. Exotic landscape is ”unfamiliar” to respondents; even if it were unsightly, it would be interesting to look at, at least once. Therefore, when assessing attractiveness of landscape, respondents focus primarily on their aesthetic feelings, but in the evaluation of exoticism dominates their educational interest to an unknown. As we revealed, practically no correlation exists between Russian and Japanese respondents to evaluate exotic landscapes (R = 0.26). The majority of Russian respondents evaluate mountain landscapes, waterfalls, and see coasts as the most exotic, but forests, rivers, and treeless plains as the most usual. At the same time, coastal areas are usual and treeless plains are exotic for the Japanese. All the other types of landscapes vary considerably in their exoticism degree for Japanese respondents. All groups of Japanese respondents assess the exoticism of landscapes virtually identical (the correlation coefficients between their scores are: R = 0.90-0.96), while the groups of Russian respondents show some differences.

To discover the ethno-cultural aspect, we compare the survey data from Kamchatka to that from Hokkaido, which are similar in terms of natural conditions. In their assessments of the exotic landscapes residents of Kamchatka are closer to the representatives of their culture, living in fundamentally different environmental conditions, than to the representatives of the Japanese culture, living in a similar environment. At the same time, Kamchatka respondents evaluate some of exotic landscapes virtually identical to the estimates of Japanese respondents and very different to those of Russian respondents from other regions. This applies to seacoasts and mountain landscapes that are both the most remarkable and most similar elements of natural environment of Kamchatka and Japan. Thus, if all respondents evaluate the attractiveness of landscapes almost equally, which may indicate the existence of universal human concepts of their aesthetics, then when assessing the exoticism, important role play both ethno-cultural differences and features of natural environment where the respondents live or that they have experience to communicate with. For Russian respondents the most exotic landscapes are also the most attractive, although we cannot see such a tendency for Japanese respondents.

Keywords: landscape appreciation comparison between Russia and Japan, visual and emotional evaluation of natural landscapes, exotic landscape, attractive landscape, ethno-cultural differences, features of natural environment

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HGG01-05 Room:424 Time:April 29 15:30-15:45

Exploring reasons for residents use and appreciation of informal urban greenspace in Sapporo and Brisbane

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Informal urban greenspaces (IGS), such as vacant lots, street verges and river banks are an important new topic in urban recreation and landscape studies. At last year's JpGU 2013 I showed that residents in Sapporo (Japan) and Brisbane (Australia) use and appreciated IGS as adults and during their childhood. But two important questions remained: (1) What role does IGS play for residents in comparison to formal green space, such as parks?, and (2) Why do residents in Brisbane evaluate IGS more positively than in Sapporo? This presentation reports preliminary answers to these questions.

To examine the first question, I used a GIS analysis to compare the amount of formal greenspace within 500m of the sites where the questionnaire on IGS use and perception was distributed to Sapporo and Brisbane residents. A negative correlation between formal greenspace area and IGS use would imply residents indeed use IGS as a substitute for parks. But the results showed no correlation. This suggests residents deliberately choose to use IGS. IGS therefore plays a unique role in residents' recreation - different from formal greenspace.

But why did residents in Sapporo feel IGS made their daily life both better and worse, while residents in Brisbane felt IGS had a mostly positive impact on their daily life? Looking for potential reasons for this difference in IGS appreciation, I measured IGS quantity, accessibility and vegetation structure in both cities. The type of IGS (e.g. lot, street verge, brownfield, railway, gap space, powerline, waterside etc.) was determined using a IGS typology. Accessibility of IGS was categorized in three levels: accessible, partially accessible and not accessible. Vegetation structure was recorded by measuring coverage of four strata: tree, bush, herb and ground cover.

The results show IGS makes up a surprisingly large percentage of city land use in both cities (˜5% of total surveyed land use), but there were differences in the amount of IGS types and vegetation structure. We analysed the questionnaire data and field survey data, and found these different IGS types and vegetation structure could explain why residents evaluate IGS differently. Understanding how residents appreciate IGS may in turn help us to unlock the potential of IGS for recreation.

Keywords: urban geography, recreation, wildscape, urban planning, naturalness, spontaneous vegetation

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HGG01-P01 Room:Poster Time:April 29 18:15-19:30

A review of English papers on psychological evaluation of landscape from 2009 to 2013

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This paper reviews interesting studies on landscape evaluation in terms of psychological tests referred in Landscape and Urban Planning, Landscape Research, J. of Environmental Psychology, Environment and Behavior, J. of Environmental Management and some other scientific journal from 2009 to 2013. Until 2005, I reviewed various experiments of landscape evaluation in the papers of Review Articles (Aoki 1999, Aoki 2006, and Aoki 2007). During recent 5 years, more works were published compared to the decade of last report. So I tried to summaries them according to the key subjects of the former papers, i.e. (1) clarifications of landscape phenomena, (2) respondents' attributes, (3) landscape appreciation, (4) sampling of landscapes and presentation, and (5) predictive models of psychological response and applications in physical planning.

(1) Clarifications of landscape phenomena (Table1)

The first proposal of the explanation of the landscape appreciation was proposed by J. Appleton (1975). The detail mechanisms of the appreciations were not explained because of the complicated reaction system of human brain (Thiel 1997). This hard situation was discussed by the advanced brain system endowed to human being (Bourassa 1991). We already got the tool to measure the activities in the brain, but the clarification of the landscape phenomena will take more time because of the complicity of the landscape appreciation (Aoki 2008).

In recent 5 years, the childhood and adolescence to feel at home was examined (Adevi and Grahn 2012).

(2) Respondents' attributes (Table 2, 3)

Two kinds of attributes e.g. identities of human group and personality were reported.

For the former, mountain tribe Sherpa (Beza 2010) and Nigeria children (Falk and Balling 2010) were investigated.

For the latter, the attribute of tourists was increased and sibling was newly investigated (Howley et al. 2012).

The meaning of sampling through internet was yet under consideration.

(3) Landscape appreciation (Table 4)

Preference has popularly used in recent years. Willingness to pay became popular in this field. SD method was yet used in the appreciation.

Other appraisals, e.g. feeling at home (Adevi and Grahn 2012), familiarity (Dobbe 2013) and photo location (Sugimoto 2013) were used.

(4) Landscape sampling and presentation (Table 5, 6)

In the landscape sampled, new ideas; transportation (Bernasconi et al. 2009), Mt Everest (Beza 2010), fire prone (Islas and Vergara 2012), seasonal change (Eroglu et al. 2012) were tried.

As for the presentation method, on-site visits was increasing and use of GPS (Sugimoto 2013) became popular by the development of mobile phone.

(5) Predictive model and planning (Table 7, 8)

As for the predictive model, biodiversity (Jungels et al. 2013) and flow of stream (Pflueger et al. 2010) were tried.

Proposal for planning were offered in terms of mapping (Ribeiro et al 2013, Schirpke et al. 2013).

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Keywords: landscape appreciation, English papers, 200-2013, review

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HGG01-P02 Room:Poster Time:April 29 18:15-19:30

Comparison of Races in Terms of Images of Landscapes in Fiji Using Image Sketches

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Methods

This research was intended to clarify the difference in imaging of forests between Fijian and Indian residents based on the SKETCH SURVEY. We administered the sketch survey to Fijian residents during our stay in the Republic of Fiji from August to December, 2013. The survey was carried out through interviews, and 158 respondents gave their answers. In the survey, the respondents were asked to describe forests in keywords, sentences or sketches. 1) Firstly, the respondents entered several keywords related to FORESTS in Fiji based on their own idea. 2) Secondly, they described the image of FORESTS in sentences consisting of about 100 words. 3) Lastly, they drew simple sketches of the image of FORESTS. In the process of analysis, the number of elements depicted in the sketches was counted in order to review their imaging of forests. Furthermore, the space structures of the sketches drawn by the respondents were divided into four categories in total: the near view, intermediate view and distant view based on the distance between the landscapes and the drawers, and the downward view depicted from high view points. For analysis of the differences in the races, Mann Whitney U test was used.

Considerations and Research results

1,504 elements were sampled from the sketches drawn by all the 158 respondents, and that is to say 9.5 elements were sampled from one sketch on an average. These 1,504 elements were classified into 73 categories. When the appearance rate of the elements in the 158 respondents sketches was calculated, the appearance rate of mountains was highest (82%), followed by trees (69%), the sun (63%), palm trees(58%), houses (51%), oceans (47%), rivers (44%), woods (42%), birds (35%), villages (34%) and clouds (32%). In many of their sketches, not only nature elements such as mountains, trees and the sun but also familiar elements such as palm trees, houses and oceans were depicted. In some of the Fijian residents sketches, palm trees extending in the tropical zone with a background of mountains were depicted. Furthermore, houses, villages and other elements were simultaneously depicted in the natural landscapes, and it seems that nature is closely linked to their daily lives. Concerning space structures of the sketches, the rate of the distant view was highest (59%), followed by the downward view (18%), near view (13%) and intermediate view (8%).

Regarding the differences in the percentage of the answers between the races, 76% of Fijian respondents and 54% of Indian respondents associated forests with nature, and here a significant difference was found ($p<.05$). Furthermore, 24% of Fijians and 44% of Indians associated forests with farming villages, and here a significant difference was also found ($p<.05$). It may be possible that Fijians regard forests as a factor of nature, while on the other hand Indians consider forests as a factor of not only nature but also farming villages.

Differences between the races were checked in each of the 73 categories, and significant differences were detected with only six categories of them. The categories in which significant differences in the percentage of the answers between the races were detected were palm trees (50%, 74%), the sun with expression (19%, 34%), grass fields (34%, 12%), sugar canes (7%, 20%), plains (1% of Fijians, 10% of Indians) and hotels (0%, 8%). The analysis of the depictions in the sketches showed that Fijians tend to depict nature-related objects elaborately and Indians tend to depict plants and other similar objects more elaborately than Fijians.

Concerning space structures of the sketches, 55% of Fijians 55% of Fijians and 68% of Indians drew distant-view sketches, and there was a tendency that both races preferred the distant view. In some of the sketches, there was a range of mountains from which waterfalls and rivers flew into the sea, and in some of the sketches trees, tropical palm trees and artifacts such as houses and villages were depicted.

Keywords: Image Sketches, Landscape, Comparison of Races, Republic of Fiji

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HGG01-P03 Room:Poster Time:April 29 18:15-19:30

A Comparative Study on Landscape Cognition Between Japanese who have been in New Zealand(NZ) and who have not been to NZ

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Introduction

NZ is almost same size and has same climate, temperate zone and subtropical zone, with Japan. Though a lot of Japanese have immigrated to or lived on long term in NZ, few Japanese knows NZ well because the long distance between both countries might be bottleneck for flow of people. Thus, the objective of this study is to clarify differences of landscape recognition of Japanese who have been in NZ and Japanese who have never been to NZ.

Methods

69 landscape photos taken in both countries (35photos from Japan, 34photos from NZ) were categorized to the group of coast, waterfall, river, forest, wetland, mountain, and lake. Respondents were asked to select three photos each for characteristic landscape image of NZ and Japan. Then, they were asked to write down the three keywords each about the landscape image of both countries. Respondents were the group of 25 Japanese people who have been in NZ (NJG), the group of 42 Japanese people who have never been to NZ (JPG), and the group of 12 New Zealander people (NZG).

Result

Firstly, the most selected photo as the characteristic landscape image of Japan among all groups was the photo of Mt.Fuji with Ashinoko lake and shrine gate (NJG76.0%, JPG74.0%, NZG50.0%). Also, second top photo was Mt.Fuji's one. The different result was shown on third top photo. NJG chose the photo of Mt.Fuji with forest (32.0%), JPG chose the photo of creek (28.7%), NZG chose the photo of waterfall with autumn leaves (16.7%), and the photo of forest with lingering snow (16.7%).The creek's photo selected by JPG was recognized as Japanese landscape though taken in NZ.

For the characteristic landscape image of NZ, there was not the photo selected intensively such as Mt. Fuji one. However, the most selected photo was common among all groups. That was the photo of lighthouse on cape surrounded by ocean (NJG36.0%, JPG40.5%, NZG16.7%). As Second top photo, NJG chose the lake on volcano with volcanic steam (24.0%). JPG selected the solid magma in volcanic crater (23.8%) and the lake (23.8%). These two photos might be chosen as the characteristic landscape image of NZ because those are unfamiliar sceneries in Japan. In NZG, it was hard to find out the characteristic scenery because the groups of selected photos were decentral.

For keywords about the landscape image (KLI), noun showing plants and landscape, noun showing animals, noun showing color, adjective indicating impression, and proper noun were answered. As KLI of NZ, FOREST, MOUNTAIN or HILL was answered 29.6% as total. And GREEN, DYNAMIC or BROAD was answered 22.2 % for each in NJG. People would have the image of landscape that broad and dynamic mountain and hill are spread in NZ. On the other hand, JPG answered BROAD(35.0%), MEADOW and GRASSLAND(27.5%), SKY(25.0%), WILD(25.0%) as KLI. Though it also shows broad image, JPG would have the image of broad glass land instead of mountain or hill.

It revealed the difference of landscape cognition between NJG and JPG. There was not obvious difference on the photo selecting exercise. However, JPG recognized the photo taken at NZ as Japanese landscape photo. For KLI, JPG indicated broad glass land, and NJG shown the landscape consisted of broad forest and mountain.

Keywords: Japan, New Zealand, Landscape Cognition, Landscape

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HGG01-P03 Room:Poster Time:April 29 18:15-19:30

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HGG01-P04 Room:Poster Time:April 29 18:15-19:30

Analysis of Scenery Transition and Residents' Opinion in Dalai Lake Nature Reserve

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Introduction

Grassland scenery has been diminishing in Inner Mongolia in People's Republic of China. It is said that increase in farmland and desertification of grasslands are the cause of diminishing grasslands. This is a serious issue for the Mongolians who make a living from pasturing. In this research, Dalai Lake Nature Reserve, which is located in the Hulunbuir Grasslands has been selected as a study subject. The objective is to clarify the transition of the scenery in the nature reserve by extracting scenery factors in relation to usual lives of the residents in the area.

Study Methods

An opinion research was conducted between the end of December, 2013 and the middle of January, 2014. The survey subjects were the residents who are nomadic in the grasslands of Dalai Lake Nature Reserve. Interviews were conducted and 409 responses were obtained. In this research, demographics of the respondents and the composition factors of grassland scenery in Dalai Lake Nature Reserve were confirmed. The composition factors of grassland scenery were studied in three different time frames: 10 years ago, present, and future vision (for example, 10 years later). For this research of scenery composition factors, 25 factors had been obtained from the initial literature research, and typical factors had been pre-selected among those for multiple choice questions. Multiple answers were accepted for this question, and an open answer section was also provided. Responses to the grasslands management which local residents would expect were also obtained. A chi-square test was applied to statistical analysis.

Results

Scenery factors of Dalai Lake Nature Reserve obtained from literature research included; 1) natural scenery such as lake, river, swamp, wild animals, and wild vegetation, 2) cultural landscape like Mongolian gels, and 3) factors which developed along with economic development, including electricity, mining and building.

The demographics of respondents showed that residents within the nature reserve counted 236; therefore, the number of the effective responses has been determined as 236. The average age of the respondents was 41.1 years old. These respondents include 170 Mongolians (72%), the Hans (23%), and the Evenk (5%).The following factors are the ones that all effective respondents selected as typical scenery composition factors of 10 years ago: wild animals, wild vegetation, grasslands, and river, whereas 99%selected lake, sandy soil, and livestock. Only1%selected railroad, ger camp, signboard, tourism facilities, and camping car. Next, the following factors are the ones that all effective respondents selected as current factors: village, railroad, sandy soil, and livestock, while 232(98%) selected roads and electric lines. Following these, 229(97%) selected mining field. The factor mentioned by the least respondents was wild animal with 54respondents (23%).Lastly, in the question of future scenery composition factors, the following ones are those that all respondents selected: wild vegetation, grasslands, livestock, and river. Road was selected by 233 respondents (98%), and lake by 227 (96%). A small number of respondents selected mining field (41 respondents, 17%) and electric wire (50 respondents, 21%).Comparing the scenery composition factors of 10 years ago and those of current, natural scenery factors decreased from 93% to 60%. On the other hand, future natural scenery factors counted 87%.

In terms of grasslands management which residents would expect, major responses were as following: 1) maintain status-quo (103 respondents, 44%), unplanned succession(79 respondents, 34%), and reinforce management (51 respondents, 22%).

Conclusion

This study clarified the scenery which residents in the nature reserve area have in mind and specified it in three different time frames: 10 years ago, present, and future vision (approximately 10 years later). Grasslands management which residents would expect has been also captured.

Keywords: Dalai Lake Nature Reserve, Scenery Transition, Resident, Scenery factors, Opinion, Grasslands

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HGG01-P04 Room:Poster Time:April 29 18:15-19:30

Dalai Lake Reserve

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HGG01-P05 Room:Poster Time:April 29 18:15-19:30

Research on Comparison of Races in Terms of Evaluation of Natural Landscapes in the Republic of Fiji

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Methods

1) after collecting Natural landscape photos of Japan and Fiji national countries, Fiji 33 photos and Japan 39 phots of WATERFALL, FOREST, SEASHORE, RIVER, FARMLAND, SWAMP, MOUNTAIN, and LAKE were selected from each country, which sum up to a total of 72 photos, 2) these photos were categorized in groups by 141 a citizens and each group was labeled with a name, 3) the same students evaluated these photos according to preference (5-scale) and exoticism (3-scale), and 4) they were asked to select three photos which they believe to represent the unique characteristics of the Fiji, so that landscape that exhibit the unique characteristics of each ethnic can be extracted. I stayed in Fiji August-December 2013. And A research was run among the Fiji residents during stay. I used a investigation by interview. Then answers were collected from 141 respondents. Cluster analysis (Ward's method, squared Euclidean distance, 3) was applied for the analysis of photo categories, and Mann-Whitney U Test was applied for the analysis between ethnic groups.

Considerations and Research results

Firstly, the difference in classification of the pictures of SWANP was observed between the two races. Fijians classified SWANP and FOREST into different groups, and they included SWANP in the category of RIVER. On the other hand, some Indians included SWANP in the category of FOREST and some included SWANP in the group of RIVER.

Secondly, regarding classification of LAKE, both Fijians and Indians classified LAKE into the same group as SEASHORE. In Fiji, where the percentage of water area in the land is extremely low, there is a possibility that LAKE are not recognized as such. Regarding classification of SEASHORE, both races divide BEACHE into two broad categories: landscapes of sandy BEACHE where there are only a few rocks and trees, and rocky BEACHE where rocks and reefs are common.

In the analysis of preference, significant differences were detected with the six pictures. Five of the six pictures were landscapes of Fiji, and one of them was a landscape of Japan. Furthermore, in the analysis of exoticism, significant differences were seen with the four pictures. Three of the four pictures were landscapes of Fiji, and one of them was a landscape of Japan. Concerning preference of the pictures of the landscapes of Fiji, the value of Fijians is 4.06 higher than that of Indians. Regarding selection of the pictures typical of Fiji, there was a variance between Fijian and Indian residents. Fijians selected the pictures of FARMLAND (21 %), MOUNTAIN (17 %) and SEASHORE (17 %), while on the other hand Indians chose the pictures of SEASHORE (44 %), RIVER (14 %) and SWANP (12 %). The reason for Fijians' choice may be that they think fields of taro, which is the staple food in Fiji, and mountains extending into villages as traditional landscapes of Fiji. On the other hand, the reason for Indians' selection may be that they associate landscapes of BEACHE with a scattering of resort spots in Fiji.

Fijians' preference was in the order of WATERFALL (4.43), LAKE (4.41), RIVER (4.14) and SEASHORE (4.09), and Indians' preference was in the order of WATERFALL (4.41), LAKE (4.33), SEASHORE (4.08) and RIVER (4.02). That is to say, both races preferred the pictures of waterfront landscapes. Particularly, the pictures of SEASHORE may be considered as familiar landscapes of Fiji. Most of the pictures of WATERFALL and LAKE were from Japan, and they are unfamiliar sights in Fiji and considered as exotic landscapes (the pictures of Japanese landscapes). However, the pictures of SWANP were not very much preferred compared to other pictures of waterfronts. There was not much big difference in preference between Fijians and Indians excluding the six pictures with which significant differences were detected. However, there was a difference in that Fijians preferred traditional landscapes whereas Indians preferred landscapes of seashores.

Keywords: Landscape evaluation, Republic of Fiji, Fijians, Indians, Comparison

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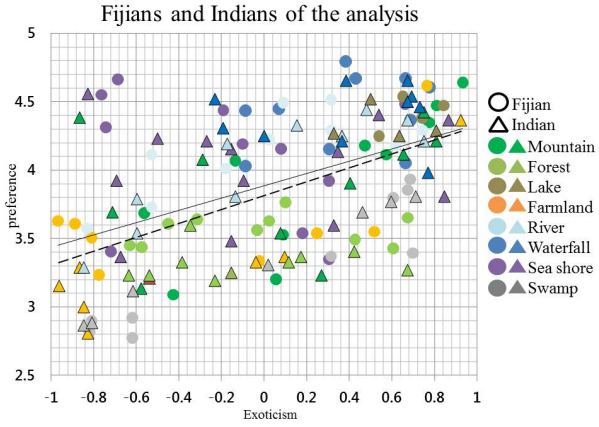
HGG01-P05 Room:Poster Time:April 29 18:15-19:30



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HGG01-P06 Room:Poster Time:April 29 18:15-19:30

Study on natural amenities in off-limits area: imagination of virtual activities received from landscape

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Introduction

In urban areas, there is little space that has been kept natural although it is now recognized that natural elements such as green space, water features or wildlife habitat, etc. increase the value of an environment. However, human influences on natural habitats interfere with restoring natural spaces to their original condition.

It is difficult to maintain such green space and limit its availability to people. In fact, it is often the case that areas with a high level of undisturbed natural habitats are off-limits areas.

For example, storm-water reservoirs for flood control in urban areas are off-limits, concrete-covered, fenced-in spaces. However, a variety of wild fauna and flora manage to make their habitats in some reservoirs. In other words, reservoirs are an example of artificial yet informal urban green spaces, where spontaneous wild vegetation grows. However, clearly reservoirs were not planned as natural spaces.

Although these spaces are off limits, people can enjoy a view of natural growth from the wall of the reservoirs. On the other hand, due to the physical boundary, people cannot get in touch with natural elements due to perceptual constraints.

Viewing such restricted areas has a beneficial effect as a solution for symbiosis with nature because human development and natural preservation are opposed to each other.

This study clarifies people's impressions of the spontaneous and wild vegetation in reservoirs. Moreover, this study considers the affordance research for environment afford prevision of behavior to perceiver as seen in the case of flying stone. Flying stone is a concrete block put into a river bed. This paper presents a new way for people to virtually take part in nature-friendly activities. This study explains how imaginary contact with nature by viewing spontaneous vegetation in off-limits, informal urban green space creates satisfaction.

Methods

Research Questionnaire 1

In a Tokyo suburb, 108 reservoirs were selected for this study. We surveyed shapes, size, location, and surrounding environment and explored possibilities of whether the space was a beautiful landscape and from what perspective.

We conducted an awareness survey regarding environment and landscape with 88 residents living around three reservoirs. Correlative relationship was applied to analyze the relationship between question items.

Research Questionnaire 2

Another study was conducted in Kyoto with 175 university students who responded to questions about the image of flying stones on the Kamogawa River. Responses were given as free descriptions. A text mining approach was applied to analyze symbolic representations for water-friendly activities.

Results and Considerations

The results show that most of the reservoirs were concaved and had good views of open space. Therefore, reservoirs have a high potentiality to be urban green space, where people can view spontaneous natural habitats. Reservoirs are artificially made. The results also showed vegetation succession has possibilities for creating transient esthetic appraisal. However, questionnaire results showed that residents who lived around reservoirs feel that the naturally occurring vegetation is not beautiful.

The results of affordance research were as follows. Flying stones provide an image of physical behavior. for getting across a river or playing in the water. The image is a trigger for the imagination of virtual water-friendly activities. Symbolic representation of environmental signatures is a device that affords imaginary familiarity with environmental elements.

Keeping a view of nature in off-limit green spaces leads to an imaginary sense of familiarity with nature.

Symbiosis with nature increases the value of an environment in urban. Image of nature-friendly activities have a commonality of body. Therefore, symbolic representations for nature-friendly activities have a functional role as a landscape appraisal standard.

Keywords: off-limits area, amenity of nature, symbol of water-familiar, affordance

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HGG01-P07 Room:Poster Time:April 29 18:15-19:30

The questionnaire was consisted with two main part, survey about figure of the coastal mindscape and individual backgrou

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In this study, the image of coastal landscape as the mindscape were compared between Japanese university students and Russian university students by the questionnaire survey.

The questionnaire survey were conducted to 24 university students of Irkutsk city as Russian university students and 73 university students in Sapporo city as Japanese university students.

Furthermore, 12 Russian students who studied in the university in Sapporo city were added as Russian students in Japan.

The questionnaire was consisted with two main part, survey about figure of the coastal mindscape and individual background of respondents. As a result, the sandy beach and sea were the major component of mindscape. Because most respondents enjoyed sea bathing as recreational use, it was guessed that the viewpoint from the beach were dominated and inland area, like coastal dune, was not described.

On the other hand, Russian university students described more emotional words as beautiful, calm, bright, etc. in addition to major components.

There was no difference in a drawn composition type, but Russian university students described more natural components, mainly coastal plants, than Japanese. About the shore protection, the Russian student did not image in particular it at all.

Keywords: mindsape, coastal landscape, figure, drawing method, Japan, Russia

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HGG01-P08 Room:Poster Time:April 29 18:15-19:30

Landscape Appreciation on Green Passages with Waterway in Edogawa Ward, Tokyo

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Introduction

Edogawa Ward equipped itself with the first water nature park in Japan in 1974, and sterilized purified water has been utilized in this park. By 1996, water nature parks with natural water had been also established with considerations for ecosystem. The focus of this study is inhabitation of living creatures and human usage in relation to differences between purified water and natural water. The objective of this study was determined to clarify the following three points at two green passages in Edogawa Ward: 1) impressions among the users, 2) behavior of users, and 3) inhabitation of living creatures. Comparing the aquatic life, more variety of living creatures was identified in natural water, and fewer in purified water.

Study Methods

First, an opinion survey about impressions of green passages was conducted among the green passage users. A survey questionnaire was directly handed out to 288 users on the 24th and the 28th of July and the 4th of August, 2013. The following four items were tested in this study: 1) if they like it, 2) if they feel good, 3) if the water is clean, and 4) if there are many living creatures. Following this questionnaire, a behavioral study was executed in order to compare the results of the opinion survey and the actual usage of green passages. This behavioral study was administered between 10:00 and 14:00 on the 25th and the 31st of July, 2013. The subjects of this research were fish, crustacean, reptiles (turtles), and amphibians (frogs). This research was conducted between 9:00 and 17:00 on the 17th, the 18th, and the 31st of July, 2013. The research area of the green passage was segmented into 27 sections.

Results

The impression survey concluded that over 98% of the users had favorable impressions of both green passages from the results of two questions: *if they like it* and *if they feel good*. As for the question *if there are many living creatures*, 74.5% responded *very many* or *many* in the green passage with many natural water streams. Although the difference is small, relatively smaller figure of 65.6% responded *very many* or *many* in the one with purified water streams.

The behavioral study result showed that the most popular usage among the eight categories was *playing with water* with over 25% of usage. The result was same with both green passages. Similar tendencies were detected with both passages with other activities which followed the most popular *playing with water*: *resting*, *walking*, and *exercising*, in order of popularity.

The inhabitation research confirmed 14 kinds of aquatic habitat on the green passage with natural water, and nine kinds on the one with purified water. Among the confirmed aquatic habitat, reptiles and amphibians such as the Chinese three-keeled pond turtles, Mississippi common sliders, and Japanese toads were observed on the green passage with natural water; however, they were not found on the green passage with purified water. In addition, the average number of creatures per 100 meters counted 14.7 on the green passage with natural water, but the figure on the green passage with purified water counted only 7.0. More than double the difference was detected between the two.

Considerations

Based on the research results of the two green passages, the difference in the inhabitation situation has been clarified. However, there were no significant differences detected in users impressions of the scenery and in their behavior. From these results, it can be inferred that the differences in aquatic habitat on the green passage does not have a significant influence on users impressions with the scenery or on their behavior. Futures researches on other factors such as vegetation and surrounding environment of a green passage, including grass and woods, shall further clarify favorability of sceneries and user behaviors.

Keywords: Edogawa ward, green passage, appreciation, impression, usage, creature

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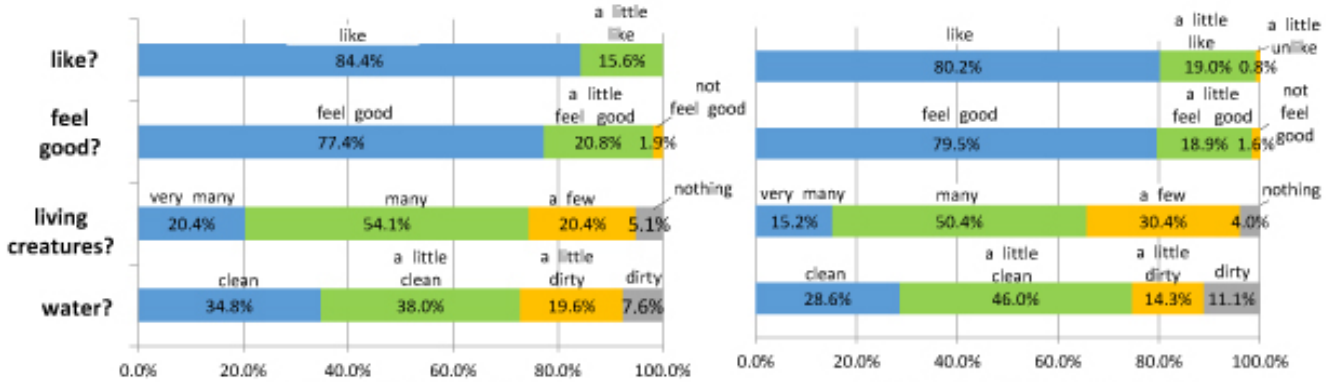
HGG01-P08 Room:Poster Time:April 29 18:15-19:30



The inpression of two green passages