

“TO SEE WITHOUT BEING SEEN” LANDSCAPE PERCEPTION WITH PRIMITIVE HUMAN PREFERENCES IN URBAN RESTORATIVE ENVIRONMENTS.

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Abstract

The ambiguous relationship between humans and the environment runs back to millions of years and the concept 'to see without being seen' has been evolved from that era. As Appleton J claims, in his Habitat theory, the genes of our ancestors who preferred such environments are still with us and we still prefer environments with our biological instincts. Appleton interprets the environments which support the ability to see as 'prospects' and the environments which support not to be seen as the 'refuges' in his prospect-refuge theory. The perception or the preference of the users has been the most impacted factor in the success of any designed space. In this study four different Urban Restorative Environments have been selected to test the 'prospects' and 'refuges' preference of the users of those places. This is tested under four aspects of the 'prospects-refuges' relationship such as; Strong prospect (open view, open observing point), Inversely balanced (close view, open observing point), Perfectly balanced (open view and closed observing point) and Strong refuge (close view and close observing point) in order to inquire the subjective perspective of preference which claims that the preference is based on the individuals. The perception of the selected spaces of Beddagana Wetland Park, Sri Jayawardenepura Kotte and Diyasaru Park, Thalawathugoda has been explored with the normal users as well as the experts in the Landscape design field. This study shows that the highest preference from both the user groups has been towards the 'Perfectly balanced' prospect refuge scenario which supports the ability to see without being seen. This result may be useful in designing specific spaces of urban landscapes.

Keywords: Landscape perception, subjective, Prospect, Refuge, Urban restorative environments

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Introduction

Several urban parks and landscaped areas have been developed in and around Colombo in the recent past. Some of these urban designed spaces have been used frequently by the visitors while some has been already abandoned, as those spaces has been ignored by the users. One of the reasons for this has been the improper designing which has neglected the user preferences in the process of designing. This is doubly important since Landscape Architecture is also being established as an influential profession in Sri Lanka in the same time period.

While such Urban Restorative Environments are very important to the urban society, especially in present times with many adverse environmental conditions like increasing urban heat island, air pollution, pollution of waterbodies and decreasing portable water due to rapid urbanization. The increased advancements in the landscape designs in the urban areas has been a positive impact in order to reduce the adverse impacts from the urbanization. However, it is evident that these newly designed spaces and locations are not evenly and equally popular among the users. The main reason for this has been the negligence of the user preferences while designing the spaces. The relationship between the environment and the human has a history with millions of years and it is a very strong and deep relationship. Landscapes can be either a reflection of a natural process or cultural changes through time, which means an existing landscape can be either a result of a natural process or either can be a designed landscape or an evolved landscape due to human intervention.

Our sensory organs play a vital role in preference of one place over the other. Our sensory organs are stimulated by different stimuli around us. These stimuli are converted into sensations by our sensory organs. These sensations are transmitted to parts of the brain to interpret these stimuli. This process is simply known as the perception in psychological terms. Perception includes mainly two processes as sensational interpretation and the interpretation through any past experience (Sharma, n.d.) As Gurr (1996) implies, behavior is a result of perceptual mechanism. Thus, the spaces which influence positively to an individual's perception contribute to a successful behavior or activities (Mumcu, Duzenli, & Ozbilen, 2010). Another inquiry by Porteous (1996) proves that the perception is receiving information via our senses. Out of the five senses, sight is valued as the most important. He claims that more than 80% of an individual's sensory perception is through the sight (Kaymaz, 2012). In general, this proves that the visual perception is the most biased sensory perception when researching about the perception. The perception is the process of deriving the information through the senses and organizing and interpreting them. This can be defined as an active process taking place in between the organisms and the environment (Kaplan & Kaplan, 1989).

People are involved with the environment to survive, they shape the environment in order to meet their expectations. While shaping the environment; the people are also inspired and shaped by the environment. This relationship between the environment and the man is known as the 'Landscape Perception'. Thus, this relationship between the people and the environment as well as the perception of the environment have been a major concern in many fields of study. (Kaymaz, 2012). The perception is sometimes interpreted as preference in many documents. Many researchers claim that, "*Perception is a key element in preference and the measurement of preference permits an examination of perceptual process.*" (Kaplan & Kaplan, 1989). There are many factors which affects the perception or the preference of a particular person as the gender, educational levels, cultural backgrounds and many more. Next section investigates how the 'Perception' can be understood in more detailed manner.

Prospect and Refuge Symbols in Landscape

The symbolic meanings for a particular space are a result of the interaction of man and the environment (Nasar, 1997). As Stokols and Shumaker (1981) claims, any landscape is a composition of material and symbolic features. Although materials are readily available for a considered space, the embossing of a symbolic meaning takes time and the cooperation of the users. Thus, any landscape incorporates a meaningful symbolism after some time. Greenbie (1982) suggests that the “*symbolism is the most important aesthetic aspect of any landscape*”. He also believes that the rarely visited landscapes like wilderness areas are more symbolic and he states that this rare visit are a result of the idea of nature itself ‘not to attract people. Instead attract the environment itself’. (Cheng, 2007).

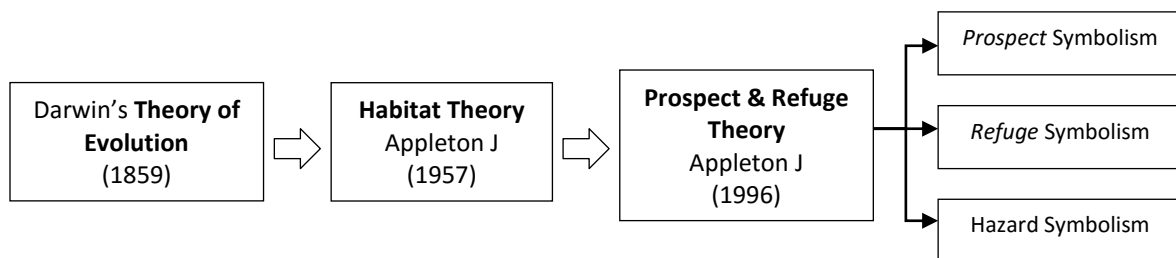


Fig. 1: Evolutional stages of the Prospect and Refuge Theory
Source: Author

With the concept of Darwin's theory (1859); Appleton (1957), a geographer derives the Habitat theory which implies that, an individual's perceived environment is same as that of an organism's relationship with its habitat. Despite of the fact, that an environment is favorable for survival or not, if that particular environment provides aesthetic satisfaction through spontaneous perception; then such a proposition is called "Habitat Theory". "*Habitat Theory, in short is about the ability of a place to satisfy all our biological needs.*" (Appleton, 1996, p. 63). Through this Habitat Theory, Appleton derives Prospect Refuge theory extending the Lorenz's (1964) phrase "*to see without being seen*" as a primitive human behaviour. This theory narrows the scope of the Habitat theory. From all the factors which cause the aesthetical satisfaction, this theory considers about the prospect, refuge and hazard symbols only. Appleton has described the prospect and refuge symbols as follows, "*Where he has an unimpeded opportunity to see we can call it a prospect. Where he has an opportunity to hide, a refuge*" (Appleton, 1996). Appleton (1996) further describes that whenever there is a chance to observe without being noticed by the others, then the aesthetic perception is attended with pleasure with no anxiety. Primarily this theory discusses the primitive behavior of human, which is the defensive behavior. This behavior analyses mainly two abilities which is the ability to move and the ability to perceive (Ramanujam, 2006).

Appleton suggests that, "*Prospect symbolism and refuge symbolism also demand a hazard symbolism to make them work*" (Appleton, 1996, p. 85). By abolishing the prospect and refuge symbolism can eliminate the hazard completely. The symbolism of hazard or danger may not represent a real danger or a hazard. But still it will create a sense of danger in the human. An environment which suggests the symbolism of prospect, which satisfies the user that his/her immediate environment is free from any form of danger will actually consists of a poisonous gas or it may be really vulnerable and full of dangers like poisonous reptiles or any other danger.

And also, an environment which suggests a perfect refuge may consider of life-threatening dangers and will not guarantee a full security. Still the sense or the symbolism of such an environment assures more secure surrounding despite of the fact whether there is an actual danger or not. The different kinds of environments can suggest prospect symbols, refuge symbols or hazard symbols. These symbolism can be of different levels which means, the degree of symbolism can be high or low depending on the factors which helps to suggest the appropriate symbolism in each case. Simply an exposure to a strongly refuge environment may feel a non-existent threat or a danger. But a non-exposed environment may suggest a rather strong sense of danger than in the case of strongly open environment. A prospect symbol should not be a prospect symbol just because someone suggests it so. Any feature, situation or an object which directly or indirectly facilitates the observation or any scene which eventually suggests a panorama or a vista falls into the category of prospect symbolism. In the same manner any situation which suggests an opportunity to hide or shelter will eventually fit in the category of refuge symbolism. These two terms prospect and refuge cannot be identified as dichotomy opposites. It is crystal clear that the opposite of “to see” is not “not to be seen”. A landscape which affords both a good opportunity to see and a good opportunity to hide is aesthetically more satisfying than one which affords neither, but again weakness in prospect or in refuge may be compensated for by strength in the other. In short prospect and refuge do not constitute a dichotomy or dualism in the sense. The most important concept Appleton mentions is the balance of the prospect, refuge and hazard symbols. These symbols may differ in the magnitude, frequency and strength, still the feel of any landscape is determined by the mix of opposite or complementary symbols (Appleton, 1996).

The balanced Prospect-refuge symbols has been used throughout the history with the evolution of the man despite of the nation, country or religion. When it comes to the survival of the man, he had to face natural hazards like rain, wind and intense sunlight. For these purposes the man began to build settlements for them to live. The earliest of the settlements was rock dens (especially at the middle of a huge rock mountain) and small huts built on trees. These settlements were also for assuring the safe from the natural hazards as well as animal hazards. The elevated areas allowed to observe the surrounding area and rock dens and huts on trees were ideal so that the observer is not been seen to the others. The hunter gathering era was the first place where the concept of ‘to see without being seen’ has been evolved. The man waited in the edge of the open area covered in closure so that he can target the prey very easily without being noticed by the prey. In such occasions the edge environment of the prospect and refuge were more advantageous for the man. But always the prey had negative chances of surviving if it chose prospect areas.

Methodology

As cited above, the perception of a landscape consists of two main aspects as the “landscape” and the “human”. The same aspects are compiled in the works of Lothian (1999) with different perspective. As Lothian (1999) claims, there are two contrasting paradigms in landscape perception as the objectivism and the subjectivism where these claim that preference is based on the physical attributes and on the individual observer respectively (Cheng, 2007). This study has accompanied this theory of Lothian and examined the subjective perspective of landscape perception. The study accommodates only the perception of the people which means that this study tends more towards the psychological examination of the preference.

The study of Jack L. Nasar (1983) and his team has accompanied scenarios with closed view, open view from a protected or non-protected observation point (Dosen & Ostwald, 2012). The

same methodology is used in this study as well. The first space, **Strong Prospect symbolism scenario** consists with an open view as well as with an open observing point. The second space is with an enclosed view but with an open observing point has been termed as the **Inversely balanced Prospect Refuge scenario** since it provides completely opposite environmental conditions to the concept 'to see without being seen'. The third space which consists of an open view and an enclosed observing point has been reinterpreted as the **perfectly balanced Prospect-Refuge symbolism scenario**. This is the perfect space which allows the user to observe the surrounding while providing the best environmental conditions with an enclosed observing point which allows not to be seen by the others. The final or the fourth space is with an enclosed view as well as an enclosed observing point which is termed as the **strong refuge symbolism scenario** as the whole area as well as the observing point is closed.

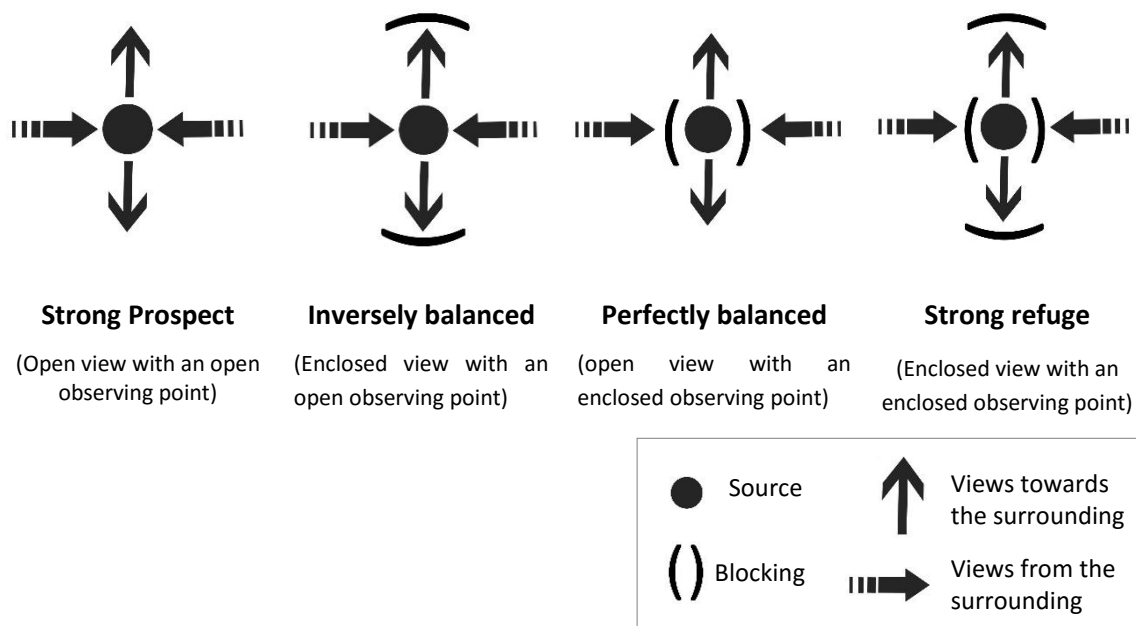


Fig. 2: Diagram explaining the nature of the Selected scenarios
 Source: Author

The subjective perspective of the landscape perception professes, the individual observer will have an influence on the landscape perception. In order to compile a measurable scale for this perspective, author incorporates the findings of the research paper "A reliable and valid self-rating measure of the restorative quality of natural environments" by Ke – Tsung Han. The research data by (Han, 2003) describes the restorative quality of the environment as a positive emotion which will be the core to the preference or an aesthetical perception of an environment. With the use of Kaplan and Kaplan's (1989) theory and Ulrich's (1983) theory he built up a "Restoration scale" using four main dimensions as emotional, physiological, cognitive and behavioral. This restoration scale is a self – measurement scale of the preference and titled as the "Short-version Revised Restoration Scale" where each dimension is evaluated with two variables amounting to total of eight variables.

An individual is the best person to evaluate the subjective perspective of the perception as that individual is the only one capable of evaluating the feelings and emotions within him. The physiological dimension evaluates the physical changes connected with the perception of an individual. But as Sri Lanka is a tropical country which doesn't experience seasonal changes and only experience the rainy season and dry season. The human physiology has also been related

with these changes only. Thus, the changes like heart beat racing, sweating or any other body stimulations or changes are not seen quite often. As a result, the physiological dimension has been removed and only the emotional, cognitive and behavioral changes are analyzed here. The meaning of 'emotion' is *"the conscious pleasure characterized by intense mental activity and a certain degree of pleasure or displeasure"* ("Emotion," 2018). According to many sources, the emotion is a bipolar dimension. Simply, each positive emotion is associated with a negative emotion. The feelings of relaxation and the good-natured quality of the environment has been evaluated here. The word cognitive suggests, *"the functions connected with thinking or conscious mental process"* ("cognitive Meaning in the Cambridge English Dictionary," n.d.). The cognition is measured with the interest to the particular space and with the attention which is gained by the space. The behavior is *"a particular way of acting"* as stated in the Cambridge dictionary ("behavior Meaning in the Cambridge English Dictionary," n.d.). Many researches like Horney (1954), Schneirla (1959), Mehrabian and Russell (1974) have agreed that the preference of an individual is a measure of his/her approach and avoidance to a certain space or a circumstance. This has two aspects as, desire to explore and the desire to stay in. Apart from that the Mehrabian and Russell's (1974) desire to seeking out was included as 'visit more often', after rephrasing (Han, 2003). With the emotional, cognitive and behavioral dimensions, an overall preference score is added in order to evaluate the relationship with each dimension separately. This final preference score is the final or the overall value given by each user according to the preference to the particular scenery.

The sample selection for the study has been carried out based on the four research paradigms of landscape perception assessment as developed by Zube, Sell, & Taylor (1982) which are expert, psychophysical, cognitive and experiential paradigms. The Expert paradigm and the psychophysical paradigm has been used in this study where the expert paradigm (Final year students of the Bachelor of Landscape Architecture degree) is the information obtained by the skilled and trained observers and, the psychophysical paradigm claims the assessment through the general users of the area. Although two categories of users are selected, both of the user categories compiles of the urban dwellers. The research was carried out with the Short-version Revised Restoration Scale by Han (2003) with the five – point Likert scale. A questionnaire and short interviews were carried out in order to obtain the necessary data.

Case Studies: Beddagana Wetland Park and Diyasaru Park

Several locations within The Beddagana wetland park and the Diyasaru park; urban wetland parks in the suburbs of Colombo in close vicinity of the parliament has been selected as the case studies for this study.

This study has accommodated the urban restorative environments since this focus more on the urban context open space designing and the perception accompanied by the urban dwellers. The simplest interpretation of the restorative landscape is the natural or built environment which is capable of restoring the stressed mental status of the user back into a comfortable state. The results of the studies by the van Berg et al. (2003) proves that the human preference lies in the natural environments than in the built environments. Many other researches have proved that the viewing natural environment than the urban settings lead to a better concentration and an improved psychological state of an individual. The researches by, Baron & Kenny (1986), Hartig et al., (1997), Herzog et al., (1997) have proved that the natural environments have a great ability to restore the psychological mind of an individual, restore and reflect. Thus, such natural environments are categorized as "restorative environments". The researchers like Van Den Berg et al., (2003), Staats et al., (2003), Wilkie & Stavridou (2013)

proved that the individuals prefer the environments where they can feel the higher restorative potential (Mutso, 2014).

The spaces selected with the space selection criteria mentioned above, under the four types of spaces as strong prospect symbolism, inversely balanced prospect and refuge symbolism, perfectly balanced prospect refuge symbolism and the Strong refuge symbolism for the two separate case studies are as follows. Preferences of tow user groups have been tested for each location.



Fig. 3:Space 1 – Strong Prospect Symbolism
Source: Author



Fig. 4:Space 2 – Inversely balanced Prospect Symbolism
Source: Author



Fig. 5:Space 3 – Perfectly balanced Prospect Symbolism
Source: Author



Fig. 6:Space 4 – Strong Refuge Symbolism
Source: Author

Fig. 3-6: Four selected spaces from Beddagana wetland park



Fig. 7:Space 1 – Strong Prospect Symbolism
 Source: Author



Fig. 8:Space 2 – Inversely balanced Prospect Symbolism
 Source: Author



Fig. 9:Space 3 – Perfectly balanced Prospect Symbolism
 Source: Author



Fig. 10:Space 4 – Strong Refuge Symbolism
 Source: Author

Fig. 7-10: Four selected spaces from Diyasaru park

Results and the Discussion

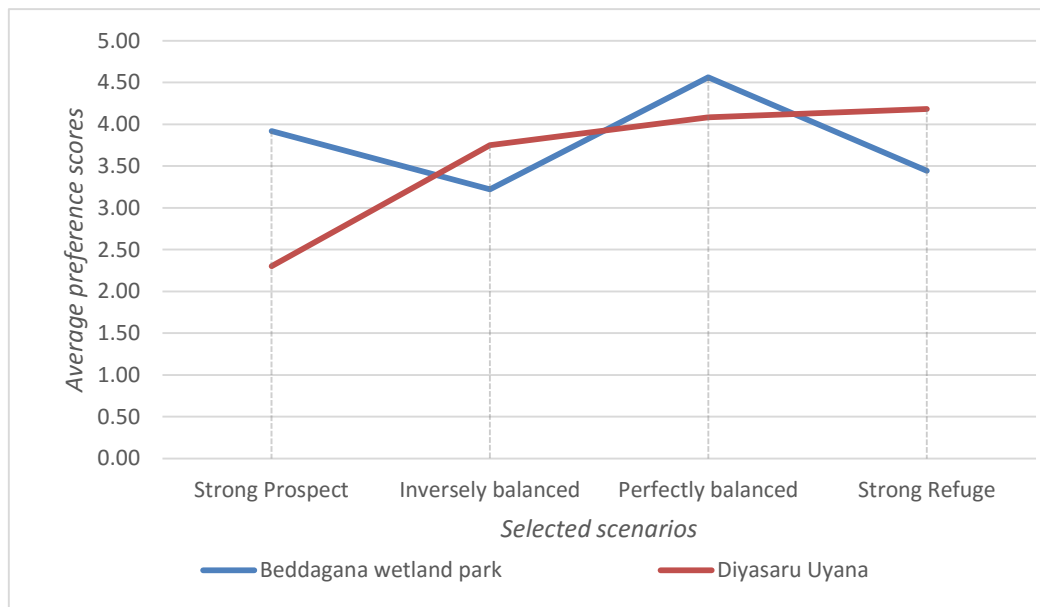


Fig. 11: Combined preferences of user group and expert group for selected scenarios in each case study

The results depicted that both the user groups had the highest preferred scene as the third space (Perfectly balanced prospect refuge symbolism) of the Beddagana wetland park. The fourth space (Strong Refuge Symbolism) of the Diyasaru Park has been scored as the second most preferred scene. The least preferred scene for both the user groups has been the first space of the Diyasaru Park (Strong Prospect symbolism). When considered with the four separate scenarios, the Perfectly balanced scenario has the highest preference and the strong refuge, inversely balanced and strong prospect scenes have been the second, third and fourth preferences respectively. The strong prospect scenery has been preferred more in the case of the Beddagana wetland park due to the presence of water in the vicinity as it cools down the surrounding. The inversely balanced prospect refuge symbolism of Diyasaru Park has been preferred more due to the scale and the nearness of the surrounding elements since it has provided more shade making the space friendlier and pleasing. The preference scores for the perfectly balanced scene of Beddagana Wetland Park has been higher because of the depth of the view and the scale of the elements surrounding vegetation. The strong refuge scene of the Diyasaru Park also has been preferred more due to the scale and the environmentally friendly surrounding in the middle of the wetland.

The results from the Mann Whitney U test confirmed that both the psychophysical paradigm (normal users) as well as the experts has been similar thus proving that there is no difference with the preference with the educational level or the appreciation abilities of the aesthetics. Therefore, the above graph shows an averaged value of both user groups for each location. The Spearman's correlational analysis with the three different dimensions and the total preference score depicted that the behavioral dimension affected mostly in the case of Beddagana Wetland Park and the cognitive dimension has been affected in the Diyasaru Park. Apart from that the scores for the other two dimensions have also been significant according the correlation analysis proving that all the dimensions have contributed significantly to the final result of the preference.

Conclusion

The final conclusion from the above results has proved that there are no differences in the preferences of the experts with a designing ability with related to the landscape designing and the normal users. The highest preference from both the user groups has been towards the perfectly balanced prospect refuge scene. Which suggests that the users of both the user groups prefer to observe the open view of the surrounding while standing at an enclosed observing point. This concludes that the ideal scene which satisfies the ability to see without being seen is mostly preferred. This proves that the humans still possess the genes of the ancestors which preferred environments which provided the ability to see without being seen. These preferences have always affected by the emotional, cognitive as well as the behavioral patterns and thoughts related. Thus, all the preferences the humans possess are derived from the primitive human preferences. Although this study is limited only to a specific sample size and for two case studies only, the same study can be further extended with the gender differentiation analysis and differentiations with the urban and non-urban dwellers, different cultural backgrounds etc. with a larger sample size with more case studies. The impact from the objective perception which claims that the preference of the people lies on the physical environment can also be studied as an extension to this study. The finding of this study which claims that still, the humans prefer spaces corresponding to the biological instincts (spaces which provide the ability to see without been seen as per this study) promotes further studies on the different biological aspects thus, considering these biological aspects when designing spaces. No matter how much

human evolves, the primitive factors are always there still hidden within the genes of the mankind so, when designing public parks in future prospect refuge scenarios can be used to design more effective public spaces which cater for different perceptions with the different dimensions emotional, cognitive and behavioral.

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