

Evaluation and Comparison of the Meaning and Concepts of Contemporary Urban Parks and Historic Gardens

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Abstract: The meaning of the built environment has always attracted architects and landscape designers. This study is aimed to study meaning and concepts of urban parks in comparison with historic gardens. The literature review of the research emphasizes on impacts of environment on the addressees because of environmental elements and design. To address the issue the study have been done in two categories i.e. urban parks and historic gardens. Theoretical framework of the paper shows that there are three primary emotional responses - i.e. pleasure, excitation and dominance, in perception of meaning. Ten of the bipolar pairs emotions extracted from library state of the art of the paper were classified in these three primary emotional responses. Then a questionnaire was given to randomly selected samples of the research - fifty undergraduate students of the Architecture Departments of Sama Islamic Azad University in Saveh. These students were asked to rate a total of twenty photographs from four sites (Gardens: Arbab Mahdi and Akbarieh - Parks: Amirieh and Shahr) with the help of seven-point semantic differential scales under three headings; namely: pleasure, excitation and dominance. The results show that there are differences in perception of meaning between urban parks and historic gardens. In addition some invaluable aspects of historic gardens are missing in contemporary urban parks.

Keywords: concept, semantic differential, urban parks, historic gardens

I. INTRODUCTION

Looking from the theoretical point of view, the necessity of the protection and enhance of landscape visual quality is one of the environmental design fundamentals, which is essential while creating the ecologically stable, ergonomically comfortable, aesthetically attractive, and semantically meaningful landscape (Kamičaitytė-Virbašienė & Janušaitis, 2004). The idea that some places possess more pronounced character than others has been an underlying premise of many geomantic traditions in both eastern and western cultures since antiquity. More recently, humanistic geographers, environmental psychologists, and planners have revived this notion in concepts such as place, sense of place, place character, and genius loci (Altman & Low, 1992) (Seamon & Mugerauer, 1985). In addition it can be used to determine the relationship between perceived use and urban design characteristics. Many studies have been made to the physical characteristics of the communication and integration between the built environments and find a reaction of participants. Researches are related with the tourism development and Sustainable design as the recreational resource (Ansari, Mahdavinejad, & Abedi, 2012) (Mahdavinejad & Abedi, 2011). The results of public opinion analysis in 1972 showed that vicinity is beautiful when there is water (71%), forest (64%), expressive relief (27%), and structures (13%). According to the results of the research performed in 1986, the natural landscape visual type is beautiful considering its structure when there is 52% of water, 47% of relief, 32% of vegetation, 4% of architecture of buildings. A townscape is beautiful when the architecture of buildings consists 58%, vegetation – 50%, water – 13%, and relief – 10% (Kavaliauskas & Kurševičius, 1977). Although these studies analyze specific physical attributes, they do not include an in-depth analysis of the structure of observer emotional image reactions and how that relates to their overall evaluation (Llinares & Page, 2007). The conception of the visual environment includes an object i.e. the material environment, and a subject, i.e. the society, according to which the environment is analyzed.

Therefore, seeking to create landscape of a particular visual quality by means of environmental design, there is a need to know not only objective indicators of landscape visual quality but also the evaluation of these objective indicators by society – preferences of experts and laity (Kamičaitytė-Virbašienė & Janušaitis, 2004).

It is important to emphasize on participants conceptions and needs to meet sustainability in architecture and planning (Mahdavinejad & Abedi, 2011: 337-344). It is in need of architectural design criteria of socio-behavioral approach (Mahdavinejad & Mansoori, 2012: 475 – 482). Community-led method in art education and learning (Mahdavinejad & Moradchelleh, 2011a: 554-560) as well as community and social class (Mahdavinejad & Moradchelleh, 2012: 1068-1077) has a lot to do with Traditional architecture of developing countries especially in Iran (Mahdavinejad & Moradchelleh, 2011b: 677-682). It seems that the role of vernacular architecture in design of green areas e.g. urban parks has a lot to do with comfort and satisfaction of participants (Mahdavinejad et al., 2012: 65-68). Regarding to the literature review of the research, the purpose of this study is three fold: (1) describe characteristics of historic gardens and urban parks, (2) examine how these characteristics might differ between historic gardens and urban parks, and (3) describe how different types of landscape changes are liked and perceived, so we tested three hypotheses:

(H1): there is no difference in the perception of emotional concepts in the field of "pleasure" between urban park and garden audiences.

(H2): there is no difference in the perception of emotional concepts in the field of "excitation" between contemporary urban park and garden audiences.

(H3): there is no difference in the perception of emotional concepts in the field of "dominance" between contemporary urban park and garden audiences.

II. Literature Review

2.1. Importance of Meaning

The conception of the visual environment includes an object as the material environment, and the subject, according to which the environment is analyzed. The problems of the evaluation and creation of the visual environment cannot be solved considering only the environment without a subject –the society. The society is miscellaneous and there are a lot of attitudes to the landscape as a visual environment. Those attitudes differ according to the social position, education, profession, etc. These factors determine evaluation purposes and priorities (Kamičaitytė-Virbašienė & Janušaitis, 2004). The model explains landscape perception as a function of two latent variables: making sense (understanding) and involvement.

Humans, for adaptive reasons, prefer environments that are easy to comprehend, or easy to make sense of, but that are also simultaneously challenging or involving. Furthermore, environments that are easy to understand possess coherence and legibility; whereas, environments that are involving contain complexity/diversity and mystery (N.Singh, Donavan, Mishra, & Todd D., 2008). When we try to describe the meaning of a cultural symbol, we sometimes have difficulties to find the right words. The reason for this seems to be that cultural symbols often have very complex meanings (Schaefer & Rotte, 2010). Of several approaches to assessing landscape perception, one dominant approach (the cognitive paradigm) attempts to identify the meanings and values associated with landscapes with the objective of building predictive models of landscape preference (Zube, 1991).

2.2. Persian Garden

Persian garden is a place surrounded with mystery and restricted by codes and secrets, a place and position of memory and fantasy which does not remain within its boundaries, its scope expands beyond its walls and limitations, including the natural and cultural basis and the potentials of the environment that is around it. It means more than its tangible and objective characteristics and also associates and recalls its relations with universal order. Garden, this tame nature, enjoys the aesthetic, high, transcendent and utility values all at the same time (Irani behbahnai & khosravi).

2.3. Semantic Differential

The technique of semantic differentials has been introduced by Osgood et al. (1957). It was designed to measure the connotative meaning of concepts, personalities, or symbols. In this method subjects are asked to rate a concept or term on a scale with the poles described by two contrary adjectives (e.g. 'healthy' and 'sick'). The results provide information about the connotations of the term by revealing its relationships to a number of adjectives in a semantic space (Osgood, Suci, & Tannenbaum, 1957); for a German sample: Hofsta'tter, (1957). For example, the term 'safety' may be close to the adjectives 'peaceful' and 'cooperative', but far away from the adjective 'wild'. Based on a large collection of semantic differential scales, Osgood et al. (1957) performed factorial analyses and found three underlying determinants of semantic space that people use to assess concepts or phrases. Subsequent studies revealed that these three underlying dimensions are used by all subjects to evaluate concepts, values, or terms of their social environment, irrespective of language or culture. The first of these three factors are referred to 'evaluation' and loaded high on the adjective pair 'good-bad'. A second factor was related to 'strong-weak' adjectives. This factor was named 'potency'. Finally, the third factor described an 'active-passive' dimension and was labeled 'activity'.

Experimental studies have showed three primary emotional responses: pleasure, excitement and dominance. Pleasure deal with like and dislike sense; Exciting related to environment interesting features and Dominance is related to the sense of personal freedom (Lang, 1987). Ten of the bipolar pairs emotions extracted from library sources were classified in three primary emotional responses on a 7-point scale (It shows in Table 1).

Table 1: Definitions of the landscape descriptor variables and their attributes

Variables	Semantic differential bipolar pairs (1-7)	Definitions
Pleasure	Pleasant - Unpleasant	Pleasure deal with like and dislike sense
	Friendly - Unfriendly	
	Happy - Unhappy	
Excitation	Fictional - Realistic	Exciting related to environment interesting features
	Beautiful-Ugly	
	Glorious- Trivial	
Dominance	Hectic - Peaceful	Dominance is related to the sense of personal freedom
	Safe - Unsafe	
	Closed - Open	
	Comfortable - Uncomfortable	

III. Methodology

3.1. Environmental Setting and Procedure

The Kaplan's preference model views humans as information- seeking, information-using organisms. Because efficient gathering, processing, and storage of environmental information (in the form of cognitive maps) have survival and adaptive significance, humans have become extremely proficient at gathering and processing information from their environment. People react to visual environments, including landscapes, in two ways: as a visual array or two dimensional patterns, similar to a flat picture (e.g., the photograph of a given landscape), and as a three- dimensional pattern of the space that unfolds before them. That is, in perceiving a setting, scene, or landscape, apart from considering the immediate, two-dimensional qualities of the scene, people also imagine themselves in the scene and make projections about how they would function if they were to enter into the scene (Kaplan, 1992). Semantic Differential was developed by Charles Egerton Osgood and is designed to measure the connotative meaning of concepts. Firstly, after widely surveying a great amount of landscape resources, the method sets up landscape visual influence factors. Secondly, by showing photos, public feelings towards the visual elements can be measured and quantificational data considering public feelings can be produced. Lastly, it utilizes factor analysis to measure the quantificational data. Many surveys proved that using photographs as landscape evaluation intermediary is almost as same as site landscape evaluation (Weimin, 1996). The technique of altering the sets of items from positive to negative, as previously done by (Yildirim, Akalin-Baskaya, & Hidayetog'lu, 2007) (Akalin-Baskaya & Yildirim, 2007) (Kavaliauskas & Kurševičius, 1977) (Natori & Chenoweth, 2008) (Schaefer & Rotte, 2010) (Weimin, 1996).

In this study historic garden and urban park was represented by photographic prints. Photographs have been shown to serve as a good representation of real scenes. To reduce the seasonality bias, all Photographs were taken in early autumn approximately the same season in which the study was conducted. Photographs were chosen projection for the presentation media for logic reasons. The projection method has the advantage of enabling the survey of a large number of subjects, but we chose Photographs because we assumed it difficult to gather a large number of participants in one location. Slide projection would also limit the locations where the survey could be conducted, and pose difficulties in controlling for the brightness and contrast of showed Photographs.

3.2. Participants and Samples

The participants in this study were selected randomly among the students who study in department of architecture at Sama Islamic Azad University in Saveh, Iran and who were selected from those who had not seen the materials prepared for the experiment. In total there were fifty students involved. In order to achieve a more robust statistical result, the distribution of class years and gender of the participants were equally apportioned: 50% of the participants were in their first year and 50% second; additionally, 50% of the participants were female and 50% were male. The ages of all the participants range from 19 to 26.

3.3. Questionnaire

The questionnaire form consisted of two parts: the first part asked for general information about the participants i.e. department, age, gender, degree, years of education etc.; the second part consisted of seven-point semantic differential scales about their perception of meaning and concept between historic garden and urban park. The participants had to evaluate each of the bipolar adjective pairs on a 1–7 semantic differential scale. A total of ten bipolar adjective pairs were evaluated by the participants after familiarizing themselves with the items, three of which dealt with pleasure, four of which with Excitation, while the remaining items measured Dominance. Related bipolar adjective pairs were designated for each category; for pleasure: Pleasant – Unpleasant, Friendly – Unfriendly, Happy – Unhappy; for Excitation: Fictional - Realistic, Beautiful – Ugly, Glorious- trivial, Hectic – Peaceful; and for Dominance: Safe – Unsafe, Closed – Open, Comfortable – Uncomfortable.

3.4. Survey Administration

Participants were familiarized with the survey instrument using a sample Photographs at the beginning of the study. Participants were instructed to assume being present in the landscapes depicted by the Photographs not to evaluate the Photographs themselves and to describe their perceptions of those scenes on the Semantic Differential scales on the questionnaire. Having been familiarized with the survey instrument, the participants evaluated the photographs one at a time.

The set of Photographs were sorted in a random order. Two identical sets of Photographs were prepared, so that up to two persons could simultaneously complete the survey with their own set. When there were more than two persons participating simultaneously, Photographs were passed around the participants until everyone had evaluated all the Photographs. Students were surveyed in groups in their classrooms during their normal class hours, and all completed the survey within 20 min.

IV. Results and Discussions

The dependent variables (Pleasure, Excitation and Dominance) were separately computed for each of the historic garden and urban park. There were a total of five Photographs for each site. Preparation for testing ten scales conducted with SPSS software. Cronbach's alpha to assess the validity and reliability of the items in each scale was used. If the coefficient alpha for the factor was less than 0.7, the hypothesis test was dropped. The survey is a valid and reliable measure of the

construct because its validity and reliability coefficient confirmed by Cronbach alpha (0.7) and a pilot study with 32 respondents was undertaken to assess the validity and reliability of a questionnaire. Factor analysis of each scale was developed and Sample items for each scale in historic garden and urban park are showed that ten scale (Table2). The Cronbach alpha coefficient estimate of internal consistency for the scale, including the average scores for ten bipolar Semantic Differential scales grouped together in Table 2, was 0.91. The coefficient of all items was above 0.70, representing good reliability.

Table 2: Scale reliability of Semantic Differential used in the survey

Semantic differential bipolar pairs (1-7)	Factor loading	Scale reliability
Pleasant - unpleasant	0.86	
Friendly - unfriendly	0.94	
Happy - unhappy	0.93	
Fictional - realistic	0.92	
Beautiful-ugly	0.83	0.91
Glorious- trivial	0.88	
Hectic – peaceful	0.92	
Safe – unsafe	0.93	
Closed – open	0.88	
Comfortable - uncomfortable	0.82	

In this part, the statistical differences between meaning and implications for the dependent variables were analyzed. The results are given (in Table 3) as the mean, standard deviation and homogeneous group for three groups of scale items (Pleasure, Excitation and Dominance). The results (Table 3) indicate that perceptions of the meaning and implications for the dependent variables were statistically different and the ordering of meaning and concepts from the most positive to the most negative value is given as follows:

Table 3: The mean and standard deviation for ten bipolar Semantic Differential scales

Semantic differential bipolar pairs (1-7)	M	SD
Pleasant - unpleasant	5.02	1.53
Friendly - unfriendly	5.16	1.68
Happy - unhappy	4.94	1.97
Fictional - realistic	4.92	1.42
Beautiful-ugly	4.8	1.45
Glorious- trivial	5.1	1.72
Hectic – peaceful	4.64	1.21
Safe – unsafe	4.88	1.66
Closed – open	5	1.34
Comfortable - uncomfortable	5.06	1.36

The differences among the dependent variables including between historic garden and urban park were tested with one-way analysis of variance (ANOVA). According to these results, the differences among the dependent variables were found to be statistically significant for all Semantic differential bipolar pairs. The further steps of the analysis addressed the effect of the kind of landscape on the emotional responses of participants. For this purpose, in the first step of the analysis, mean values of the factors were compared across the experimental conditions. The comparison of the mean values of the observed variables between the different conditions of the experimental factor revealed significant differences as a result of the type of landscape. Subjects showed a clear preference for Initial emotional reactions representing historic site imagery, as compared to the visual representations of historic garden or urban park, with respect to attitude toward the initial emotional reactions and positive emotional responses evoked by the stimuli. Results of the descriptive analysis of the attitude toward the Initial emotional reactions scale and the semantic differential scales on emotional responses are shown in Table 4. One

way ANOVA analyses were performed for initial emotional reactions and each of the emotional response measures. Differences in the preference scores are appreciable and overall significant ($p < 0.001$).

Table 4: NOVA results of the dependent variables in terms of Initial emotional reactions

Variables	Semantic differential bipolar pairs (1-7)		Sum of squares	df	Mean squares	F
Pleasure	Pleasant – unpleasant	Between groups	0.18	1	0.18	0.11
		Within groups	74.8	48	1.56	
		Total	74.98	49		
	Friendly – unfriendly	Between groups	0.32	1	0.32	0.19
		Within groups	82.4	48	1.72	
		Total	82.72	49		
	Happy – unhappy	Between groups	2.42	1	2.42	1.23
		Within groups	94.4	48	1.96	
		Total	96.82	49		
Excitation	Fictional - realistic	Between groups	8	1	8	6.22
		Within groups	61.68	48	1.28	
		Total	69.68	49		
	Beautiful-ugly	Between groups	2	1	2	1.45
		Within groups	66	48	1.37	
		Total	68	49		
	Glorious- trivial	Between groups	7.22	1	7.22	4.48
		Within groups	77.28	48	1.61	
		Total	84.5	49		
	Hectic – peaceful	Between groups	5.12	1	5.12	4.51
		Within groups	54.4	48	1.13	
		Total	59.52	49		
Dominance	Safe – unsafe	Between groups	9.68	1	9.68	6.48
		Within groups	71.6	48	1.49	
		Total	81.28	49		
	Closed – open	Between groups	2.88	1	2.88	2.19
		Within groups	63.12	48	1.31	
		Total	66	49		
	Comfortable - uncomfortable	Between groups	0.02	1	0.02	0.014
		Within groups	66.8	48	1.39	
		Total	66.82	49		

With regard to the emotional responses, the initial emotional responses showing the conqueror setting rated lowest on comfortable- uncomfortable a feeling of dominance and second lowest in pleasant – unpleasant a feeling of pleasure. Conversely, conqueror elicited safe – unsafe most feelings of dominance, while rating second fictional - realistic most on excitation. Strongest positive responses were evoked by the semantic differential depicting the historic garden.

For the analyses of inferred landscape, paired t-test was performed to test for significant difference in ratings (by the same observers) between two similar historic gardens and two similar urban parks ($p = 0.05$). The differences among ten factors in the study (for each observer type, two kinds of landscape) were tested. Analysis of the variables was conducted by using SPSS software. If the direction of the response categories does not make a difference, then the means for the ten factors should all be statistically equivalent. Differences were considered significant at $P < 0.05$, indicating that the vectors of means for the two groups were equivalent.

V. Conclusion

In terms of ecological psychology, environment aesthetics shaped by the enjoyable environment. The findings confirm the theory of ecological perception on the importance of systems, the perceptual senses and creating an environment rich in sensory highlights. The sensory richness can increase the reliability and quality of the call action.

The research shows that the perception of emotional meaning and concepts of pleasure Variable, pleasantness, friendliness and happiness, between historic garden and urban park visitors, there is no difference. Test results of one-way analysis of variance (ANOVA) showed that the differences observed is in arousal of interest in the Excitation variable of the environment that includes “Fictional – realistic”, “Glorious- trivial” and “Hectic – peaceful”, Thus, a set of environmental capabilities and potentials, make a unique position for human behavior in the environment. In other words, the difference in the emotional responses, the interaction between features of a historic garden or urban park, and the needs of its audience.

Also in Dominance variable in scale of security among historic gardens and parks in urban contemporary audiences, major differences were observed.

Persian Gardens have a lot of apparent and latent values that many of these values are missing. This study has shown that most of these values are probably related to excitement variables of Persian Garden. In other words, fictional, majesty and excitement scales of Persian gardens are same missing values. The research shows that urban parks design are far from their original, so it is not the extension of the principles of Persian garden.

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