

Environmental Aesthetics

The Share of Environmental Aesthetic Indices in the Cognition of Urban Landscape

Abstract | The concept of beauty has been always an important concern for philosophers and scientists. In recent decades, landscape aesthetics as an effective approach in recognition and understanding the environment, has played an important role in landscape literatures. Therefore, recognizing different orientations in designing landscape aesthetics and indices for preferences in aesthetics have been considered necessary for studying in this field. This paper has started by proposing this question: what is the ratio of indices of environmental aesthetics in urban landscape. To answer this question, it can be proposed that, through formulating the aesthetic indices, a model to understand the beauty of the environment based on its constituent components can be achieved.

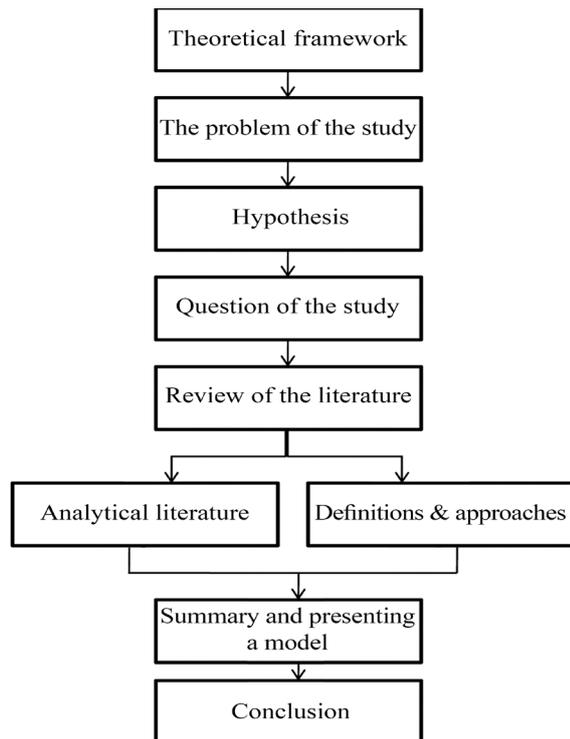
Methodology of this study is qualitative and the literature in the field of urban landscape aesthetics have been studied through library studies while aesthetic indices were achieved using logical reasoning and studying relevant resources.

Furthermore, different approaches in urban landscape aesthetics have been studied and analyzed in this paper, in order to find a meaningful relation between indices and respective approaches. In order to suggest a conceptual model, four main keywords were identified that indicate on urban landscape aesthetic, including: sensation, understanding, conception and aesthetic judgment. Finally the suggested model suggests aesthetic of urban landscape include four stages: study of objective elements in urban landscape, study of organizational factors of elements that lead to excitation potential, study of intellectual property derived from environment and study of aesthetic response of human to the environment.

Keywords | Urban landscape, Configuration of landscape, Aesthetics properties, Aesthetic cognition, Aesthetic perception.

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Pic 1: conceptual system of the study. Source: author.

Introduction | It is not possible to extend traditional methods of formation of urban spaces to the contemporary urban forms. Alexander (Alexander et al., 1977) calls this “cold landscape” of the twentieth century and believes that this is a result of lack of pattern for configuring urban environments.

It seems that the right language to organize urban environments has been demolished. Issues like the ability of imagination (Lynch, 1960), readability and routing (Bentley, 1985), mental diseases that are caused by urban life (Cupchik, 2002) are raised by this concern.

This paper, in order to achieve a comprehensive knowledge for evaluating the process of perception of beauty, has reviewed and classified the existing literature, and by concentration on human perception in psychology, has provided a context in which the process of understanding beauty by man in urban landscape can be studied.

The formulated hypothesis in this paper claims that through formulating ratios of environment aesthetics in urban landscape, we can achieve a model to understand the beauty of the environment based on urban landscape configuration.

The current study attempts to answer the following

questions:

- What are different approaches in landscape design aesthetics?
- What indices can be recognized for aesthetic preferences in urban landscape?
- What are the proportions of environmental aesthetic indices in urban landscape?

The methodology has been explained by qualitative strategy which is done through logical reasoning and reviewing aesthetic literature in urban landscape. The main purpose of this paper is to evaluate the effects of urban landscape aesthetic and elements of spatial form of the city on the human, so that we can identify aesthetic features of the artificial environment.

Moreover, criteria for aesthetic evaluation were derived from existing literature. To form a suitable method, different approaches of designing beauty in urban landscape were analyzed. Then, to find the principle of designing beauty according to human taste, literatures were focused on. With this respect, contemporary approaches in designing beauty in urban landscape will be evaluated so that its share in increasing the quality of the urban landscape will be identified (Pic. 1).

The Concept of Aesthetics

Beauty in linguistics means being attributed by competency, potency and efficiency (Mansouri, 2005)

Aesthetics is a field that considers beauty and feature of an object and understanding them in our taste. Douglas Porteous (1996) believes that the term “aesthetics” is derived from the Greek word of “Austansay” that means understanding. The term “aesthetics” for the first time was introduced by Baumgarten (1750) who is known as the father of modern aesthetics. Later, the concept of beauty, became the main subject of the philosophy and provided a tool for the nature of art and evaluating beauty (Dickie, 1997; Railton 1998; Sibley, 2001).

Blackburn (1994) believes that aesthetics is to study sensation, concepts and judgments of the human that is derived from our understanding of art. It is obvious that there is a distinction between beauty and aesthetics, beauty is a special feature of an object or a place that delivers the experience of joy and meaning while

aesthetics indicates on philosophical study of beauty and understanding it.

The term “aesthetic” has different meanings from philosophical landscape and is imagined and understood based on a wide range of conceptual classifications including form, expression, beauty, taste, sensations, and symbolism.

Approaches for Designing Aesthetics and its Features

After comprehensive review of relevant literature of aesthetics, it can be said that there are different approaches in aesthetic environmental design. Approaches that advocate expertise preferences in design against those which valorize public preferences, subjective and objective design approaches and rational and emotional approaches are the most important ones (Table 1).

Aesthetic responses to the environment are derived from recognition of aesthetic features in urban landscape and are considered based on different features of the environment including style of the construction, color, street, house style, appearance and urban landscape (Nasar, 1994; Olascoaga, 2003). Organizing landscape features like complexity, variety, novelty, astonishment, wonderment, ambiguity and consistency among elements of environmental form are called integrative variables.

Integrative variables have the potential of excitation in the environment. Excitation can affect achieving hedonist value (aesthetic satisfaction). Hedonic value is the pleasure obtained from observing the environment or a work of art (Douglas Porteous, 1996: 140). Hedonic values are the result of understanding or experiencing integrative variables that form the basis of aesthetic judgment in urban landscape.

Although importance of aesthetic properties varies from one destination to another (Kozak, 2003), these properties facilitate the final formulation of the picture of the landscape (Baloglu & McCleary, 1999). By

considering aesthetic judgment as a cognitive process (Kaplan, 1985), the aesthetic features affect on creating intellectual understanding in the observer (Echtner & Ritchie, 1991)

Bentley (Bentley et al., 1985) concluded that for having aesthetic features with high quality, it is necessary to combine all human sensations (visual, audio, touch, taste, smell and excitements) in designing city.

Totally, the aesthetic indices can be divided into three categories: psychological features, organizational features and meaningful features.

The experience of aesthetics includes interaction between environment and the observer. Beardsley (1969: 3-11) says that to earn a comprehensive and enjoyable experience, the designer of the landscape should concentrate on the form and aesthetic qualities. Special qualities relevant to an object or an environment include: complexity, integration and intensity that are relevant to the amount of enjoying from the environment.

In addition, Beardsley (1985) showed that the necessary ingredients for aesthetic experiencing are: 1) an object or a group of objects, 2) resulted sense, 3) complexity and 4) integration.

While Gjered (2010) shows a different analytical framework for environmental aesthetics. His study showed that aesthetic experience, changes according to the intensity, integration and complexity of the aesthetic elements and it can be divided in to perception, recognition and meaning. The aesthetic judgment based on immediate sense, forms through experiencing and evaluating values and meanings. The main analysis of his model showed that this model doesn't involve all indices and aesthetic features, for example, in this model; he didn't consider the intellectual recognition of the observer. Nevertheless, we use this model to improve our knowledge about cognitive process (sensing, understanding, and concept) through classification of aesthetic elements of the form of urban environment and their internal correlation.

Different approaches in designing aesthetics

A. Objective aesthetics (Physical aesthetics)	Subjective aesthetics (Psychological aesthetics)
B. Expert-based aesthetics	Public preferences
C. Rational approach	Emotional approach

Table 1: Different approaches in designing aesthetics, Source: author.

Meaning of Aesthetic Quality in Design

The aesthetic quality of designing includes comprehensible and tangible qualities that are derived from the relations between element of designing and spatial forms. Lang (2005) divides the aesthetic qualities into the two groups of formal and symbolic qualities, in order to study the nature of aesthetic design. With this regard, Nasar (1994) introduced rhythm, scale, complexity, color, form, proportion, shadow, order, hierarchy, spatial relations, congruency, ambiguity, wonderment and novelty as indices for aesthetics. Formative aesthetic is relevant for determining countable features through quantitative approaches. Bostanci and Ocağci (2011) introduced coordination, variation and transparency and indices for aesthetic quality (Table 2).

It can be concluded that to increase the aesthetic quality of the urban landscape, it is necessary to combine all formative and symbolic features in the environment. Here we review the indices for aesthetic preferences of urban landscape in the literatures.

Since the indices for understanding aesthetics are not the same in different landscapes, the suggested model should include all indices. As you can see in table 3, the indices for aesthetic preferences are outspread in literatures and they should be reorganized in an ordered fashion. The suggested model for studying aesthetics of urban environment is organized based on gathered indices and has utilized from stages of human recognition of the environment and landscape in psychology (sensing, understanding and realization).

Discussion

Lack of aesthetic quality in the shape of urban spaces has caused several problems for users, problems like psychological diseases and visual pollution, being unreadable, weak ability to conceive and routing in urban environments. The main purpose of this study is to introduce a model for analyzing the relation between

environmental form and human cognition to identify countable criteria that shows the relation between spatial form of the city and aesthetic quality. The historical analysis of the philosophy of aesthetic thinking showed that classical principles of aesthetics have always been focused on the objective part of aesthetic designing (Lothian, 1999).

Kant in eighteen century was the first person who introduced the philosophy of aesthetic thinking by introducing the meaning of taste. An important analysis of successful urban environments showed that modern urban spaces, especially spaces that are built after the age of communications, use objective and subjective indices for designing. (Moughtin, 1992; Madanipour, 1996).

The formative and symbolic excitement potential of the features of artificial and immaterial environment is the main indices for aesthetic features that lead to aesthetic judgment. Features of artificial environment or excitement potential can be evaluated according to formative and symbolic features of the spatial form of the city. Furthermore, environmental features that are not built can be evaluated through studying cultural experience, character, and intention, sociological and psychological and training elements.

Therefore, in order to propose an applicable method for testing the hypothesis of this paper, four main keywords for perception of urban landscape aesthetics were identified. Suggested keywords are organized based on human psychological recognition (sensing, understanding and concept).

The first step in cognitive process is to sense the aesthetic elements in the urban landscape. The elements of the urban landscape can be divided into two groups based on the intensity of psychological effects on human: the micro scale and macro scale elements (Frey, 2003; Waterman & Wall, 2009).

Understanding is the second step in cognitive process. At this step, human tries to conceive the organization

Table 2: The indices for aesthetic quality. Source: author, adapted from (Bostanci & Ocağci, 2011).

The quality of aesthetics				
Symbolic		Formal		
Performance	Meaning	Transparency	Coordination	Variation
Is measured through qualitative methods		Is measured through quantitative methods		

Table 3: Indices for aesthetic urban preference in literatures. Source: author.

Form, line, color, tissue Being natural, repair, openness and defined space, historical figure, order	(Reed, 2011) (Nasar, 1998)
Similarity, color, continuation, affinity, common land and orientation Transparency, form, field, affiliation, dominance, simplicity of the form, transparency of linkage point, awareness of the movement and temporal courses	(Kafka, 1935) (Boring, 1942) (Lynch, 1977)
Livable, identifiable, controllable, code making, its accessibility to chances, imagination and joy	(Jakobs & Appleyard, 1978)
Readability, puzzle, coherency and complexity Closeness, complex profiles, joint surfaces and compassing elements	(Kaplan, 1989) (Rapoport, 1990)
Symmetry, scale, contrast and coordination Relation, movement, character, personal freedom, variation	(Moughtin, 1992) (Smith, 1997)
Sensing and realization, measurement and distance, social scale and order, background and forward ground, Symmetry, color, puzzle, tissue, range, comfort and its zones	(Lawson, 2001)
Symmetry, congruence, scale and formative uniformity The shape of surrounding environment, their profiles, the color of materials in the tissue, measurement and details	(Weber, 2007) (Thomas, 2002)
Being familiar, being Acceptable, readability, distinction, comfort and safety	(Borton & Mitchell, 2006)

between elements of spatial form of the city.

Concept is the third step in cognitive process. At this stage, the concept provides a chance for observer to understand the meaning between the elements of the urban spatial form. This stage is strongly related to culture.

The last stage of cognitive process involves aesthetic

Conclusion | Understanding objective- decisive indices of urban form is the first step in recognizing the aesthetics of urban landscape. In psychology, this process is called sensing. The abstractive- objective indices for urban landscape will affect on the understanding of the observer according to physical features of the place and human taste.

These factors will help to organize and interpret sensual information. So, the abstractive- intellectual factors for recognizing urban space, evaluate the meaning of different forms of urban elements. In addition, sensing the environment becomes possible through these factors and they indicate the principles relevant to the classification of aesthetic urban elements. At this stage, the observer will respond and evaluates the quality and quality of the information that he has already received. This response will increase the observer's belief in the environment that

response and judgment about urban landscape. Cognition of urban landscape according to features of the urban form and landscape and immaterial factors of the environment (experience, character, and property, sociological, psychological and ideological intentions) leads to a response to the environment.

it is called intellectual- decisive indices in the concept of urban aesthetic.

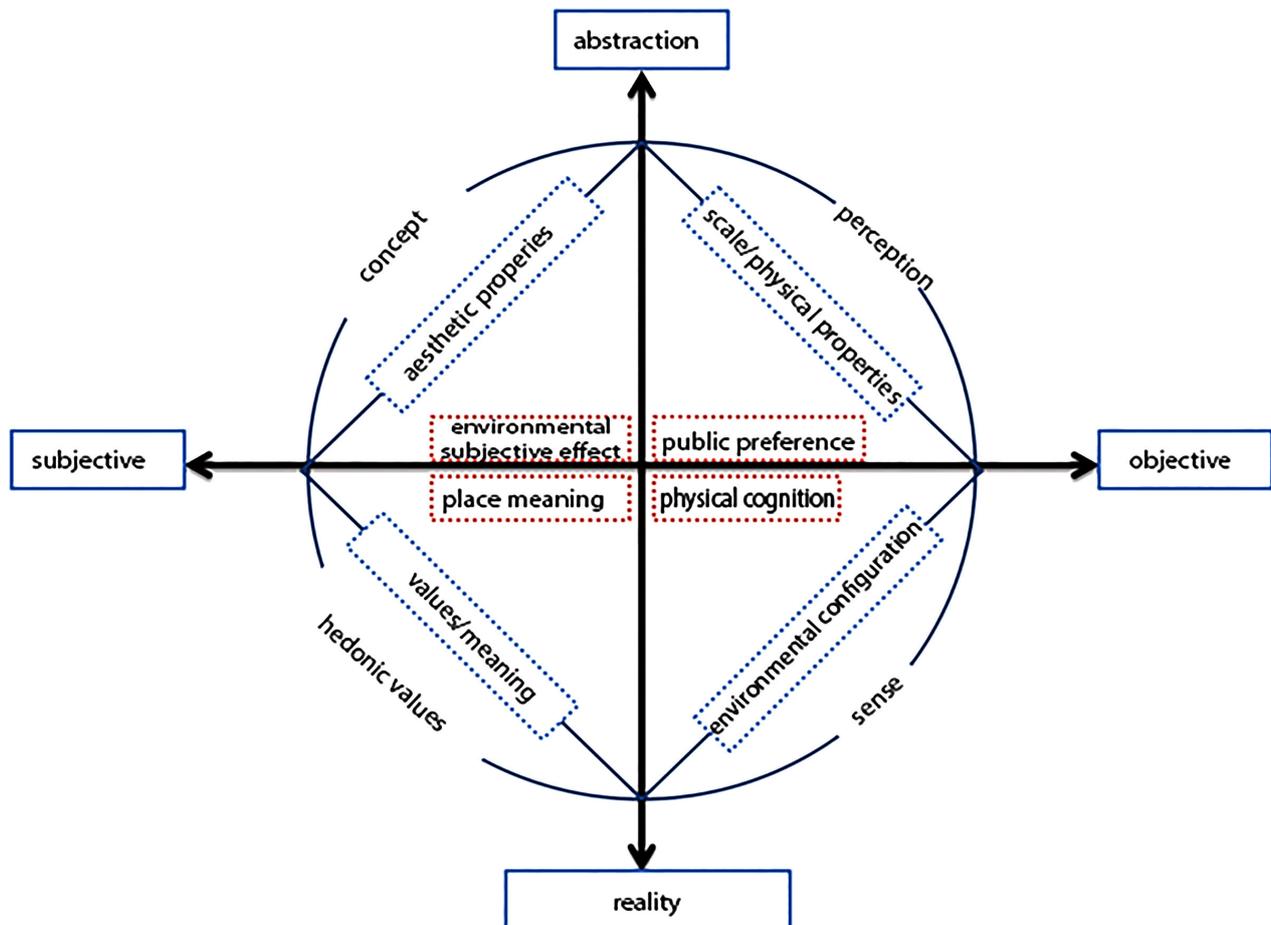
At this stage, the aesthetic features of the form of the city will result in hedonist value and the observer will be able to evaluate the environment and make responses to it according to this value (Pic. 2).

This model provides comprehensive method which considers the indices for environmental aesthetics in the cognitive process. The suggested model shows that studying the aesthetic cognition of the configuration of urban landscape involves four main stages:

1. Study of objective elements of the urban landscape
2. Study of the configuration factors of the elements that lead to excitement potential.
3. Study of the intellectual features that are derived from environmental form
4. Study of the aesthetic response of the human to the environment

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Pict 2: the framework of aesthetic cognitive process in urban landscape: A) sense: the aesthetic elements of urban space; B) perception: the configuration elements will lead to excitement potential; C) concept: the form of the city and values; D) hedonist values. Source: author.

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