

Full Length Research Paper

Prospect and refuge as the predictors of preferences for seating areas

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Accepted 18 February, 2010

The aim of this research is to analyze the significant spatial features of successful seating areas in urban open spaces. It attempts to identify which attributes should be taken into consideration when these successful features are evaluated. It is assumed that the criteria related to these features can be clarified partially by means of Appleton's prospect-refuge theory. In the questionnaire, 148 users of an urban park were asked to mark various features (prospect, refuge, most attractive scene, most preferred, non-preferred, comfortable, safe etc.) corresponding to the places on the plan. The places corresponding to the different features were ascertained by overlapping the answers for each question using AutoCAD, 2007 software. This analysis revealed that places determined for 'prospect' and 'most preferred' features had a high correlation; they were often the same. Analyses of the areas stated by the subjects, related to the features by means of cross tabs, have shown that this relationship between preference and prospect is statistically significant. However, the same connection could not be found between 'refuge' and preference. Differences between evaluations that are related to various features (like prospect, refuge, safety, overlooking the area and comfort) of preferred and non-preferred places were also statistically important. Furthermore, prospect, refuge, safety and the comfort values of preferred places ascertained to be at higher levels than non-preferred ones.

Key words: Landscape preference, prospect refuge theory, seating places, affordances.

INTRODUCTION

As well as connecting and combining separate regions of cities, urban open spaces also integrate and unite people by providing opportunities to observe what happens in community, to apprehend psychological situation in society, to become a part of society and to communicate. Consequently they evolve community consciousness (Madanipour, 1999; Project for Public Spaces, 2000). Therefore, urban open spaces need to provide environmental and spatial quality so that they meet the various expectations of users.

According to Whyte (1980), successful open spaces have many and different kinds of users and they are places in which various kinds of activities occur. In his study he determined that the most used plazas in

Manhattan were the ones which provide rich seating opportunities. Gehl (1987) states that good seating arrangements in open spaces are of primary importance and spending time at there is possible only when places with seating opportunities exist. If these opportunities are few or poor, people just walk on by (Gehl, 1987). Similarly Cooper Markus and Francis (1998) express the importance of seating as ". for plazas to be used for stationary activities, and not just as pedestrian walkways, many kinds of sitting, leaning, and resting places must be provided." Good seating opportunities enable numerous activities such as: eating, reading, sleeping, knitting, playing chess, sun bathing, watching people and talking; and these make open spaces attractive to people (Gehl, 1987). Therefore, seating which enable these activities is vital to increase the quality of urban open spaces. What should good seating areas afford to their users? Which features affect the usage of these places positively or negatively? How or in which ways should the evaluation

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of these features be done? The main aim of this research is to find out answers to these questions.

Landscape preference and ecological approaches

Behavior is formed as a result of perceptual mechanism (Gür, 1996). Therefore, determination of environmental features that influence perception positively also means to establish features of places, which are successful in terms of behaviors/activities. Nasar (1988) implies that design professionals, who have knowledge of the relationship between properties of visual environment and human affect, can more successfully design, plan, and manage settings to fit the preferences and activities of users.

This in turn will contribute to enhancing the quality of life because the aesthetic quality of the surroundings may affect immediate experience (sense of well-being) in those surroundings. This state will cause some behaviors in individuals like being attracted to an appealing environment and avoiding an unpleasant one (Nasar, 1988). Consequently knowledge of perceptual mechanisms that are effective while using seating places is a key issue in successful seating designs. The relationship between the behavioral outcomes of these mechanisms and spatial features may enlighten the determination of design criteria, which enables or disables success.

In the studies of landscape perception and appraisal, determination of preferences has been the mostly emphasized approach in recent years. Preference researchers and design professionals in landscape architecture have the opportunity to comprehend the relationship between the priorities of people and the environmental aspects, and thus to improve people's quality of life (Nasar, 1988).

There are several theories to explain environmental preferences (Kaplan's information processing theory, Gibson's theory of affordances, Appleton's prospect and refuge theory, human habitat preference theory, Zajonc's preferanda, Berlyne's complexity theory, Huntington's application of typology to landscape art) (Woodcock, 1982). It has long been argued that environmental aesthetic and preference were derived from biological requirements of humanity for survival in ancient periods and human aesthetic responses to landscapes may be partially inborn. These approaches, called as evolutionary theories, are ecological oriented and assume that people's preferences for places are responses to environmental features which support survival. Places with these kind of features are much preferred than which do not have these features (Appleton, 1975, 1980; Kaplan, 1987, 1988a, 1988b; Ruso et al., 2003; Ulrich, 1983; Woodcock, 1982).

Gibson (1986, p.127), one of the pioneers of ecological approach, suggests that people do not perceive their environment neutrally; they view it in terms of which

affordances it provides or which needs it might fulfill. He explains that affordances are what the environment offers, "what it provides or furnishes, either for good or ill". Lynch (1960), in his work "Image of the City", suggests that urban environments are preferred according to their degree of affording comprehension of their structure. Woodcock (1982) claims that theories, which attempt to explain environmental preferences in terms of what they afford for exploration, are inspired by Lynch's approach. According to Woodcock (1982), these theories attempt to show how a simple neurological mechanism leads to exploration of environment, acquisition of information and preference of locations that enable this activity. Appleton (1975), in his prospect-refuge theory, clarifies what kinds of affordances these locations should have. In such a case these questions occur: do all the affordances provided by environment affect preference at the same level? What kinds of affordances make an environment more preferable? The results of the conducted researches have shown that the concept of affordance for an environment influences the preference (Rourke, 2006; Talen and Coffindaffer, 1999; Woodcock, 1982). Moreover, it increases preference. Therefore, when we consider the concept of "affordance" for sitting preferences which cause open spaces to be attractive, we intend to answer these questions: which features make seating areas more preferable? Are there affordance types taken into account in the preference of seating places?

Prospect-refuge theory

Appleton (1975, 1988), by means of his prospect-refuge theory, explains what kind of environmental affordances accelerate, simplify access of environmental knowledge and what kind of environmental features display these affordances. He suggests that individuals are motivated to perceive their surroundings in such a way that environmental information is acquired and stored in a form in which it can be efficiently and quickly retrieved when needed to ensure survival. One of the most important of these ways is the opportunity to keep the channels open by which we receive environmental information -in considering landscape we are naturally most concerned with the sense of sight- and the other one is the opportunity to achieve concealment. Consequently basis of prospect and refuge are rendered.

Appleton (1975, 1988) states that evolutionary development of humanity has led humans to prefer a setting in which, without being seen (refuge), they can see a broad vista (prospect) and such preferences increase their chance of life by affording a safe observation point and the capability to safely see, predict, and act in relation to potential predators, prey, mates. Range of vision is directly related to survival. If one can see his/her own enemies without being seen by them, then one's chances

of survival are greatly enhanced. These landscape features seem to simplify survival, also satisfy aesthetic pleasure. An unimpeded opportunity to see is called a prospect whereas an opportunity to hide is called refuge hence the name prospect refuge theory emerges when these two words combine (1975).

In recent years prospect-refuge theory has become prevalent in the studies of landscape perception and aesthetics. Researches which examine a lot of concepts like security, visibility and enclosure (Blöbaum and Hunecke, 2005; Jorgensen et al., 2002; Luymes and Tamminga, 1995; Stamps, 2005a, 2005b), fear of crime and perceived danger (Fischer, Nasar, 1992; Nasar, Jones, 1997), attractiveness or aesthetic responses (Galindo and Hidalgo, 2005; Fischer and Shrout, 2006; Nasar et al., 1988), landscape evaluation and preference (Aoki, 1999; Hagerhall, 2000, 2001; Herzog, 1988; Jakle, 1987; Woodcock, 1984), intended use in urban parks (Luymes, 1992), deal with this theory.

Appleton's prospect-refuge theory has been widely discussed and debated in the field of landscape perception and aesthetics. Research derived from this theory has ascertained that prospect is a vital factor in determining preference and has been supported by a substantial body of evidence (Fischer and Shrout, 2006; Galindo, Hidalgo, 2005; Nasar et al., 1988), (Hagerhall, 2000, 2001; Luymes, 1992). Evidence for refuge is variable. Whereas some research (Galindo, Hidalgo, 2005; Hagerhall, 2000, 2001) has produced supporting evidence for refuge, other studies show opposite results (Fischer, Shrout, 2006; Herzog, 1988; Luymes, 1992; Nasar et al., 1988).

As mentioned before, knowledge of the features of the relationship between visual environment and human senses makes it possible to plan and design settings that are more appropriate to users' preferences and activities. Can we answer the question of "what kind of environmental features must successful seating places contain" with the help of prospect-refuge theory's criterion? Gehl (1987) states that when it comes to the choice of a place to sit orientation and view play an important role. The opportunity to see events in the area is the most dominant factor when choosing seating. A safe sitting place, which offers a continuous view, is more popular than places that do not offer these advantages.

"Responsive Environments" (Bentley et al. 1985) is another work that notes criteria related to urban open spaces. It emphasizes choosing the edges of a space as seating and viewing places and examines the features of these places in terms of prospect-refuge theory. Edges of a space offers a sense of refuge as well as a prospect of what is going on: the greater the proportion of edge to the area of the space, the greater the opportunities.

Dee (2001) in her work "Form and fabric in landscape architecture", included the prospect and refuge theory in the group of models of design and qualities of place and stated that it is a very effective factor in recognizing

landscape experience. Thus when supplying refuge, landscapes with a strong viewpoint are vital in constituting an attractive landscape and as such prospect-refuge is a desired quality in landscape design.

As a consequence of these works, it is understood that prospect-refuge theory can be used for the evaluation of the landscape features of seating places in urban open spaces. An opinion about environmental features may be obtained by examining whether perceived features of the most preferred places are coherent with the basic principles of this theory, or not. Furthermore, the results may be confirmed by questioning whether non-preferred sitting places display differences in terms of the same features.

Terms of comfortable and attractive landscapes have been added in accordance with works of Whyte (1980) and Gehl (1987). Both of these researchers stated that seating places must be comfortable and moreover seating places which provide physical and social comfort will cause the most positive impressions. Additionally, Gehl (1987) claimed that people tend to choose places that have the most attractive scenes or activities when they are in open spaces. Therefore, the direction and viewpoint of sitting places are significant in terms of their quality. Hence, these two terms will be examined. Also "overlooking the area" has been added to questionnaire since Appleton (1975) stated overlooking as a feature which supports prospect. This term was examined by another researcher Hagerhall (2000) and in her study the question 'overview' was formulated to communicate Appleton's primary prospect, which in many earlier studies relates to the experience of an over all view from a high position in the landscape.

In accordance with this information, the special purposes of this research may be classified as:

1. To find out whether environmental affordances, defined as prospect (unimpeded, wide view or being able to see around without any hindrance) and refuge (shelter or not being seen by others, to be able to control visual access to someone's own presence) by prospect-refuge theory, affect preference of sitting places positively or not,
2. To find out whether areas, which have different features in terms of affordances (the width of view one can see from where he/she is sitting, the degree of the feeling of safety that seating place provides, the degree of the ability to control visual access to someone's standing point) also have different degrees of preference for sitting activity or not.

Assumptions of the research are as follows:

1. Prospect and refuge affordances provided by a seating area contribute to the preference of that place.
2. Places which are rich in term of these affordances are more preferred than those that do not have these facilities.

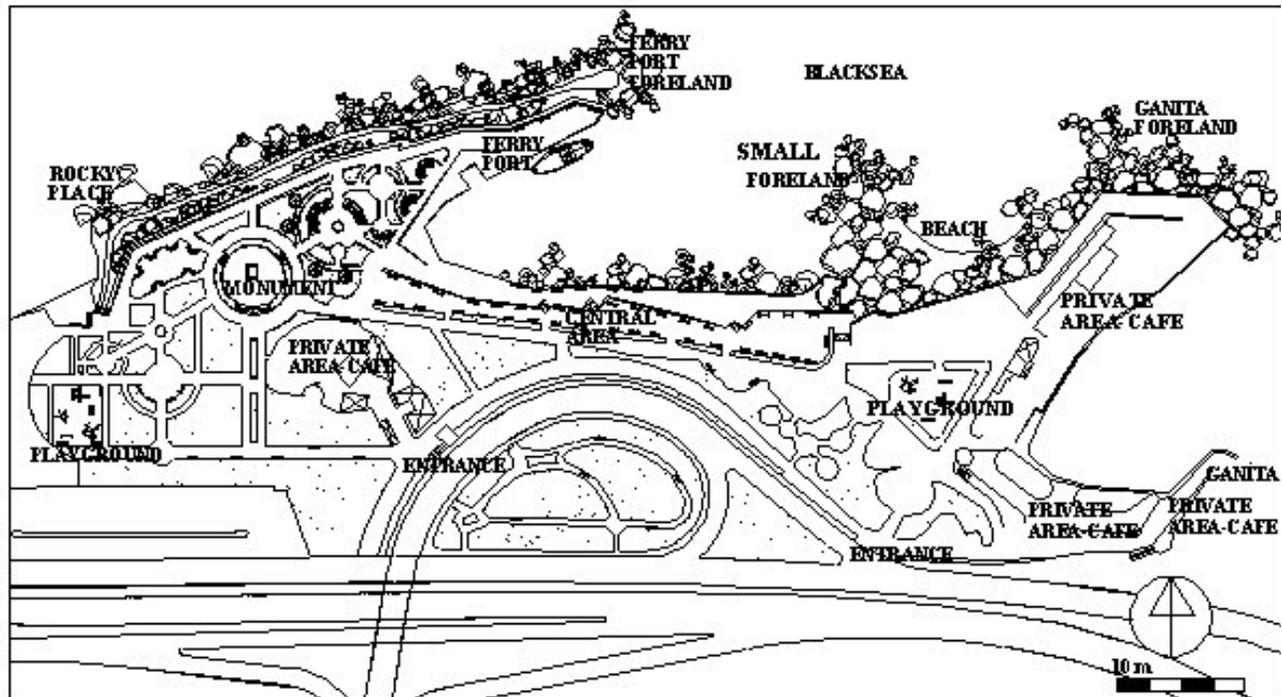


Figure 1. The site plan.

3. Comfortable (psychological or/and physical) sitting places with attractive scenes (which consists of other people and their activities or different kinds of landscapes) are more preferred than others.

In order to achieve the first purpose, the most distinctive areas in the study area will be determined in terms of concepts like prospect, refuge, safety, comfort, attractive scene. This will be checked to see whether these areas are coherent with the most preferred area or not.

METHOD

Study area

The study area is the Hungarian Turkish friendship park situated on the waterfront of Trabzon's city centre, which is easy to reach and used frequently by a large urban population (Figure 1). Being a waterfront park and located near to Ganita café which is the only remaining natural coastal landscape in the city centre with 120 years background are the features which make the park popular. Sitting, fishing, eating-drinking in private businesses, listening to music from the cafes, ferry tours, music/dance performances and playing in the playgrounds might be counted among the mostly performed activities. The areas that belong to private corporations (cafes, restaurants) and the areas whose sea view is completely blocked by walls are not included to the study area. The sea and the rest of the park can be seen with different extends of view from all areas of park, apart from those areas not included in the study. The changes in extend of (wide or narrow, unimpeded or interrupted) view of sea and activity areas have determined prospect level. Besides it has been considered that the features like differences in density of vegetation and variation in the topography will offer various refuge opportunities. Visitors' being from a wide

range of socio-demographic characteristics is another efficient factor in choosing this area. If it is considered that successful urban areas are able to attract people who have different characteristics, this situation may offer the possibility of evaluating the success when evaluating the data.

The questionnaire

A plan of the site was given to the participants and participants were asked to mark the most dominant places in terms of prospect, refuge, comfort, safety and attractive scenery. Furthermore, they were asked where they would prefer, and not prefer, to sit if they had the freedom to choose. Besides this, there was an eight-item questionnaire related to the places where they would prefer (or not prefer) to sit, participants were asked to rate these items. All ratings used a 5-point scale ranging from 1 (absolutely I do not agree with) to 5 (absolutely I agree with).

For prospect, there were two questionnaire items; "It has a wide and unimpeded view (prospect 1)" and "I can easily see what is going on around (prospect2)".

For refuge; "It offers opportunity for protection from other people's glances"

Sense of safety; "It makes me feel safe while sitting".

Comfort; "It offers the opportunity to sit comfortably".

Overlooking the area; "It enables me to overview to the area".

Variety in activity; "It enables me to perform different activities while sitting".

Attractive scene; "It has an attractive (arousing my desire to view) scene".

Table 1. Distribution of the demographical characteristics related to the participants.

Demographical data	Number of persons	Percentage (%), n = 100
Gender		
Female	85	57.4
Male	63	42.6
Age (years)		
15–20	32	21.7
20–25	46	31.1
25–30	28	18.9
30–35	25	16.9
35 over	17	11.4
Education		
Uneducated	-	-
Primary school	1	0.7
Secondary school	2	1.4
High school	25	16.9
University	120	81
Occupation		
Student	87	58.8
Employee	51	34.5
Retired	1	0.7
Self employment	7	4.7
Other	2	1.4

Educational background, occupation, age and gender of the participants were also noted. The questionnaire was conducted with users of the park. In order to get more reliable comments on features of the area, the questionnaire was only conducted with people who have a good knowledge of the area. The interviewer informed the users of the park that there was a questionnaire conducted about the park and asked whether they would like to participate in or not. 21 users rejected to attend and 153 people accepted. Thereafter, the interviewer asked volunteers whether they knew the park well or not and how many times they visited the park. The survey was carried out with 148 users who stated that they regularly visit or know the park well. Before the survey, participants were informed that there were no exact answers to the questions like right or wrong. The survey was intended just to take their opinions, thus they were requested to answer the questions on impulse. Moreover, some parts of the area were not included in the survey and these parts were displayed on the plan. It was pointed out to the participants where they were sitting and thus participants comprehended the plan clearly. Participants were told that they could choose anywhere included in the study area (including the places they are sitting at that moment) as a response to the asked features but only one place for each question. The area could be any size that they would prefer and if they wanted they would mark the same place as an answer for different questions. The interview took between 10 - 15 min in general; rarely did it reach to 20 min.

Between the months September and October, the reporter interviewed 148 people in weekdays and weekend afternoons. Participants were between the age of 16 and 55 and their occupations varied from civil engineer, doctor, student, secretary, waiter, teacher, academic, housewife to self-employment and retirement.

Demographical characteristics and distribution of the participants are shown in the Table 1.

RESULTS

General classification, frequencies and, coherence between areas

The areas determined in the questionnaires by the participants, were overlapped using AutoCAD, 2007 and thus the most demanded regions were found. The marks made by participants on the maps were scanned and transferred to computer then re-drawn with AutoCAD, 2007 software. By this way the marks made by participants transferred to CAD as they did on the map, without any simplification or changing their size or shape. Areas, which had overlapped more than 10 answers, were grouped and named together. Areas, which had overlapped less than 10 answers, were not selected and they were named as “the others” category. Then χ^2 -tests were conducted by SPSS 11.0 to determine if these categories are statistically meaningful. The results of the χ^2 -tests showed that all the categories are statistically important (for prospect: $\chi^2 = 24.347$, 3df, $p < 0.01$; for refuge: $\chi^2 = 24.117$, 5df, $p < 0.01$; for most preferred

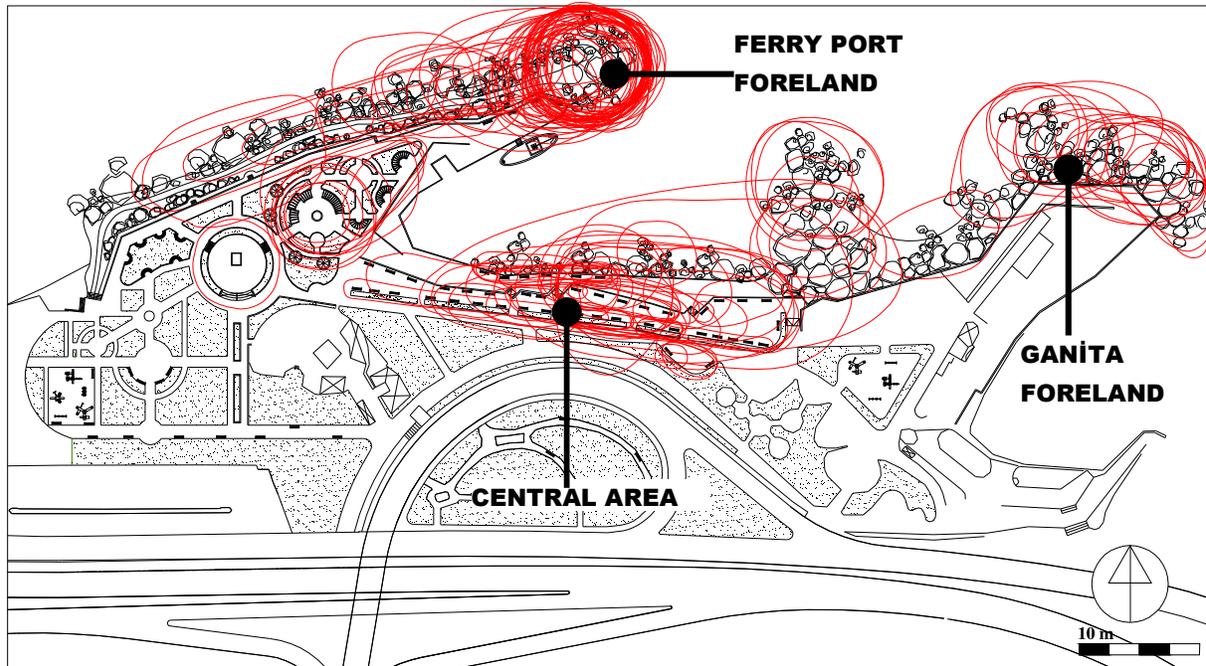


Figure 2. The most frequent "prospect" areas (Ferry Port Foreland, 39.5%; Central Area, 26.5%; Ganita Foreland, 19.1%; Others 23.1%).

areas: $\chi^2 = 21.603$, 4df, $p < 0.01$; for non preferred areas: $\chi^2 = 40.028$, 5df, $p < 0.01$; for safety: $\chi^2 = 20.925$, 3df, $p < 0.01$; for attractive scene: $\chi^2 = 24.657$, 4df, $p < 0.01$; for comfort: $\chi^2 = 9.913$, 2df, $p < 0.01$). Consequently, findings of the ascertained areas resulting from the questionnaire are as follows:

1. When the areas chosen for prospect are examined (Figure 2), front parts where the landscape can be viewed uninterruptedly and forelands that have topographical variation (and more clear sight) gain importance.
2. Areas determined in terms of refuge (Figure 3) have been generally similar to prospect. Additionally, the northwest rocky sides, which have no visual connection, due to the location of the area as well as hindrance of topography, and the edges of central area, have been densely pointed out.
3. Areas with attractive scenes and areas classified as preferred (Figure 4) are the same.
4. When the question about comfort was evaluated, participants evaluated psychological and physical comfort together. Areas that are determined for comfort and sense of safety are similar. These sites are in the middle parts of the area that may be seen by everyone. Furthermore, these are outstanding places supported by equipment for seating and shelter as well as architectural elements such as monuments.
5. Areas determined in relation to preferred sitting places (Figure 4) have been mainly related to prospect, attractive scene and partially

related to comfort, safety and refuge.

6. When non-preferred areas (Figure 5) are analyzed, it is observed that prospect cannot be provided owing to the intensive vegetation and no changes in topography. These parts are far away from the intensively used parts thus they have poor visual connections with people and activities; they are generally located in the back frontiers of the area. It is estimated that these features will present low levels in terms of prospect, refuge, and safety evaluations.

After areas corresponding to the questions are determined, analysis has been conducted in order to determine whether these areas are coherent with each other or not.

- i. Literature research put forwards that there has been a positive connection between preference and prospect. Likewise, as a result of data analysis, a connection is expected.
- ii. Extent of the view (prospect) is expected to be connected with more attractive scene.
- iii. Refuge and perceived safety are also expected to be coherent with each other.
- iv. Furthermore connections between comfort, safety and preference are also anticipated.

In order to test these assumptions, distribution frequencies of the areas in terms of preference-prospect, preference-attractive scene, preference-comfort, preference-

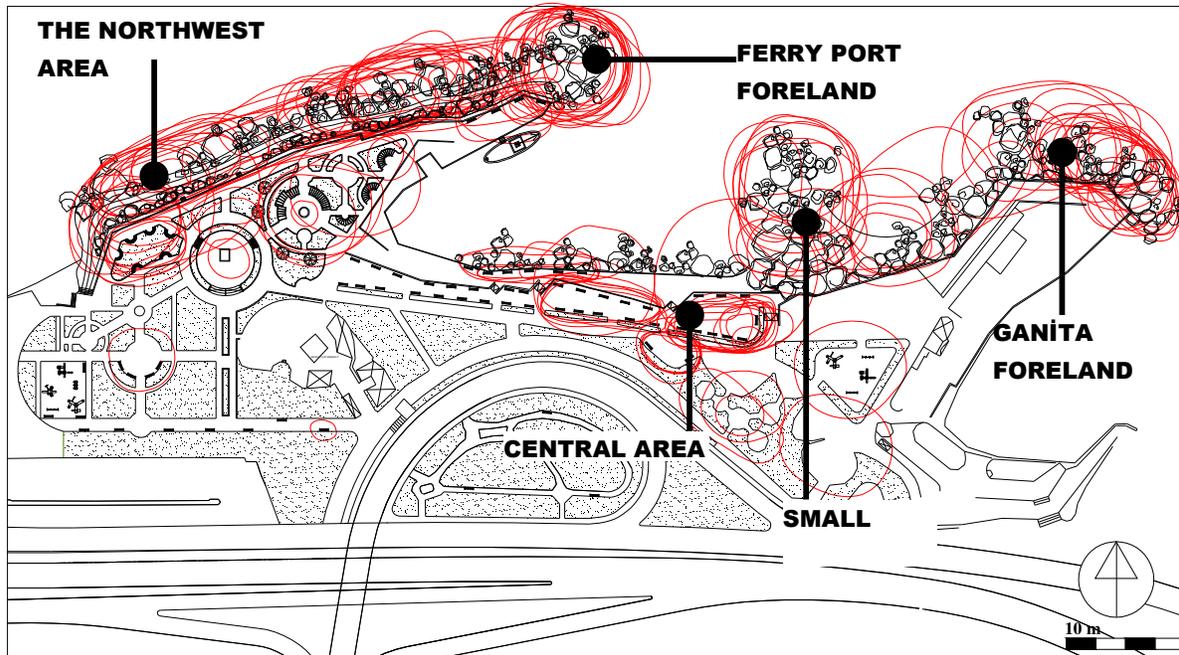


Figure 3. The most frequent “refuge” areas (The Northwest Area, 39.3%; Ganita Foreland, 15.9%; Ferry Port Foreland, 11.7%; Central Area, 12.4%; Small Foreland, 10.3%; Others, 19.3%)

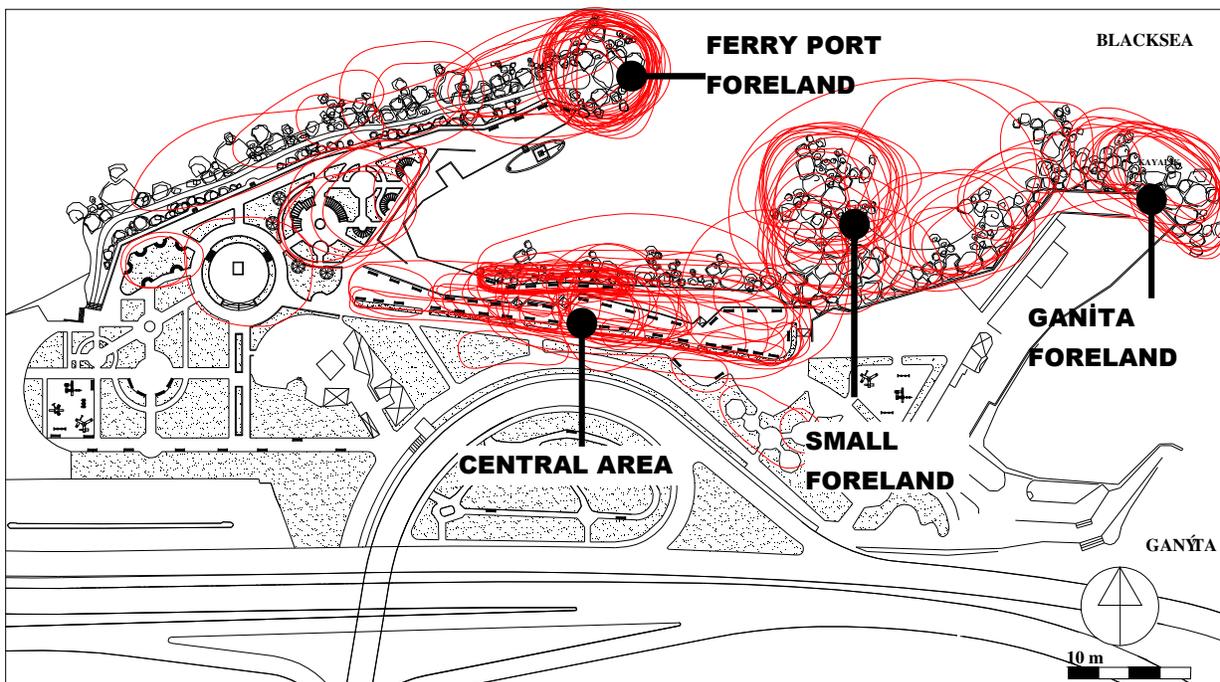


Figure 4. Preferred seating areas (Central Area, 34.2%; Small Foreland, 19.2%; Ferry Port Foreland, 18.5%; Ganita Foreland, 11%; Others, 17.1%).

safety, preference-refuge, refuge-safety, prospect-attractive scene, prospect-safety pairs, are determined in SPSS 11.0 program by means of cross tabulation. After

wards, “ χ^2 -tests” were conducted in order to examine whether relations of these distributions are statistically significant or not. In this respect, acquired results are as

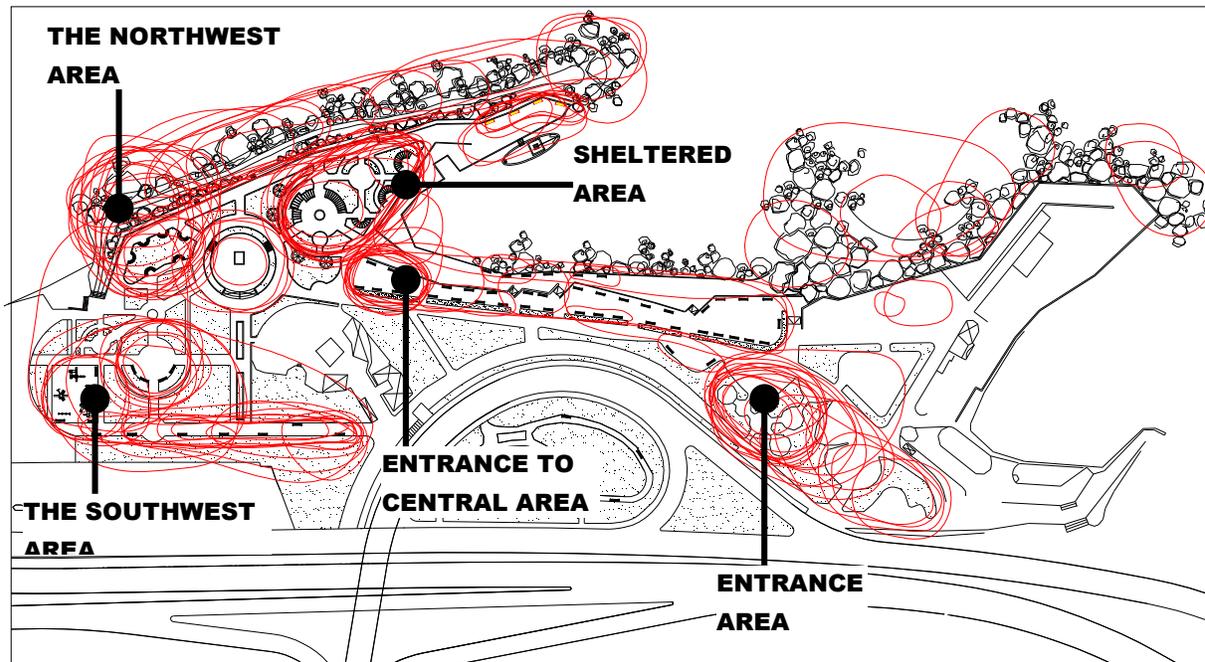


Figure 5. Non-preferred seating areas (The southwest area, 17.6%; the northwest area, 16.9%; entrance area, 14.1%; sheltered area, 10.6%; entrance to central area, 6.3%; Others, 34.5%).

follows;

- i. Significance for preference-prospect has been discovered statistically ($\chi^2 = 24.492$, 12 df, $p < 0.05$). Prospect is effective in preference of sitting places.
- ii. Preference-attractive scene coherences have also been statistically ascertained as significant ($\chi^2 = 32.657$, 16 df, $p < 0.01$). By means of these results significance of prospect and attractive scene coherences have been tested and according to the results, prospect level is efficient in evaluating attractiveness of scene ($\chi^2 = 23.161$, 9df, $p < 0.01$).
- iii. Unexpectedly, significant connections have not been discovered between the preferred areas and areas that are determined for refuge, comfort and safety.
- iv. As a consequence of data analyses, there is no significant relationship between refuge-safety and prospect-safety statistically.

Perceived spatial features of most preferred and non-preferred places

In order to answer the second purpose, average of each analyzed spatial feature values of most preferred and non preferred places have been calculated (Figure 6). Paired Samples T-test has been conducted in order to control whether the differences are statistically significant or not. In terms of perceived spatial features, most preferred sitting places in the park have acquired top values in

terms of all examined features. Conducted analyses have showed that these differences are significant for all features ($p < 0.01$): for prospect 1 (unimpeded view) $t = 12.916$, 140 df; for refuge $t = 9.428$, 140 df; for sense of safety $t = 15.391$, 140 df; for variety in activity $t = 12.910$, 140df; for attractive scene $t = 13.991$, 140 df; for comfort $t = 7.130$, 140 df; for prospect 2 (to have a look-see round the area) $t = 7.755$, 140 df; for overlooking the area $t = 5.889$, 140 df;

Relationships between perceived spatial features

Pearson correlation analysis has been conducted in order to control whether there are relationships between such spatial features or not. This analysis has been applied to data of the preferred places. Results are displayed in Table 2. Prospect has shown a strong and positive correlation with attractive scene ($p < 0.01$). Furthermore prospect and opportunity of having a look-see round have also shown correlation ($p < 0.05$). Refuge has had a strong correlation with sense of safety ($p < 0.01$) and a correlation with comfort ($p < 0.05$). Sense of safety has shown correlations with variety in activity ($p < 0.01$) and comfort ($p < 0.05$). Variety in activity has had correlations with charming scene ($p < 0.01$) and comfort ($p < 0.05$). Similarly to the former analyses, relationship between prospect and attractive scene is conspicuous. Whereas there was not a statistically significant coherence between areas determined for refuge and areas determined

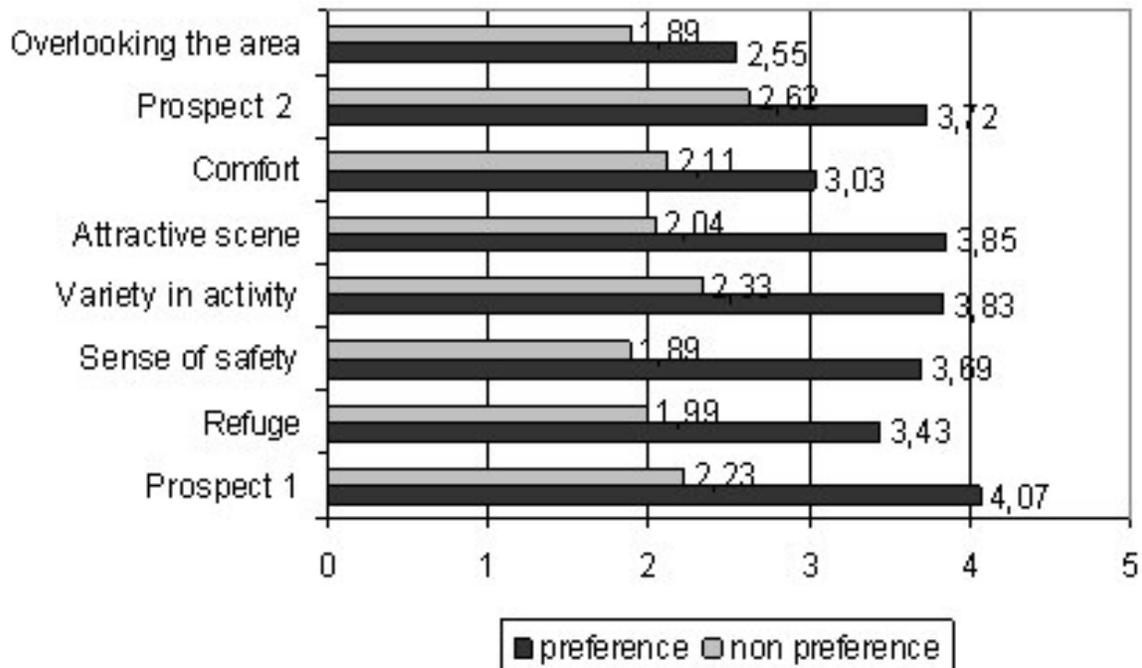


Figure 6. Comparison of spatial feature means of preferred and non-preferred seating areas.

Table 2. Correlations among perceived spatial features (N = 146).

		A	B	C	D	E	F	G	H
A. Prospect1	Pearson correlation	-	0.102	0.078	0.048	0.443(**)	0.058	0.210(*)	0.158
	Sig. (2-tailed)		0.220	0.349	0.569	0.000	0.484	0.011	0.056
	N		146	146	146	146	146	146	146
B. Refuge	Pearson correlation		-	0.312(**)	0.138	0.126	0.171(*)	-0.073	0.132
	Sig. (2-tailed)			0.000	0.096	0.128	0.039	0.383	0.113
	N			146	146	146	146	146	146
C. Sense of safety	Pearson correlation			-	0.183(*)	0.069	0.301(**)	-0.058	0.115
	Sig. (2-tailed)				0.027	0.409	0.000	0.490	0.168
	N				146	146	146	146	146
D. Variety in activity	Pearson correlation				-	0.236(**)	0.185(*)	-0.044	0.014
	Sig. (2-tailed)					0.004	0.025	0.595	0.864
	N					146	146	146	146
E. Attractive scene	Pearson correlation					-	0.127	0.199(*)	0.073
	Sig. (2-tailed)						0.127	0.016	0.382
	N						146	146	146
F. Comfort	Pearson correlation						-	0.099	0.054
	Sig. (2-tailed)							0.236	0.515
	N							146	146
G. Prospect 2 (to have a look see round)	Pearson correlation							-	0.085
	Sig. (2-tailed)								0.309
	N								146
H. Overlooking the area	Pearson correlation								-
	Sig. (2-tailed)								
	N								

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

mined for safety in former analyses, these two were related in terms of spatial features of preferred sitting places.

DISCUSSION

This research has begun with the question of what kind of features need to be taken into consideration in order to create more useful and successful seating areas in urban open spaces.

Most frequently marked areas for preference, prospect and attractive scene, were generally similar and coherence of the areas that related to these three concepts has been statistically significant. These areas are mostly front parts and forelands with wide and unimpeded scene. These results support the researches that formerly found out positive connections among wide view, prospect and preference (Galindo and Hidalgo, 2005; Hagerhall, 2000, 2001; Hammitt and Ruddell, 1987; Luymes, 1992; Woodcock, 1984). On the other hand, most remarked sitting places in terms of safety and most remarked sitting places in terms of prospect, refuge and preference had no statistically significant relationship. This situation may be clarified by Appleton's explanation as: "symbols of danger need to be appearing so that prospect and refuge mechanism can work" (1975). Because the study area has a high level of surveillance and, police checks it continuously in daytime people may have not considered danger level high and hence they have not tended to choose safe sitting places. Herzog and Miller (1998) supported this idea as: "danger does not always result in fear or negative effect, nature of humans needs to escape boredom and achieve an optimal level of arousal thus humans typically are attracted to dangerous situations up to a point, but beyond that point, attraction turns into fear as the danger becomes too salient or immediate".

In the second part of the analysis, evaluations related to perceived spatial features of preferred and non-preferred places have been compared. Comparisons put forward significant differences between preferred and non-preferred areas in terms of all features. Concepts related to Appleton's theory such as prospect, refuge, overlooking the area, sense of safety, to have a look-see round, and attractive scene and other concepts as feeling comfortable and variety in activity have higher values in preferred places.

Correlation analysis showed a relationship between prospect places and attractive scene places. Furthermore, being able to view others presences and activities are related to extent of view. Affordance to watch other people increases as prospect increases. Correlation between refuge and sense of safety supports Appleton's ideas. The relationship between refuge and comfort may be interpreted psychologically. What kind of meaning can be given to the relationship between variety in activity and attractive scene? Gehl (1987) claimed that people

tend to choose best sitting places in which many activities occur and they prefer places which offer them affordances to watch other people. Viewing a scene, which has different kinds of activities instead of one sort of activity, is more attractive. Also Whyte (1980) declared that watching other people is the activity most frequently performed by people in urban public open areas. Appleton (1975) mentions about overlooking the area as the feature that supplies prospect most evidently, however similar to Hagerhall (2000) such relationship could not be found in the park of this study.

Conclusion

This research differs from other researches conducted on landscape perception and preference issues in relation to connecting sitting activity with the concepts of landscape perception and preference.

Researches, which examine features that enable success in usage of urban open spaces, mention about presence and quality of seating areas. However, features regarding design of seating areas become also important. In this research, concepts that may clarify these design features have been examined. The criterion of prospect-refuge theory as one of the most discussed topics in landscape perception has been examined on account of sitting places in an urban park. Criteria of the theory have displayed high values about preferred sitting places. People in the park have taken into consideration some points when choosing place to sit. These points are "the widest viewpoints offered by sitting places" and "opportunity to view activities of other people visually". Moreover, they pointed out that they would not prefer places that have low levels of safety and refuge.

However, this research is limited owing to the fact that it has dealt with only one urban park. Acquired results may be generalized by examining whether the same results will be obtained for different parks with similar positions. This field needs other researches in which concepts like perceived danger, enclosure, and opportunity to escape are included.

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