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### Original Research Article

## Analysis of Theoretical Approaches to Perceiving and Matching Aesthetics Experience in Environmental Sciences

Somayeh Moosavian\*

Ph.D. in Architecture, Science and Research Branch, Islamic Azad University, Tehran, Iran.

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### Abstract

**Problem statement:** The research areas of environmental aesthetics require theoretical rules and principles to introduce a fundamental background to an empirical, cognitive, and emotional perception of infusion of aesthetics into the environment through human experience. Therefore, given the gap in the theoretical foundations regarding the nature of environmental aesthetics experience and its perception and formation process, this study aims to find a different perspective to seek and introduce new paths in order to identify the problem more accurately in other areas (which have thoroughly addressed the problem). Hence, two questions may arise. How is the process of forming and perceiving aesthetics experience in the theoretical areas of the psychology of art? In this regard, what theories are more practical in environmental aesthetics?

**Research objective:** The study aims to review the prominent models of aesthetics experience perception in the psychology of art by identifying the basic structures of the theories, can make benefits from their capabilities to lay the foundation for discussion about the theoretical concepts in environmental sciences.

**Research method:** This is a qualitative study that seeks to analytically identify different perceptual models of aesthetics experience in the psychology of art. After the prominent perceptual models were analyzed, six models were selected. Their contents were analyzed to identify the relationships between their variables. Finally, two main models were introduced presented. Based on the concepts of environmental aesthetics and the potential of the two designated models, it was recommended to converge their paths to provide a theoretical context for multiple research methods of environmental aesthetics.

**Conclusion:** Leder's theory and Silvia's theory introduce an integrated network of perceptual, cognitive, and emotional processes to compete with each other. They also propose a flexible modeling mechanism for a wide range of variables regarding the priorities of aesthetics experience. As a result, new hypotheses can be developed for environmental aesthetics.

**Keywords:** *Aesthetics, Aesthetics Experience, Environmental Sciences, Perceptual Models, Psychology of Art.*

\* +989171182191, m.moosaviyan@gmail.com

## Introduction and problem statement

The concept of aesthetics has always attracted philosophers, psychologists, and recently neurologists. Since Plato, it has been complicated to perceive the nature of aesthetics in a more general attempt at analyzing human behavior and emotions. Therefore, instead of asking “What is aesthetics?” it is better to ask “What can aesthetics be?”; because this concept has countless definitions, most of which have at least one thing in common, i.e., experience. Known as a fundamental concept in the most prominent literature on the philosophy of art, aesthetics experience often has contradictory meanings. Although aestheticians accept that aesthetics is related to emotional phenomena, the role and content of such experiences appear to be falsely interpreted even in contemporary literature. It is necessary to explain that this concept is among the most complicated categories in the philosophy of art and empirical aesthetics. On the one hand, this interpretation matches the primary and fundamental sense of aesthetics, i.e., aesthesis or sensual perception. On the other hand, it is a subjective and inherently intrinsic state. Therefore, this concept has drifted away from the narrow perspectives of interpretative and conceptual analyses in recent studies and has been developing more extensively as a subset of perceptual processes toward empirical views. In this regard, an experience includes all the subjective capabilities which place all components together. Hence, identifying perceptual processes can provide the key to the perception of the ontological status of this experience. Accordingly, aesthetics experience is defined as the interaction between a perceiver’s cognitive-emotional factors and the conceptual perception of a work’s form structures. Thus, different theoretical areas, especially cognitive psychology and neurology, are trying to develop different dimensions of this concept.

This study aims to address the overlap of research areas in environmental aesthetics by analyzing different theoretical mechanisms through content analysis. Therefore, the study first analyzes a view

of aesthetics formed in a perceiver’s processing experiences and caused by interactions between the features of a driver and its resultant processing procedures. Reviewing such perceptual processes, this study also tries to reverse theoretical standpoints and develops them in environmental sciences, for the main approaches include addressing and matching theoretical structures in environmental studies to perceive the roles of different drivers and factors in improving the desirability of an environment. In fact, the goal of analyzing these theories is to determine their positions in discourses of human experience in interaction with the environment, in which a sense of pleasure plays a major part. Hence, this study focuses on the concepts that are more practical in environmental sciences to show the future research paths. This lays the foundation for a larger number of interdisciplinary discourses to develop more concepts and cognitive orientation in environmental aesthetics experience.

Therefore, two questions arise. How is the process of forming and perceiving the aesthetics experience in the theoretical areas of the psychology of art? In this regard, what theories are more practical in environmental aesthetics?

## Research methodology

This qualitative study adopts an analytical approach to review the main models of the psychology of art in order to identify the key approaches to the concept of aesthetics experience as well as the relevant underlying mechanisms. It should be mentioned that the first model, which discussed the process of empirical perception of aesthetics experience, was developed in 2004, before which other models merely gave definitions as to what and how this concept was. Those models have already been reviewed.

After different models were analyzed, six models were finally selected. The analytical procedure addressed the early, middle, and final steps of processing as well as their outputs. The criteria for selecting the six models were based on how

the experience formation process was based on the diversity of criteria and researchers’ different attitudes. Finally, an approach was selected for research purposes to match environmental sciences better. Therefore, the processes and dialectics of relationships between the variables of these models were analyzed through content analysis. Eventually, a context was provided for multiple research methods in environmental sciences by identifying two designated models and their relevant potentials in addition to proposing discourse and convergence on the paths based on the concepts of environmental aesthetics. Regarding the descriptive nature of this study, the goal is to review and match interdisciplinary approaches in contemporary studies including the views that initiate discussions on a topic and can be employed for the conceptual development of empirical subjects in environmental aesthetics.

## Research background

Considering their epistemological foundations, different studies of environmental aesthetics include certain assumptions regarding the relationships between a perceiver and an environment. Therefore, despite different research conventions in this area, typologies were presented to identify various environmental aesthetics criteria based on common goals (Table 1).

## Theoretical foundations

### • Nature of aesthetics experience

Regarding aesthetics experience, every discussion presumes a meaning of the term “experience” as a distinct category of other types of experience. In general, there are two major concepts of experience, i.e., 1. An epistemological concept described mainly as what “a person is exposed to”; and 2. an epistemological concept that guarantees the direct

Table 1. Typology of research approaches to environmental aesthetics. Source: author.

| Theorists  | Typology of research approaches to environmental aesthetics  | Pattern models (cognitive, objective, semantic, perceptual) |
|--|--|---|
| Chalmers (1978)  | Presenting fundamental and practical research typologies: 1 quantitative methods including the admiration of aesthetics (reactions and their factors), 2. qualitative methods including aesthetics preference (identification of criteria) (Ja’fariha, 2017) | Cognitive, objective  |
| Arthur, Daniel & Boster (1977)<br>Briggs & France (1980)           | 1. Direct approach (general preferences), 2. indirect preferences (descriptive criteria)   | Cognitive, objective  |
| Balling & Falk (1982)  | 1. Objective approach, 2. Subjective approach  | Objective, perceptual                                       |
| Ribe (1982)<br>Gobster (1983)<br>Herzog (1989) Hetherington (1991) | 1. Specialty-oriented approach, 2. Public preferences approach   | Cognitive, objective  |
| Daniel & Boster (1976)   | Evaluation of preferences and public perception  |   |
| Zube, Sell & Taylor (1982)   | 1. Specialty-oriented, 2. psychosomatic, 3. cognitive, 4. empirical patterns   | Cognitive, objective, semantic, perceptual                  |
| Daniel & Vining (1983)   | Holistic approach: 1. ecological, 2. form aesthetics, 3. psychosomatic, 4. psychology, 5. phenomenology  |   |
| Hubbard (1996)   | 1. Individual approach, 2. social approach   | Cognitive, perceptual                                       |
| Lothian (1999)<br>Daniel (2001)                                    | 1. Objective approach: evaluation of experts, 2. subjective approach: public evaluation  | Objective, semantic, perceptual                             |
| Bourassa (1990)  | Development of the connective theory through, 1. biological approach, 2. cultural approach, 3. individual approach   | Cognitive, perceptual, objective                            |
| Porteuos (2013)  | Four areas: 1. humanists, 2. empiricists, 3. pragmatists, 4. planners, introduced through accuracy and connection  |   |
| Dakin (2003)   | 1. Professional, 2. empirical, 3. experimental approaches  | Cognitive, perceptual                                       |
| Radovic (2004)   | Cultural approach  | Cognitive   |
| Chen, Adimo & Bao (2009)   | 1. Direct evaluation, 2. Comparative evaluation  | Cognitive, objective  |

and non-inferential cognition (Levinson, 2011). Accordingly, Guter believes that the idea of aesthetics experience was used theoretically in different eras for the following purposes: 1. To describe “epistemology” of the aesthetics realm by interpreting aesthetics experience as an inherently pleasurable state that is simultaneously centralized, thought-provoking, interesting, and intriguing but different from daily experiences as a result; 2. To explain the value of aesthetics through its “pragmatic” interpretation as the intensity of aesthetics experience; 3. To support “cognitivism” of aesthetics by interpreting the aesthetics experience as a transformational step in which an extraordinary cognition of the experienced matter is obtained or as a non-inferential method of identifying the objects that have lower metaphysical effects; 4. To “give identity” and grant personality

to works of art in the position of the source and base of the aesthetics experience to promote the inherent definition of art (Guter, 2010). Overall, descriptions of the philosophical concept of aesthetics experience and its constituent qualities bring about such different claims, from which it is difficult to select a prominent feature or common aspect. Hence, the diversities presented in Table 2 were taken into account to analyze the prominent ideas (aimed at determining the common features of this experience among all different manifestations). According to the analysis of theories of philosophical systems, such an experience has no certain and single attribute at all, although most theories emphasize a series of attributes that are very similar in some aspects. These concepts include passivity, isolation, mental distance, disinterest (unwillingness), and constant concentration of

Table 2. Concept of aesthetics experience from the perspectives of philosophers. Source: author.

| Scholars                                | Components of aesthetics experience  | Approach                    |
|---|--|-----------------------------|
| Aristotle, Thomas Aquinas, Schopenhauer | Theory of reflection (intrinsic observation) and passivity accurate and in-depth reflection; 2. disregarding everything, except for an object of interest; 3. the living presence of what is perceived; 4. losing the will; 5. effective nature of experience; 6. pleasure and the necessary cognition (Collinson, 2009, 53)   | Cognitive                   |
| Kant                                    | Disinterest (unintentionality): keeping away from the practical aspects and usefulness of an object for a reflective involvement with its inherent existence (ibid., 71)   | Epistemological             |
| Bullough                                | Mental distance: the distance between an individual and their feelings to obtain aesthetics experience (consciously or unconsciously) (ibid., 134)   | Phenomenological            |
| Clive Bell                              | Meaningful form: certain qualities or specific features of an object that are the necessary features of aesthetics experience (ibid., 98)  | Epistemological             |
| Dewey                                   | Retrieving the link between aesthetics experience and ordinary processes of daily life: 1. unity and coherence; 2. qualitative self-awareness; 3. feeling; 4. expressive (feeling); 5. imagination; 6. visualization (perception of fundamental and physiological conditions) (Dewey, 2012)  | Pragmatism                  |
| Dufrenne                                | Presence through the persecution of pre-reflection in body and sensual perceptions; 2. representation of imagination through objective perception; 3. sympathetic reflection and feeling (i.e. feeling is the point of unity for subject and object in aesthetics experience) (Dufrenne, 2017)   | Phenomenological perception |
| Beardsley                               | Topic orientation: “a certainly accepted direction for the sequence of a person’s mental states through objectively visual features” (Levinson, 2011, 70) or object-orientation according to Collinson (2009, 154); 2. tangible freedom (free of previous and future concerns); 3. impartial effects (i.e., a feeling that exists emotionally in subjects of interest in a not so far distance); 4. active exploration: activating brain forces; 5. integrity or comprehensiveness: a feeling of unity and necessary satisfaction (Levinson, 2011, 70) | Epistemological             |
| Scruton                                 | Imaginative perception (Scruton, 1989)   | Epistemological             |
| Leath                                   | Intensity of (unconscious) concentration (Leath, 1996)   | Epistemological             |
| Schusterman                             | Value dimension; 2. phenomenological dimension concentrating on the immediate presence of emotional pleasure and attraction and differing from daily experience; 3. semantic dimension; 4. boundary determination dimension that is art-specific (Levinson, 2011, 82)  | Phenomenological            |
| Carroll                                 | Content-oriented narration based on the aesthetic attributes of an object such as unity, diversity, and intensity; 2. effect-oriented narration based on sympathetic attention and thoughtful reflection of such topics as reliance on addressee feelings, attention to objectivism, sense of freedom, active exploration, disinterest, and sense of integrity (Carroll, 1999, 314)  | Epistemological             |

attention. Although these concepts have different levels of importance within the range of theoretical systems to which they belong, they share some commonalities. In general, the evaluation of these theories indicates that an aesthetic experience is a kind of immediate mental state affected by something beautiful through an unintentional and non-cognitive approach experienced in the face of beauty. Therefore, it has no provable and objective form and is mainly an epistemological reportage of an experience, and everybody can have a claim regarding its occurrence or lack of experience subjectively.

Hence, the conceptual analyses presented by Schusterman (1997) and Bergeron and Lopes (2012) can be taken into account. They introduced three main aspects that would give an aesthetic quality to every experience: 1. The aesthetics experience has a specific dimension in the state which includes evaluation of the matter; 2. It has an epistemological or emotional dimension which is subjectively perceived and can also draw human attention; 3. It has a semantic dimension, i.e., this experience is considered a conceptual experience that is not a stagnant feeling. They also stated that there would be no reason to believe that all three dimensions should be required in every case of aesthetics experience. A few aesthetics experiences might depend on perceptual qualities, although others are related to significant or stimulant aspects (Leder & Nadal, 2014, 445). Thus, it can be claimed that no single interpretation of aesthetics experience is able to give certain features that could be the base of what it is. Given the complexity of the concept, it would be futile to determine fundamental conditions unless the correct perception is resorted to because it is a major step in the method of thinking about the structure and process of this experience, including its different perceptual/ cognitive aspects.

#### • Perceptual structure of aesthetics experience

The recent decade has witnessed the revival of empirical and psychological approaches,

especially the development of cognitive models in the experience of processing aesthetics. These approaches understand the aesthetics perception as a multidimensional framework and by emphasizing perceptual processes, consider complicated methodologies. Hence, it is necessary to highlight the contexts in which main models emerge before they are introduced.

The convention of empirical studies of aesthetics started first with the works of research conducted by Fechner<sup>1</sup> (1801-1889) and concentrating the effects of stimulant features on preference reactions. After that, Berlyne (1971-1974) validated many of Fechner's principles empirically. Using Fechner's distinction between intellectual aesthetics and empirical aesthetics, Berlyne prioritized the empirical aesthetic method over correlation approaches. Berlyne did not propose a general theory but developed an exploratory framework to perceive motivational processes which would confirm inquisitive responses and exploratory behavior and relate to aesthetic phenomena. In Berlyne's approach, stimulation potential or the degree of increased stimulation by a stimulant was considered an essential concept.<sup>2</sup> Berlyne believed that stimulation potential would result from three types of variables: 1. Psychosomatic features (e.g., brightness, sound intensity, and qualitative differences of colors); 2. Ecological features (i.e., meaning or amount of a stimulant signal resulting from biological useful or harmful conditions); and 3. Collective features (e.g. novelty, complexity, uncertainty, conflict, or surprise caused by comparing different segments of a stimulant or between one stimulant and previous expectations) (Seeley, 2014, 1).

Berlyne's aesthetics (1974) was based on experimental studies controlled through advanced methods of behavioral sciences regarding the theory of inquisition and exploration. This theory consists of two aspects: 1. A group of stimulant features known as general variables; and 2. Motivation regarded as a reward and preference mechanism.

General variable consist of stimulant factors such

as complexity, novelty, uncertainty, and conflict. According to Berlyne, these apparently different features have two key similarities. First, each of them includes a comparison of different types of information, such as input information with the expected information (novelty or uncertainty) as well as different information elements regarding the stimulation (conflict or complexity). The term “collective” shows that information should be collected from several sources to decide on the complexity and novelty of a model. Second, every collective variable has motivational potentials and can affect the intensity of motivation; therefore, stimulants of complexity, novelty, uncertainty and conflict can increase stimulation (cited in Silvia, 2005, 343). Arnheim (1985) criticized the Berlyne’s aesthetics and some other philosophers who did not approve of the boundaries of Berlyne’s theoretical framework, approach, and methodology (cited in Cupchik, 1986). Moreover, although Berlyne’s collective model is still dominant, it is not the only prominent theory of emotional responses.

Developed by Martindale and Moore, the “prototype preference” model is considered the right alternative to Berlyne’s theory. Martindale said that two stimulants of equal stimulation potential should be preferred equally. For instance, humans like the white noise and sound with a specific intensity that stimulates an equal level of arousal. Thus, what distinguishes aesthetic objects from normal objects? Martindale found a potential solution showing that the meaning or identity of a better stimulation could justify aesthetics priorities over general variable. Martindale proposed this theory as a cognitive alternative to Berlyne’s view. Therefore, pleasure is an objective index of features that would match the main distinction of a category. In other words, people prefer a group of aesthetic objects that are specific to their category of interest (such as a familiar style) (Martindale & Moore, 1988).

According to Silvia’s critical perspective (2005), the contradiction between Berlyne’s stimulation model and the prototype preference model is

apparently unimportant, for the motivation model is not executable anymore. In addition, the prototype model has many common limitations. Like motivation, prominence also affects emotional responses (e.g., preferences but not specific emotions). In other words, this theory is unlikely to succeed in making predictions regarding positive emotions, i.e. pleasure or interest. Presumably, the fact that prominence causes a positive emotional response indicates what negative emotional response results from lower prominence (Silvia, 2005, 352). Taking a critical look at Berlyne’s inverse U curve, Silvia also stated that an evaluation approach would implicitly indicate that the effects of events would not be based on the emotions caused by objective features of events but caused by the subjective interpretations of events. As a result, the analysis of the general rule of stimulant intensity and emotional response, which is independent of a stimulant’s subjective meaning, appears to be confusing. Second, the inverse U curve refers to the relationship between the public stimulant’s intensity and its public effect. From an evaluative standpoint, stimulants are important because they provide the specific interpretation of significance; therefore, it is not important to integrate separate evaluations (e.g., novelty and confrontation potential). It is also apparently improbable that emotion is public but distinguished between specific emotions (ibid., 353). Therefore, the prototype preference theory is not the only cognitive alternative to Berlyne’s approach. In fact, the processing dominance theory identifies the pleasure of a stimulant through the simplicity or dominance of processing. Dominance is related to familiarity, form (symmetry or high contradiction), or categorical processing of a stimulant. Accordingly, cognitive processes have the pleasurable feature, and pleasure is the index for measuring uniform interactions with an artwork (principles of repetition and boredom) (Seeley, 2014, 2).

As discussed earlier, the most important point now includes modeling attempts based on the abovementioned theories. Since 2004, a new

emphasis on such modeling techniques has turned into the center of theoretical identification of aesthetics experience for the first time ever. Most of such models explain the center of the new empirical research hypotheses as a link between psychological and neurological theories. These models are often developed by different researchers; therefore, they emphasize relatively different problems or benefit from different visual styles. Hence, these models have recently helped develop hierarchical theories and model aesthetics information processing on a multistep process within a process-oriented framework. In other words, every process begins with a stimulant input and ends with final decision-making after several processing steps by creating a deeper relationship, which is the evaluator's judgment.<sup>3</sup>

### Perceptual models of aesthetics experience

As mentioned earlier, different theoretical approaches are considered to be the base for today's modeling.<sup>4</sup> They also introduce a research trend that varies from emphasis on separate and often visual elements to emphasis on the interactions between a more complicated series of different factors (which can cause feelings or physiological reactions). Currently, these perceptual models have often turned into key theories of aesthetics that determine the boundaries of empirical studies. Therefore, six main models are introduced and analyzed to show the generalities of contemporary approaches to aesthetics experience. This analytical process addresses the early, middle, and final steps of processing as well as their psychological outputs or outcomes. For research purposes, an approach is finally selected to have the highest adaptability in environmental sciences. Furthermore, these six models are not the only important models. They were selected because they present clear psychological explanations on the underlying processes of aesthetics experience. They are also more practical than other models now (Table 3).

The studied models often consist of three main

components, the first one of which includes the inputs that create an experience. These inputs might include a visitor's personal characteristics, socioeconomic status, and emotional state, as well as the physical features of an artwork and its history. This early step highlights attention and early, spontaneous, and bottom-top (emotional) processing. The second component includes the processing mechanisms, which operate on inputs in specific steps. This middle step shows specific processes that include object recognition, classification, and referral to memory. The third component contains mental and behavioral outputs resulting from process. Although most of the models are formed in the second step of actual processing, the final step highlights more prominent cognitive components such as thinking and association. These six cognitive models consist of certain elements which are noticed to create aesthetics experience.

These elements are 1. The feedback relationship between perceptual, cognitive, and emotional processes; 2. The role of sensual mechanisms in processing aesthetics information; and 3. Difference between the early (perceptual) steps focusing on the physical features of an object and the final (cognitive) step that evaluates the semantic aspects of an artwork. Given the attributes of these six models, the features of the two models (Leder and Silvia) are more comprehensive; therefore, they are considered complementary models in environmental sciences. In fact, Chatterjee's model and Locher's model are based on the visual processing of an artwork, whereas Cupchik's model has a pragmatic/ cognitive approach, and Pelowski's model has a sympathetic/ cognitive perception of aesthetics experience.

### Analysis of findings

Emphasizing the fundamental cognitive mechanisms, the model proposed by Leder et al. (2004) highlights the importance of top-down effects in aesthetics experiences. This model considers aesthetics experience a cognitive process along with the

Table 3. Perceptual models of aesthetics experience. Source: author.

| Theorist                                | A perceptual model of aesthetics                         | Structure of theory   |
|---|--|---|
| Chatterjee (2004)                       | Neurocognitive model                                     | In this model, visual interaction with artwork has many components, and experience emerges from a series of different reactions to these elements. The main theories emphasized by this model were adopted from studies of the watching process. According to this model, the visual aesthetics perception includes a complicated hierarchy of processes, including perceptual and cognitive processes playing a key role in processing every visual object and activating emotional processes (pleasure or satisfaction with beauty); the ultimate experience of beauty caused by the interactions between the stimulant’s features (complexity, novelty, asymmetry, balance lines, proportion, and equilibrium) and a perceiver’s emotional and cognitive processes (personality, specialty, cultural background, etc.).  |
| Leder, Belke, Oeberst & Augustin (2004) | Model of aesthetic judgments and admiration              | This model shows that aesthetics experience includes several information processing steps. It focuses mostly on the adaptability of perception to different factors existing in the appearance of an artwork. Nevertheless, it mixes sensual information with “conceptual and abstract” meanings in addition to sensual-physical reactions.   |
| Cupchik & Gignac (2007)                 | Separation/ aesthetics and pragmatic approaches to art   | This approach mixes “daily pragmatism” and “aesthetics” with the state which a visitor selects to determine the final results. The pragmatist state includes a mainly cognitive schema-based evaluation in which an individual assesses meaning and importance. At the same time, the aesthetics state consists of qualitative features of texture, memory, and sensual-physical state of an individual in relation to the “style and symbolic information” of an artwork. This state includes a “more comprehensive” or more reactional evaluation in which “the specific secrets of interpretation of the artwork are entangled with an individual’s emotional reactions and dimensions of pleasure and stimulation”.   |
| Silvia (2005)                           | Model of evaluation and feelings of art                  | Emphasizing the role of subjective evaluations, Silvia discusses that the wide range of ordinary feelings can be a part of aesthetics experience. Evaluations constitute the key to a mechanism that is the base for the extraction of different feelings in response to aesthetics topics. Based on the “evaluation theory,” Silvia links the reactions to the personal relationship between a visitor and an artwork. According to Silvia, every feeling includes a different structure of evaluation or a series of evaluations that would form the expected reaction. Evaluations are inherently subjective, and the main hypothesis is that evaluations (not the art object) are considered the cause of artistic experiences. Criticizing Berlyne’s theory+(1974), Silvia believes that motivational outcomes are considered either valuable or valueless in the motivation model. As a result, only positive and negative states are considered subjective reactions. On the contrary, evaluation theories focus on a wide range of emotions such as happiness, interest, surprise, sadness, and hatred (Silvia, 2005, 346). |
| Locher, Overbeeke & Wensveen (2010)     | Visual processing model                                  | The relationships between eye movements and resultant patterns of cursory looks while processing an artwork have been described as visual (individual action) based on three factors: 1. Visitor-related texture: an individual’s personality and intrinsic processes; 2. Artwork-related texture: the physical aspect of art; 3. Interaction atmosphere: the physical confrontation between a visitor and an artwork.  |
| Pelowski & Akiba (2011)                 | Reactions of difference and diversity in the face of art | The model of “perception of art through a visitor’s emotional/ sympathetic alignment with an artwork or an artist” or “cognitive evaluation of information from an artwork” were matched through the adaptability of personal schema with the desired object.   |

continuous improvement of emotional states that result in aesthetics emotion. Therefore, all steps of cognitive processing are accompanied by feelings, and successful processing leads to positive emotional states (pleasure or satisfaction).

Leder’s model (box-model) proposes five consecutive steps after the early step of pre-classification (of an artwork body). The five steps

are described as follow: 1. Perceptual analysis, which primarily analyzes the visual features of an object (including complexity, symmetry, contrast, classification, sequence, color, etc.); 2. Classification of implicit memory, in which an artwork is processed by benefiting from a visitor’s experiences, skills, and specific schemas (familiarity, being a prototype, and effects of changes); 3. Explicit classification, in

which an individual matches visual or conceptual factors such as implications or style of the artwork (processing the style and content affected by an individual's knowledge and specialty); 4. Cognitive dominance, in which an individual discovers the meaning by interpreting and communicating with the existing knowledge; and 5. Evaluation (measuring the dominating process) in which the processing results are put together and maximized in aesthetics judgment and probably aesthetics feelings. This model distinguishes between explicit and implicit processing frameworks, and the first two steps (or probably the first three steps) occur unconsciously or slightly consciously. In the next steps, there is the self-awareness or self-referral processing component in which a visitor evaluates their emotional state and uses the information to realize the satisfaction state. A very important point in this model is the feedback loop between cognitive dominance and evaluation. The results of cognitive dominance are constantly evaluated to determine how much the artwork has been perceived successfully. In this step, evaluation starts another process by measuring the success of aesthetics processing. In the end, this process results in two parallel outputs: aesthetics judgment and aesthetics emotion (such as pleasure) (*ibid.*).

The steps of cognitive dominance processing and evaluation are closely related because they create a feedback loop. The results of the cognitive dominance step are constantly evaluated in relation to its success to show a satisfactory perception and expected changes at a level of ambiguity (i.e., the cognitive measure which processes most of the stimulants). Therefore, the evaluation step directs the aesthetics processing through its successful evaluation. In addition, a backward loop is employed to start processing more information. When the subjective evaluation does not succeed, information processing can be driven toward previous steps. This model highlights different inputs, and the steps of integrating implicit and explicit memory are affected by an individual's previous experiences. Previous experiences or skills affect a person's evaluation of

the prominence and smoothness of an artwork in the second step of the model. This will in turn affect the individual's feelings and positive/negative evaluations. This step includes explicit classification, light processing, and themes of an artwork based on a visitor's personal characteristics such as knowledge, preference, and cognition. Leder et al. named the entire process "aesthetics experience" (Fig. 1).

Following Leder's model, Silvia evaluated interest, emotions of discovery, intrinsic motivation, and inquisition. Moreover, the theories of emotional evaluation are mainly based on the evaluation of events but not merely the events themselves. In fact, they are caused by emotional experience. This theory strongly proves the evaluation theories within the framework of contextual and subjective approaches to perceive emotions and feelings. Therefore, events result in no feelings and emotions. In fact, emotions are caused by the subjective evaluation of events. In this theory, aesthetics experience includes something more than mere preferences and covers a variety of emotional reactions, including a period of aesthetics as much as wonder and excellence and another diversity of emotions often based on knowledge.

The basic assumption of Silvia's emotional evaluation is that emotions are caused by the subjective evaluations of events. This structure consists of two main components, the first of which is the control of novelty that refers to a series of variables that result in processing confusion. In other words, evaluating an object as novel, unfamiliar, uncertain, complicated, contradictory, and mysterious shows this kind of evaluation. In this case, it is similar to Berlyne's theory of general variable (1960). The second evaluation is to control the confrontation potential, which refers to the ability to understand a novel, unfamiliar, and complicated object, which is identified by the early evaluation. Unlike the control of novelty, the control of confrontation potential has no equivalent in Berlyne's theory. This evaluation is subjective and metacognitive, for it highlights the judgments of perception, knowledge, and significance (Silvia, 2005, 347).

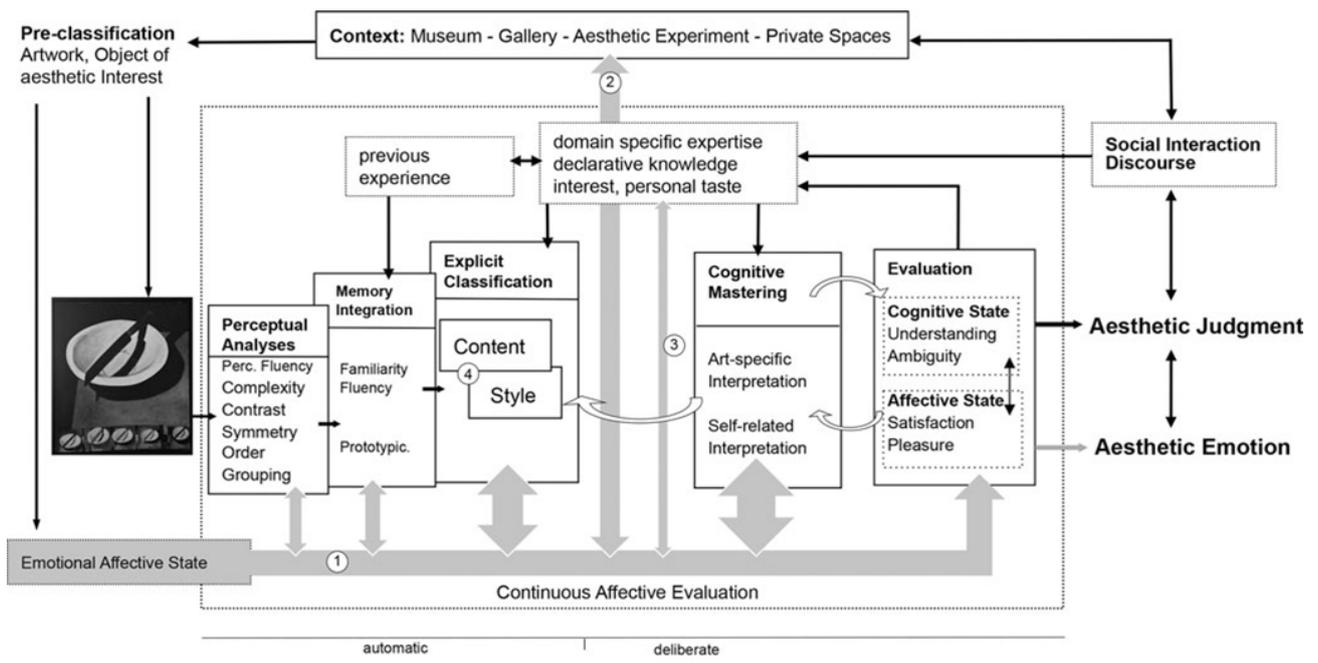


Fig. 1. Model of aesthetics experience. Source: author based on Leder & Nadal, 2014.

Silvia uses the term “motivation potential” as a series of a stimulant’s features having some common effects. Nevertheless, this term is defined as a stimulant’s features, i.e., the reports of variable effects that can lead to motivation potential can also be independent of every theory pertaining to the role of stimulation. As a result, considering stimulation as a moderating mechanism can improve theories of motivation and emotion in aesthetics experience, which means motivation potential through subjectivity in theories of evaluation (*ibid.*, 352) (Fig 2).

### Discussion

The novel attitudes to environmental aesthetics are first taken into account to analyze how much they match designated perceptual models. Recently, Berleant has introduced a new paradigm in environmental aesthetics with two motivations: the first of which is to put away contradictory concepts of objectivity/ subjectivity, whereas the second is to reduce the distance between a perceiver and the evidence so that the evidence can be completely

perceived in a multisensory manner. Berleant used the term “interactive aesthetics” which emphasizes the importance of immediate sensory relationships between humans and phenomena as well as the comprehensive and contextual features of aesthetics perception. This interaction includes active participation in perceptual processes such as physical activities or creative perceptual interaction in the environment. The aesthetics interaction attributes beauty to its etymological origin with an emphasis on the early feelings of perception of a sensory experience. Perception is simply reconfigured to detect the mutual activities of all feelings, including motor senses. Therefore, continuous actions turn into the dimensions of the aesthetics process, and the perceptual experience is perceived actively and directly. This theory states that the aesthetic value is a prominent feature in the mutual and two-sided process of perceptual participation between a perceiver and the environment. According to Berleant’s theory although the necessary condition for aesthetics experience is to perceive the environment through senses, the perception only

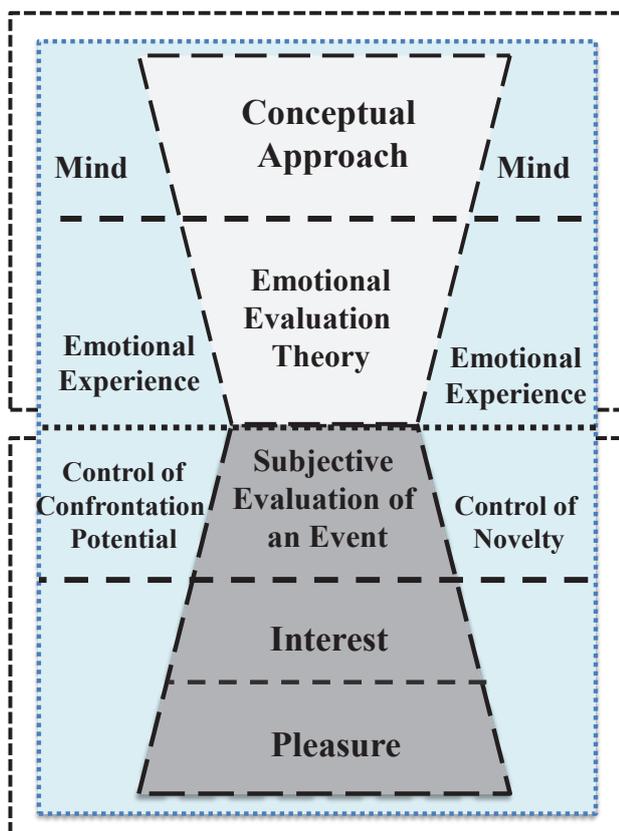


Fig. 2. Emotional evaluation model. Source: author based on Silvia, 2005.

cannot improve the cognition of aesthetics. but also, it is the perceptual realm that intensifies awareness of aesthetics (Berleant, 2013). Moreover, according to the Gestalt theory, perception is a sensory tool in an active and exploratory manager to interpret the qualities of the environment (Bell, 2013, 72-75). Saito emphasizes the importance of numerous relationships in the informed perceptual experience. According to Saito, aesthetics experiences are often interpreted as the positive results of a successful achievement caused by an object and the mutual effect of humans (Saito, 2008, 461). Saito introduced a special quality formed by the interference of sensory elements with social aspects. This quality is considered an experience of a sense of location and a strong dimension of aesthetics which would require a level of awareness. Therefore, awareness and social dimensions can improve aesthetics from early sensory perception (early judgments) to a

meaningful experience (Bell, 2013). Other theorists have also addressed the important concept of “sensory stimulation” and the “pervasive” aspect of aesthetics experience (Gaut & Lopes, 2013).

Therefore, assuming that the entire environment is a perceptual system, the singularity of the human and the environment can be perceived as a constant manifestation of the concept of “aesthetics experience” through interaction. This concept considers the necessity of awareness of the relationship between methods of sensory performance in the perception of an environment and its action-reaction method through cognitive/ emotional processes in the perception of aesthetics.

Accordingly, Leder’s model proposes a dynamic and close confrontation between the methods of processing emotions and cognition. These two aspects are related to the sensitivity of processing a person’s experience in confrontation with the environment. Therefore, a person’s aesthetics feeling is always accompanied by their evaluation process. It can also affect processing aesthetics information through feedback mechanisms. Since the environment is filled with interconnected sensory and cognitive feedback, which can affect the process of perceiving environmental desirability, this model can be used in environmental sciences.

Leder’s model indicates the two outputs are relatively independent<sup>5</sup> and that it is not necessary to consider their relationship positive. Hence, the model is enriched by allowing for the relative independence between judgments and aesthetics feelings. As a result, the output emotion is caused by the sensory effects and cognitive evaluations, especially in the evaluation step. The independence of Leder’s two outputs can also be used to test the theories of environmental aesthetics processes by measuring different dependent variables. For instance, when beauty is measured, more cognitive aspects of aesthetics judgment are probably considered, whereas pleasure and joy might reflect most of the aesthetics emotions. Therefore, aesthetics judgments result from measurements of the evaluation block in this model.

These evaluations are also based on the success and evaluation of the cognitive dominance step.

In Leder's model, all steps lead to a state that is constantly being updated, which results in a more comprehensive knowledge of how a person makes judgments. In addition, different factors such as feelings, personal experience, and visual aspects are integrated with these steps. This could also affect the final results to some extent. As a result, this model can be employed to evaluate the general procedure for processing the environment from top to bottom (cognitively) based on its mechanisms and for experience-based measurements for different trends in various personal reactions. Hence, this model proposes a mechanism for improving the cognitive dominance of environmental aesthetics, which results in a pleasurable experience for the individual. Therefore, an output of this model is that it would be possible to consider the aesthetics interest the product of calculation requests for different processes or the product of sensory inputs. The second output is that the model can justify the difference between an expert and a user. Thus, a visitor's aesthetics evaluations indicate sensitivity to formative, semantic, and expressive features of an artwork, the main factor of which is content.

Overall, Leder's model has three main concepts: First, unlike other studies, this model does not concentrate on single factors similar to the components of stimulation (Berlyne) or prototype (Martindale); Second, the model emphasizes that the key to understanding the value of aesthetics lies in the interactions between the process of cognition and feeling. In other words, they moderate or impose each other; Third, it shows the high diversity of aesthetics experiences as well as the methods in which artwork or an environment can be admired with the various pieces of information that can be combined and related for use. Hence, the model leads to two output propositions stating that the aesthetics experience results from perceptual, cognitive, and emotional processes and that such experiences are owed to many methods in which

components can interact with changes in relation to their roles in every specific experience; therefore, this diversity was reflected in dual outputs.

Completing Leder's model, Silvia's theory can explain a person's more sensory/emotional evaluations in interaction with subjective evaluations and cognitive components. As a result, it leads to the interest and pleasure caused by certain elements such as novelty and control of potential. Therefore, it can be stated that the potential stimulation dimension, i.e., motivation and emotion, can affect the aesthetics experience and show an evaluation process. It can also affect the expectation of pleasant interactions with the environment and facilitate perception of meaningfulness through subjective evaluation. Hence, these two models complete each other. In addition, entering Silvia's theoretical foundations in Leder's aesthetics feeling outputs can allow for the discussion of aesthetics feelings, the formation process of which can be analyzed more accurately in the studies of environmental aesthetics experience. According to Leder's model, if aesthetics is experienced, cognition is considered a part of the main dimensions of perception. If cognition (awareness) is related to the perception of structure and emotional reaction of the environment in identifying its relations, the concurrent and coordinated interactions of all subjective capabilities are experienced in relation to other dimensions. Furthermore, according to Silvia's theory, the subjective evaluation that is caused by interactions with the cognitive components of artwork can initiate the aesthetics experience. Moreover, the positive subjective response (feeling) becomes an informed/uninformed dimension of that experience. Thus, regarding what environmental aesthetics is, it can be concluded that these two models can be employed in environmental sciences, for the aesthetics experience is known as a multidimensional concept consisting of different cognitive/sensory components perceived through empirical processes of the atmosphere.

As discussed earlier, the following components

are the main constituents of this experience and are activated through emotional responses in the environment. If they are emotionally processed positively, they form the aesthetic valuation of the environment. These components are as follows: the cognitive component which refers to the contextual perception and environmental content; the motivational component that consists of sensory states or practical desires of readiness for behavior in the environment; the sensory component that is also known as emotional experience, reflecting positive or negative experiences in terms of effects; the sensory-motor component that consists of physiological responses of humans to the environment; and the interactive dimension reflecting the capabilities resulting from an environmental experience including the involvement of body schemas with the five senses (e.g., direction, gravity, balance, motion, scale, etc.).

Therefore, this experience is a kind of pervasive experience or a perceptual, multifaceted process in interaction with the environment by including three main attributes:

#### **- Stimulation and environmental attention**

This attribute is related to the motivational or attitudinal aspect of aesthetics. In aesthetics experience, a person's multiple senses are greatly involved. In this experience, the person focuses on a specific environment and is attracted to it. The person loses his self-awareness and awareness of the surrounding environment and fails to perceive the time. In fact, the role of stimulation and attention gains importance through attraction in the activation of cognitive processes and expansion of the short-term memory working space for processing aesthetics information. The intensified stimulation and attention provides extra energy, which is necessary for the effective evaluation of content in the "symbolic" aesthetics. Hence, the aesthetics experience is closer to the stimulation (attraction) than the other dimensions of subjective experience, such as positive pleasure. An environment that provides a pleasant aesthetics

experience should also be arousing. Therefore, "attraction" plays an important role in creating this experience, and evaluation of attraction opens up the mental atmosphere for aesthetic evaluation and attraction. Thus, the aesthetics experience is the closest experience to the stimulation component; in other words, the higher the motivation potential, the more attractive the aesthetics. The aesthetics attraction is the main component of the aesthetics experience structure. It is also based on the same process. In this case, attention and alertness (high concentration) are more extensive (in a vast area of attention and subjective activities) and more durable (by maintaining alertness). They also continue temporally and usually have variable effective features.

#### **- Cognitive evaluation**

This attribute is related to the semantic, symbolic, and imaginary aspects of the aesthetics experience. The individual evaluates the desirability of the environment as a part of the symbolic reality or semantic value and goes beyond their everyday environmental meanings. Evaluating the meaning of an environment and a series of relevant emotions such as surprise, wonder, and excitement can cause the aesthetics experience. Nevertheless, the aesthetics experience does not emerge by itself. In fact, it is the contextual result of ecology that defines the specific relationship between an individual and an environment. Hence, aesthetics feelings such as admiration, joy, euphoria, and wonder are induced through the cognitive evaluation of an artwork, which is basically pleasurable.

#### **- Sense of unity with the environment**

In an environment that has aesthetics attraction, this attribute is the emotional aesthetics experience that refers to a specific emotional experience. Therefore, the goal of aesthetics experience can be stated as an interesting combination and eager willingness depending on the aesthetics experience and the inherently releasing willingness depending on the mental states and similar phenomena. Therefore, it includes a feeling of aesthetics, a feeling of integrity,

and an exceptional relationship with environmental desirability (Fig. 3).

**Conclusion**

In parallel with each other, Leder’s and Silvia’s theories propose an integrated network of perceptual, cognitive, and emotional processes. Therefore, these two complementary theories can be considered to state that cognition is regarded as a part of the main dimensions of perception in the aesthetics experience. If the awareness of perception of formative structure and emotional reactions play key roles in identifying those relationships, the coordinated interactions of all these subjective capabilities are perceived in adaptability to their objective dimension through interactions with other dimensions. Hence, the human’s subjective evaluation of interactions with perceptual/ cognitive/ emotional features can start the positive subjective experience and provide the response which is required for all subjective power. Thus, this theoretical framework shows its usability in environmental aesthetics greatly.

In fact, it can be stated that the environmental

aesthetics experience should be able to solve the qualitative dimensions of the early feelings, which will, in turn, develop complicated evaluation structures. The aesthetics feelings have multiple dimensions, something which depends on the dynamic feature of evaluation. Although the feeling of pleasure, related to specific features of the environment, has different values of stimulation and arousal, the relevant emotional and cognitive states can be experienced differently and independently. In addition, motivation is another dimension that connects evaluations and affects the stimulation and extraction of aesthetics emotions. Therefore, the aesthetics response refers to the marvelous reactions of the mind to the concept of emotional evaluation resulting from the aesthetic factors of environmental stimulants.

**Endnote**

1. The history of empirical aesthetics is traced back to the time when Era of Aesthetics (1876) was published. Fechner distinguished between intellectual aesthetics (from the top), i.e., philosophical aesthetics, and empirical aesthetics (from the bottom). According to Fechner, philosophical aestheticians employed inductive methods to generalize the previous principles and definitions adopted from intuitions, judgments, and intrinsic reflections regarding personal works of art. Fechner also believed that inductive methods were simple indices of conceptual coherence and consensus between art experts, reflecting their aesthetic biases and subjective preferences. Therefore, Fechner saw the goal of empirical aesthetics as to replace inductive methods with the objective indices collected from a large sample of individuals who would respond to a large number of beautiful objects (Seeley, 2014).
2. Human prefers a medium level of stimulation (which indicates Fechner’s aesthetics intermediation principle), whereas high and low levels of stimulation are both considered inappropriate.
3. In studies of empirical aesthetics, participants were rarely asked to merely judge “beauty”. Most of the studies focused on such judgments as goodness, form, pleasantness, loveliness, and preferences. Most researchers believe that it is possible to identify the basic processes lying behind aesthetics experiences by studying such simple judgments. In addition, several research paths indicated different types of evaluative judgments act through similar processes. Therefore, it is possible to believe that judgments of preferences, loveliness, and beauty are closely related (Reber, Schwarz & Winkelman, 2004, 3).
4. The history of models as a result of scientific and systematic attempts can be traced back to at least Berlyne’s theory (1960, 1974) that revived concentration on art in empirical aesthetics by integrating cognitive views and physiological psychology. Taking a look at physiological stimulation, Berlyne introduced contradictory reward and avoidance systems that were entangled with the adaptive features of art. After that, Kreidler and Kreidler (1972) adopted an approach based on cognition and the Gestalt psychology to show that the structures and implications of artworks would consist of separate meanings that could affect addressees’ cognition and feelings. Likewise, based on the perception resulting from the Gestalt psychology, Arenheim (1966) analyzed the solutions that would lead to structural unity (balance and classification) and unique features of artworks, causing stimulation and different reactions among individuals. After that, Martindale (1988) emphasized

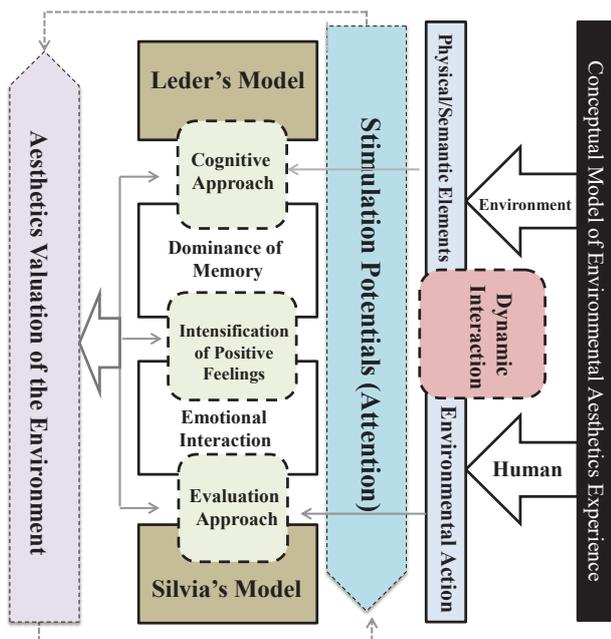


Fig. 3. Conceptual model of environmental aesthetics experience perception. Source: author.

cognition more than ever before and focused on the proportion between schemas and stimulants and considered prominence a key component and determinant of emotional reaction and positive evaluation. Then, the diversity of approaches increased more than before. Leshner et al. (1983) developed a model for the experience or in-depth insight based on cognition. Ramachandran and Hirstein (1999) were among the first researchers who tried to propose general and universal principles regarding biological/ neurological reactions and communications. Jacobsen (2006), Solso (1994), Vitz (1988), and Zeki and Nash (1999) proposed a hybrid neuro-cognitive theory (Pelowski, Markey, Luring & Leder, 2016, 3).

5. Cupchick and Laszo (1992) distinguished between a pleasure-based method of dealing with art and a cognition-based method. They claimed that inexperienced individuals would mostly resort to one emotional state of direct perception, whereas experts would be challenged with cognitive perception (Leder et al., 2004, 503).

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