

Components of aesthetic experience: aesthetic fascination, aesthetic appraisal, and aesthetic emotion

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Received 14 May 2011, in revised form 30 November 2011; published online 12 January 2012

Abstract. In this paper aesthetic experience is defined as an experience qualitatively different from everyday experience and similar to other exceptional states of mind. Three crucial characteristics of aesthetic experience are discussed: fascination with an aesthetic object (high arousal and attention), appraisal of the symbolic reality of an object (high cognitive engagement), and a strong feeling of unity with the object of aesthetic fascination and aesthetic appraisal. In a proposed model, two parallel levels of aesthetic information processing are proposed. On the first level two sub-levels of narrative are processed, story (theme) and symbolism (deeper meanings). The second level includes two sub-levels, perceptual associations (implicit meanings of object's physical features) and detection of compositional regularities. Two sub-levels are defined as crucial for aesthetic experience, appraisal of symbolism and compositional regularities. These sub-levels require some specific cognitive and personality dispositions, such as expertise, creative thinking, and openness to experience. Finally, feedback of emotional processing is included in our model: appraisals of everyday emotions are specified as a matter of narrative content (eg, empathy with characters), whereas the aesthetic emotion is defined as an affective evaluation in the process of symbolism appraisal or the detection of compositional regularities.

Keywords: aesthetic experience, fascination, appraisal, emotion, narrative, composition.

1 Introduction

Aesthetic experience is one of the most important but also one of the vaguest and most poorly specified concepts in the psychology of art and experimental aesthetics. The purpose of the present paper is to provide a more explicit definition of this phenomenon and to propose a tentative model of underlying motivational, cognitive, and emotional processes and dispositions.

Generally, aesthetic experience can be defined as a special state of mind that is qualitatively different from the everyday experience. According to Cupchik and Winston (1996), aesthetic experience is a psychological process in which the attention is focused on the object while all other objects, events, and everyday concerns are suppressed. Similarly, Ognjenović (1997) defined aesthetic experience as a special kind of subject-object relationship in which a particular object strongly engages the subject's mind, shadowing all other surrounding objects and events. In both definitions, aesthetic situations and objects of aesthetic interest are specified as fundamentally different from everyday situations and objects of everyday use. Perhaps the best example of this contrast is Picasso's famous *Bull's Head*, an artistic construction made of a bicycle seat and handlebars. Seen from the everyday (pragmatic) perspective, the handlebars and the seat are experienced as parts of a bicycle with specific functions (for seating and governing). Also, as with all other objects of everyday use, they can be judged as more or less beautiful, elegant, well designed, and the like. However, only when they lose their everyday pragmatic meaning (as bicycle parts) and transcend into the new symbolic level of reality (combination into a new whole, a bull's head), does the aesthetic experience emerge.

According to Apter (1984) the distinctive feature of aesthetic experience is that it is not goal directed (ie, pragmatic), but focused more upon the activity itself (ie, self-rewarding).

In their neuroimaging studies Cupchik and collaborators (Cupchik et al 2009) have shown that distinct cortical areas were activated when the observers were oriented to the pragmatic and aesthetic aspects of the same paintings. They found that pragmatic orientation was associated with the higher activation of the right fusiform gyrus (this area was associated with the perception of specific categories of objects, including faces; cf Kanwisher et al 1997; Martin et al 1996; McCarthy et al 1997), whereas the aesthetic orientation corresponded to a higher activation of the left and right insula (these areas were involved in emotional experience; cf Paradiso et al 1999; Teasdale et al 1999; Lane et al 1997) and left lateral pre-frontal cortex (this area plays a role in the cognitive control and the higher-order self-referential processes; cf Burgess et al 2007).

In our opinion aesthetic experience does not belong to the same class of phenomena as aesthetic preference, liking, the judgment of beauty, and so on. Unlike aesthetic experience, which is an exceptional state of mind, liking and the judgment of beauty belong to the domain of everyday experience with everyday objects (eg, human faces, bodies, clothing, buildings, etc). However, beauty can be a generator of aesthetic experience, but only if it transcends its biological, psychological, and social functions and gets new 'aesthetic' meanings in the symbolic ('virtual') reality. Namely, in aesthetic experience the object of beauty is not seen as a tool for the satisfaction of bodily needs (eg, appetitive and mating functions; cf Ramachandran and Hirstein 1999), but rather as a provocation of the higher level pleasures, such as pleasures of the mind (cf Kubovy 1999). In other words, to be a part of an aesthetic experience, beauty must transcend from its extrinsic (pragmatic) to intrinsic (aesthetic) values—that is, a *beautiful object* must become an *object of beauty*. According to this, even ugly things can elicit aesthetic experience (eg, aesthetic fascination with deformation, monstrous, grotesque, morbid, horrible, and other kinds of ugliness; cf Eco 2004, 2007).

In order to specify the distinctive characteristics of aesthetic experience, it will be useful to consider other similar phenomena of the exceptional or transcendental states of mind. In the following paragraphs these phenomena will be shortly presented.

Aesthetic experience is similar to the phenomenon referred to by Csíkszentmihályi's concept of *flow* or optimal mental processing (Csíkszentmihályi 1975, 1990). Flow is defined as an effortless mental energy flow caused by the awareness of congruence between incoming information and our goals. During this state of mind people are intensively immersed in what they are doing, with strong involvement in the process of the activity. Similarly to aesthetic experience, in this mental state attention is highly concentrated on a particular object or activity, which induces a distortion of the sense of time and a loss of self-consciousness (Csíkszentmihályi 1975; Csíkszentmihályi and Rathunde 1993).

Aesthetic experience is also closely related to Maslow's concept of *peak experience* (Maslow 1968). In peak experiences, attention is fully engaged and focused on a particular object, while the object is seen as detached from its everyday purpose and usefulness. Like in the state of flow, the person is self-transcending, self-forgetful, and disoriented in time and space. Generally speaking, peak experiences can be identified in all states of mental focusing on meditation, such as *mindfulness* (Kabat-Zinn 1998; Teasdale 1999). Also, it is close to *spiritual transcendence*, which is the feeling of connectedness and unity with other people, life, nature, and the like (Piedmont 1999). Like in peak experience, in spiritual transcendence persons focus the world from a larger perspective, losing the immediate sense of time and space.

Aesthetic experience can be associated with the concept of *absorption* proposed by Tellegan and Atkinson (1974). Absorption is the disposition of having episodes of amplified attention that fully engage the subject's mental (perceptual, representational) and executive

(motor) resources. For instance, absorption can emerge when a person is watching movies or theatre shows, reading novels, listening to music, observing paintings, and the like. In these situations he or she loses awareness of the surrounding environment and becomes fully engaged in the symbolic (virtual) world, experiencing himself or herself as a part of this virtual world. While Tellegan and Atkinson (1974) were interested in the individual differences in absorption, some studies were focused on its stimulus constraints. For instance, Troscianko and collaborators (Troscianko et al [in press](#) [this issue]) found that big screens improved the viewer's feeling of being immersed, or feeling of 'presence', in a movie. The term *presence* was defined as the illusion of being 'in the movie' (ie, virtual aesthetic world) rather than in the cinema (ie, real environment).

Koestler (1970) put aesthetic experience in the framework of creative processes emerging in art, science, humour, and playing. According to Koestler, the creative act happens when apparently incompatible conceptual frames are associated in a completely new whole, as when, for instance, the bicycle handlebars and seat are brought together in the *Bull's Head*. Koestler held that in the arts 'incompatible' frames are juxtaposed (tolerance to ambiguity), in science they are fused into a new larger synthesis (apparently conflicting data become concordant within a new general theoretical paradigm), and in humour and jokes they are reversed (unexpected transitions from one to another framework). These processes correspond to a 'self-transcending' tendency in art and a 'self-assertive' tendency in humour, whereas in science these two tendencies are balanced. Finally, these states are accompanied with exceptional feelings, such as the so-called *Aha experience* in intellectual insights and scientific discoveries (also known as the *Eureka experience*), *Ah experience* in art appreciation, and *Ha-ha experience* in humour (cf Koestler 1970).

1.1 Aesthetic experience: summary of preliminary definitions

In the preliminary definitions of aesthetic experience and similar phenomena, three characteristics can be identified as crucial and distinctive.

- (1) The first characteristic refers to the *motivational, orientational* or *attentive* aspect of aesthetic experience. During the aesthetic experience persons are in the state of intense attention engagement and high vigilance; they are strongly focused on and fascinated with a particular object. They lose their self-consciousness, the awareness of the surrounding environment, and the sense of time.
- (2) The second characteristic refers to the *cognitive*, that is, semantic, symbolic, and imaginative aspect of aesthetic experience: a person appraises the aesthetic objects and events as parts of a symbolic or 'virtual' reality and transcends their everyday uses and meanings (eg, we 'see' the bull's head, not the bicycle parts; in theatre we are worried about the characters, not the actors, etc).
- (3) Finally, the third characteristic of aesthetic experience is *affective*. It refers to the exceptional emotional experience: a person has a strong and clear feeling of unity with the object of aesthetic fascination and aesthetic appraisal.

2 The structure of aesthetic experience

In the previous paragraphs the characteristics of aesthetic experience were derived from conceptual definitions and analyses. In our recent studies (Marković 2010; Polovina and Marković 2006) similar characteristics of aesthetic experience were specified empirically. Through the use of a production task, a set of descriptors of aesthetic experience was obtained: participants were asked to list the attributes which expressed their state of mind during aesthetic experience of both artistic and non-artistic aesthetic objects (eg, natural scenes). In the study by Polovina and Marković (2006) factor analyses of the ratings of different sets of paintings on selected descriptors (ie, scales) revealed a single factor named

Aesthetic Experience. This factor encompassed descriptors such as (ordered by loading) exceptional, fascinating, irresistible, eternal, profound, unique, unspeakable, and universal. In the study by Marković (2010), two factors were obtained, *Aesthetic Experience* and *Affective Tone*. *Aesthetic Experience* included descriptors such as *exceptional, profound, unique, awing, delightful, fascinating, eternal, and unspeakable*. *Affective Tone* was a bipolar factor defined by positive and negative emotional descriptors (positive pole: *lovely, charming, cheerful*, etc; negative pole: *scary, disgusting, hateful*, etc). The results of the factor analyses clearly confirmed our starting definition of aesthetic experience as a special kind of subject-object relationship—that is, as a fascination with an object, appraisal of profound meanings of an object, and a corresponding feeling of an exceptional relationship with an object.

Further analyses have shown that the factor *Aesthetic Experience* was relatively independent from the other aspects of the subjective experience of the paintings. For instance, the Promax rotation of the factors in the study by Marković (2010) revealed a low correlation ($r = .11$) between *Aesthetic Experience* and the second extracted factor, *Affective Tone*. In our other study (Polovina and Marković 2006) the ratings of paintings on the *Aesthetic Experience* scales were correlated with the ratings on other previously specified dimensions of subjective experience of various artistic and non-artistic visual stimuli (Marković and Janković 2001; Marković et al 2002; see also Marković and Radonjić 2008). Regression analysis showed that *Aesthetic Experience* had a moderate, but significant correlation ($r = .48$) with the ratings on the factor *Arousal* (scales: *interesting, complex, imaginative*, etc), whereas the correlations with the ratings on other factors, such as *Hedonic Tone* (scales: *pleasant, cheerful, warm*, etc) and *Regularity* (scales: *harmonious, regular, real*, etc) were very low (about zero) and non-significant.

The results of the correlational analyses suggest that the aesthetic experience is not reducible to positive emotions or positive hedonic tone, but that it can be associated with both pleasant (attractive) and unpleasant (aversive) paintings. This is in line with Silvia's idea that aesthetic appraisal can include both positive emotions, such as pleasure, pride, and surprise and negative emotions, such as hostile emotions (anger, disgust, and contempt), some self-consciousness emotions (shame, guilt, regret, embarrassment), and some cognitive emotions (confusion) (cf Silvia 2009; see also Cooper and Silvia 2009; Silvia and Brown 2007). On the other hand, some authors identified aesthetic feelings with either pleasurable emotions (cf Martindale and Moore 1988; Winkielman and Cacioppo 2001) or negative (unpleasant) emotions (Furnham and Avison 1997; Rawlings 2003; Rawlings et al 2000; Silvia 2005, 2009; Tobacyck et al 1981; Zaleski 1984; Zuckerman et al 1993). Results of correlational analyses have also shown that aesthetic experience is not correlated with the experience of regularity and the compositional harmony of paintings. Many previous studies support the possibility that both highly structured (eg, classicistic) and 'chaotic' (eg, expressionistic) paintings can be experienced as highly fascinating, exceptional, and the like (cf Furnham and Avison 1997; Rawlings 2003; Rawlings et al 2000; Tobacyck et al 1981; Zaleski 1984; Zuckerman et al 1993). In order to avoid a possible misunderstanding, one must emphasize that although aesthetic experience can be induced by both pleasurable and displeasurable objects, aesthetic feelings themselves (eg, admiration, delight, awe etc) are basically positive as 'pleasures of the mind' (cf Kubovy 1999). For instance, we can appraise the content of Ibsen's novels as very negative (dark and depressive), but our appraisal of their sophisticated and perfectly articulated form can induce a positive and rewarding aesthetic feeling. Later in this paper, the nature of aesthetic feeling and its relationship with other emotions will be elaborated in more details.

Finally, correlational analysis has shown that the *Aesthetic Experience* is closest to the factor *Arousal*, that is, the interest for the paintings: the greater the arousal, the greater the

aesthetic fascination. Generally speaking, these results suggest that the object of aesthetic experience can be both pleasant and unpleasant and both more or less regular, but it must be arousing and interesting. The aesthetic effect of arousal was the central issue of Berlyne's model of relationship between preference, arousal and the so-called collative variables (complexity, uncertainty, novelty, ambiguity, etc): complex, irregular, and unusual stimuli have greater arousing potential; they draw more attention and are experienced as more interesting and attractive than simple, regular, and ordinary stimuli (Berlyne 1971, 1974). Aesthetic fascination, as a part of aesthetic experience, is based on similar processes, but in this case the attention, the vigilance, and the mental activity are particularly intense (high concentration), more extensive (wide range of attention and mental activities), and longer-lasting (maintenance of vigilance). Aesthetic fascination will be more precisely specified in the following paragraphs, which concern the functional relationship between aesthetic fascination, appraisal, and feelings.

3 The functional model of aesthetic experience

Aesthetic information processing is usually described as a multi-stage process. Many models agree on the notion that the process starts with stimulus input, then continues through several processing stages, which are connected to deeper memorial instances, and ends in the final decision making, which is an evaluative judgment of the stimulus. For instance, Ognjenović (1991) suggested that aesthetic information processing passes through three stages: two earlier stages are focused on two distinct categories of stimulus properties (symmetry and complexity), whereas the later stage elaborates a deeper semantic aspect of the object. According to this model, an aesthetic response can be realized from each stage of processing, which explains the variability of aesthetic taste (eg, preference for simplicity vs. preference for complexity).

Parsons (1987) proposed a model of processing artworks based on the analysis of interviews. He described five different ways of dealing with artworks, that is, five different stages of aesthetic processing that are to be understood as developmental stages: (a) *favouritism* (content-oriented preference and personal taste), (b) *preference for beauty and explicit realism*, (c) *expressiveness* (empathy with the artist's feelings), (d) *focus on style and form*, and (e) *autonomy* (appraisal of the underlying concepts and the autonomy of the artwork).

According to Chatterjee (2003) visual information processing (perceptual analysis, grouping, and object recognition) elicits emotional processes, and the emotional processes send feedback information into the perceptual and cognitive system via attentional mechanisms. Chatterjee associated these processes with distinct brain regions, such as the visual cortex (occipital areas for early, and ventral for later visual processing stages); the anterior medial temporal lobe, medial, and orbital cortices in the frontal lobe, and subcortical structures, which mediate emotions; and the dorsolateral frontal and medial frontal cortices, which are involved in aesthetic decision making.

Similarly, in the three-component model of aesthetic preference proposed by Nadal and collaborators (Nadal et al 2008), emotional and cognitive processes were put into the same framework and associated with corresponding neural correlates. The first component encompasses two aspects of emotional response, such as the representation of the reward value of the stimulus (orbitofrontal cortex and caudate nucleus) and attentional regulation, which is associated with the awareness of the emotional state (anterior cingulate cortex). The second component refers to the enhancement of early visual processing (occipital, visual cortex), and the third component is decision-making (left dorsolateral prefrontal cortex).

Finally, the most comprehensive model of aesthetic information processing is the five-stage model proposed by Leder and collaborators (Leder et al 2004). The model includes the following stages: (1) *perceptual analysis* (eg, processing of complexity, symmetry, etc); (2) *implicit memory integration* (the processing of familiarity, prototypicality, etc); (3) *explicit classification* (the processing of style and content); (4) *cognitive mastering* (art-specific versus self-related interpretations); and (5) *evaluation* (measuring of mastering success). One of the most important points in this model is a feedback-loop between mastering and evaluation: the results of cognitive mastering are continuously evaluated in relation to how successfully the artwork is understood (about the affective evaluation of processing fluency, see Reber et al 1998). In other words, the evaluation stage guides and initializes the further aesthetic processing by measuring its success. Finally, the evaluation process ends with two parallel outputs: aesthetic judgment (eg, judgment of artwork's beauty) and aesthetic emotion (eg, feeling of pleasure). According to this model, all processing stages are accompanied by emotions. Successful processing results in positive affective states (pleasure or satisfaction), whereas non-successful processing results in negative emotions.

All proposed models deal with the temporally distributed stages of information processing which ends with a single outcome—*aesthetic decision, response, or judgment*. An exception is the model of Leder and collaborators (Leder et al 2004), which ends with two outputs—*aesthetic judgment and aesthetic emotion*. For the purpose of our interest, these models are not completely satisfying because they were not focused on the factors and mechanisms which generate the aesthetic experience itself, as an exceptional state of mind. However, they have some elements which are important and interesting for creating the model of aesthetic experience. We found the following elements particularly important: (a) feedback relationship between perceptual-cognitive and emotional processes (Chatterjee 2003; Leder et al 2004; Nadal et al 2008), (b) the role of attentional mechanisms in aesthetic information processing (Chatterjee 2003; Nadal et al 2008), and (c) the distinction between earlier (perceptual) stages, focused to physical features of an object, and later (cognitive) stages, which are responsible for the appraisal of the semantic aspects of artworks (Chatterjee 2003; Leder et al 2004; Nadal et al 2008; Ognjenović 1991; Parsons 1987).

Our tentative model of the most elementary functional relationships between different domains of aesthetic experience is schematically outlined in Figure 1. This model has two general stages, the initial and the main stage. The initial stage begins with the perceptual and cognitive appraisal of the object's basic properties, such as complexity, regularity, familiarity, and the like. If the object is appraised as interesting, then arousal and attention are amplifying, while the affective consequence of this process is a state of excitement. Excitement can be more or less pleasurable, which is affected by both more pleasant (eg, funny, cute, erotic etc) and less pleasant (eg, strange, bizarre, deformed) stimuli. The increased excitement additionally amplifies the attention through the feedback connections. At this level, the amplification of attention is crucial because it adds the 'fuel' to the cognitive system, and thus it supports the cognitive preparation for the further exploration of an object. According to the *Affect Infusion Model* (Forgas 1995) a positive mood at the beginning of an aesthetic experience affects the quality of further aesthetic processing, whereas negative affect leads to a more restricted spread of activation. However, in our model, the increase of arousal, and not positive hedonic tone, is crucial for enhancing the processing (arousal can be induced by both pleasant and unpleasant stimuli).

In the main stage the further appraisals are focused on the detection of more complex compositional regularities and the interpretation of more sophisticated narratives and hidden symbolism of the object's structure. The appraisal on this level is self-rewarding, which results in increased attention—that is, a fascination. In this paper, fascination is

defined as a state of intensive, extensive, and long-term concentration and vigilance, which continuously ‘feeds’ and energizes the cognitive system. This contributes to the efficacy and ease of further appraisals, which is particularly important for the processing of multilevel narratives or highly sophisticated artistic compositions. Finally, this process is accompanied with a feeling of an exceptional and unique relationship with the object of fascination. Like in the initial stage, the aesthetic emotion affects the maintenance of fascination via feedback connections, which indirectly contributes to the efficiency of the appraisal process. The appraisal process is sometimes very long-term, such as the reading of a novel, while it is sometimes relatively short, such as the identification of a bull’s head in Picasso’s famous composition.

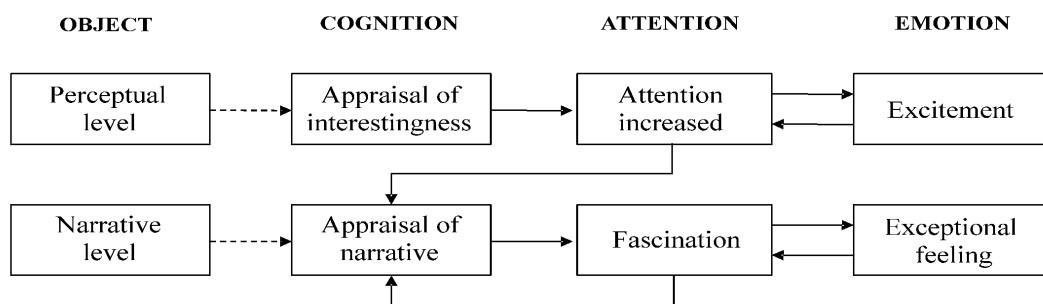


Figure 1. The two stages of the functional relationships between cognitive, attentional and emotional aspects of aesthetic experience of an object. Arrows indicate the direction of influence (see the text for explanation).

The proposed model must assume that the cognitive domain has a central role in aesthetic experience because it controls and gives sense to the whole process. For instance, if one is not able to understand the symbols and allegories of the Biblical mythology, the meaning of a great part of Western art would be missing. The appraisal of meaning is crucial even for the aesthetic experience of a very simple artistic object, such as Picasso’s composition of the *Bull’s Head*. Namely, if persons are not acquainted with modern technology, including bicycles and their parts (eg, handlebars and the seat), or (and) if they have never seen animals with horns, the aesthetic experience will be missing. Many studies found the crucial role of top-down processing and an activation of semantic networks in the aesthetic appreciation of various classes of stimuli (cf Faerber et al 2010; Jakesch et al 2011; Leder et al 2006; see also Leder et al 2004). In the proceeding paragraphs the cognitive domain of aesthetic experience (aesthetic appraisal), related to the main stage of the model, is considered in more detail.

3.1 Aesthetic information processing

Figure 2 shows the cognitive processes involved in aesthetic information processing at the main stage of the model. The external information domain is segmented into two aspects and processed through two corresponding levels: the levels of narrative and formal composition.

3.1.1 The processing of a narrative. In its strict meaning, a narrative is defined as a temporal semantic structure which provides different kinds of information (Chatman 1978). Narratives have two levels—story and discourse. At the story level the information about real or imagined events is explicitly denoted and transmitted. In narrative arts (eg, literature, theatre, film, etc) the story describes the events passing through four usual stages: prior state, exposition, complication, and equilibrium. On the other hand, the discourse has an expressive function; it adds affective or connotative meanings to the information provided by the story (cf Brooks and Warren 1979; Chatman 1978). Instead of discourse, in this paper

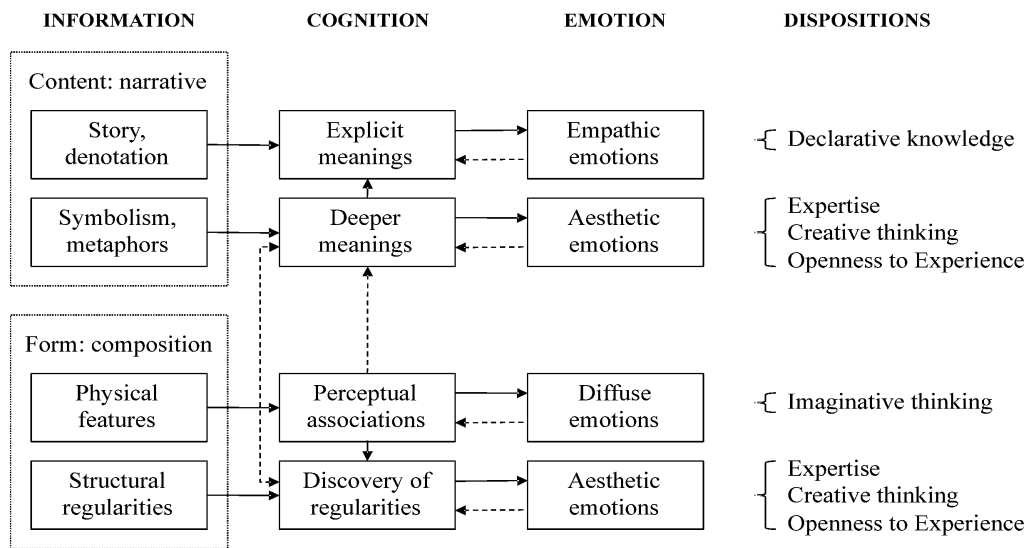


Figure 2. The model shows four parallel streams of aesthetic information processing and their connections with external information and internal emotional responses. Underlying dispositions for each stream are shown as well. Arrows indicate the direction of influence. Solid arrows denote primary connections, and the dashed ones denote secondary connections. (See the text for detailed explanation.)

we will rather use the term *symbolism* for deeper and implicit layers of the narrative, such as 'hidden' meanings, metaphors, ideological, mythological, and other symbolism and all other expressive and emotionally loaded contents as well.

Symbolism can be more or less distant to the denotative content of the explicit story. For example, in official portraits of royal families and national heroes this distance is relatively small, because the symbolism is based on some real social and ideological features that the depicted persons represent. On the other hand, in some cases, such as for instance, Delacroix's painting *Liberty leading the people*, the symbolism is very distant to the depicted content. Namely, the denotative content of this painting is the group of people, including the boy with a gun and the girl with naked breasts, who are walking over dead bodies. However, it is obvious that Delacroix's intention was not to depict exact appearance of the concrete people in the scene, but rather to use this scene as a symbolic representation of something more abstract and conceptual, such as the struggle for freedom and the rise against tyranny.

Two levels of a narrative are associated with two-way connections. Symbolism contributes the better understanding of the story: for instance, if we are not familiar with Christian symbols, we will not be able to correctly understand the content of medieval art. On the other hand, a story can be used as a means for creating meanings on a more symbolic and metaphoric level: for instance, surrealistic artworks often use bizarre stories and contents to symbolize some abstract concepts (consider, for example, the role of an explicit story in Louis Bunuel's movies or Eugene Ionesco's dramas).

For understanding the explicit meaning of a story or theme basic (general) declarative knowledge and related cognitive and memorial structures are sufficient, whereas for the interpretation of deeper symbolic meanings, more specific declarative knowledge is needed. Many studies have shown the crucial role of art *expertise* (mastering, training) in preference and efficient elaboration of different categories of paintings (cf Augustin and Leder 2006; Bordens 2010; Cupchik 1992; Cupchik and Gebotys 1990; Leder et al 2004; Leder et al 2006;

Nodine et al 1993; O'Hare 1976; Russell 2003; Silvia 2005; Specht 2007; Temme 1992; Winston and Cupchik 1992).

Some theoretical approaches such as Gombrich's conceptualistic theory held that art is a conventional, language-like system which can be understood only if one has learned to 'read' its meanings (Gombrich 1969; see also Black 1972; Kreitler and Kreitler 1972; Penrose 1973). In our opinion, expertise and explicit knowledge are not sufficient for narrative appraisal. Moreover, in some cases, such as understanding new, unusual, 'non-official', and revolutionary artworks, expertise can be inhibitory and restrictive (about the so-called functional fixation of expertise, see more in Sternberg 1996; Sternberg and Lubart 1995). In such cases, two additional dispositions can contribute to the quality and efficacy of appraisal. The first disposition is ability for *creative thinking*, in which apparently incongruent and distant semantic frames (meanings, symbols) are associated in novel semantic entities (cf Gardner 1993, Guilford 1975; Koestler 1970; Sternberg and Lubart 1995). Creative thinking can support the transfer of expertise to new situations, but in some cases it can be opposed to the conservative tendencies of expertise and prior knowledge. The second supporting disposition is a personality trait *Openness to Experience*, which has an important motivational role in searching for new meanings and hidden symbolism in artistic and non-artistic aesthetic objects and events. Empirical data clearly show that high scorers of the *Openness* prefer less structured, more complex, and abstract artistic stimuli (Feist and Brady 2004; Rawlings 2000, 2003).

3.1.2 *The processing of form and composition.* Every object of aesthetic processing has some physical form which determines the stylistic aspect of the artwork's identity. An aesthetic form is a specific composition of various features such as colours, lines, shapes, sounds, gestures, and so on. Some compositions are uni-modal (eg, paintings are visual artworks, music is auditory art, etc), whereas some compositions are multi-modal (eg, opera, theatre, film, etc). Many studies and phenomenological demonstrations have shown that even the single iconic features (eg, colours, lines, and shapes) can provide some elementary meanings, such as dynamics, warmth, health, time, destruction, loneliness, and so on (cf Arnheim 1980; Janković and Marković 2001, 2009; Oyama et al 2008; Palmer and Schloss 2010). These implicit perceptual meanings can be used as artistic means for creating the symbolic meanings on a narrative level. For instance, the use of vivid red colour can emphasize the depiction of passion in pictorial representations, the use of diagonal lines can induce the impression of dynamics, the use of sharp angular lines can be associated with aggression, danger, and so on. Similarly, some auditory (phonemic) features of spoken language (eg, rhyme, onomatopoeia, etc) are very frequently used to stress various meanings in poetry, drama, and so on.

From an aesthetic point of view, the compositions of features are more important than the single features. Namely, in artistic compositions (and in natural scenes and events, as well), the global structural organizations induce impressions which can support the understanding of a narrative. For instance, the temporal composition of a film (editing), and the dynamic composition of single scenes (viewing angles, moving of camera, etc) directly shape and articulate the full meaning of a narrative. However, in non-narrative arts, such as abstract paintings, architecture and music, the composition is the central source of aesthetic appraisal. According to Arnheim (1949, 1969, 1980), the aesthetic effects of abstract compositions are based on the holistic nature of perception and the capability for abstract perceptual thinking. Namely, our perceptual-cognitive system is highly sensitive to so-called structural forces and dynamic expressions of abstract Gestalt qualities, such as ovalness, sharpness, branching, jumping, and so on. The compositions of such qualities are analogue to the narrative in narrative arts, while the single features (Gestalt qualities) play the role of concepts used as 'building blocks' of a narrative. In our model, narrative and compositional levels are

interconnected: all narratives have some compositions (eg, structure of a novel), while all compositions have some narratives or narrative-like meanings (eg, narrative of an abstract painting).

Without the capability for perceptual and imaginative thinking and associations of implicit meanings into more complex structures, the aesthetic appraisal of music and abstract visual art would not be possible. However, like in the case of narrative symbolism, the complete understanding of abstract art implies some specific knowledge. Many studies have shown that the role of expertise is particularly important for the appraisal of abstract paintings: experts preferred abstraction over figural representation (Hekkert and van Wieringen 1996; Neperud 1989) and dominantly used a global viewing strategy for abstract paintings compared to non-experts (Zangemeister et al 1995). Facilitation of the preference for abstract art emerged even after short-term training sessions in which participants were informed about context and conditions of the creation of artworks (Schimmel and Forster 2008) or after participants were encouraged in ‘abstract thinking’ (Temme 1992). In addition, like in the case of the appraisal of symbolism, creative thinking and Openness to Experience play an important role in understanding the complex regularities hidden in abstract artistic compositions (cf Feist and Brady 2004; Rawlings 2000, 2003; Sternberg and Lubart 1995).

In the previous paragraphs two parallel levels of aesthetic information processing were outlined: (a) the narrative, that is, a thematic and symbolic meaning of an artwork, and (b) the composition, that is, a stylistic form of expression. Both levels are important for generating aesthetic emotions, but different arts put a different accent on one or the other level: for instance, literature and film are more focused on the narrative, whereas music and abstract art are dominantly based on composition (form of expression). In our model, aesthetic emotions are associated with the main stage of aesthetic information processing—that is, with the appraisals of symbolism and structural regularities (initial stage includes only excitement elicited by the appraisal of interestingness; see Figure 1). In the next paragraphs, the distinctive features of aesthetic emotions are considered in more details.

3.2 Aesthetic emotions and other emotions

Silvia has pointed out that aesthetic appraisal includes a wide spectrum of specific emotions including pleasure, pride, surprise, anger, disgust, contempt, shame, guilt, regret, embarrassment, confusion, and so on (Silvia 2009; see also Cooper and Silvia 2009; Silvia and Brown 2007). He suggested that all these emotions are aesthetic, because they are associated with the appraisal of an artistic narrative, but he did not provide the explicit criteria which distinguished aesthetic and non-aesthetic emotions (eg, aesthetic anger vs. non-aesthetic anger).

Frijda (1989) specified aesthetic emotions more precisely. He distinguished two kinds of aesthetic emotions: complementing and responding emotions. *Complementing* emotions are similar to the emotions in real life: they are generated by the artwork content, such as a suffering for the pain of the depicted character. On the other hand, *responding* emotions are generated by the structure of artwork itself; they are the aesthetic emotions in their fundamental sense, such as a delight and fascination with a perfect artistic form or composition.

Similarly, Cupchik (1994) proposed two models of aesthetic emotional processing, reactive and reflective. The *reactive* model accounts for pleasure and arousal evoked by the specific content of artworks (eg, sentimental feelings of characters), while the *reflective* model refers to the contribution of emotions to the generating of polyvalent meanings of multilevel artistic narratives. According to Cupchik, these two models correspond to two cognitive approaches. One is selectively focused on *diverse* features and qualities of aesthetic objects in isolation (basis for the reflective model), whereas the other explores the *unity*

which interrelates the single qualities (basis for the reflective model). Reflective orientation is evidently more important for aesthetic experience because it connects and unites the diverse contextual relations and the polyvalent meanings into a coherent aesthetic (artistic) whole.

Aesthetic emotions could be identified as one of the Kubovy's (1999) *pleasures of the mind*. According to Kubovy, pleasures of the mind have no distinctive physiological and behavioural expressions typical for basic emotions and pleasures of the body. Namely, pleasures of the mind are not simple emotional reactions, but rather collections of emotions distributed over time: for example, during the reading of a novel or the watching of a film or a theatre show excitement, fear, anger, tranquillity, and other emotions are transforming one in the other in respect to the changing of the narrative. This collection can be specified as the basis for the generating of an aesthetic emotion.

Scherer (2005) also delineated everyday emotions from aesthetic emotions. Everyday emotions have clear adaptive functions, which require the appraisal of goal relevance and coping potential, whereas the *aesthetic emotions* are not homeostatic and utilitarian (ie, oriented towards the satisfaction of bodily needs), but rather intrinsic, that is, produced by the quality of the aesthetic object itself. According to Scherer, examples of aesthetic emotions are being moved or awed, being full of wonder, admiration, bliss, ecstasy, fascination, harmony, rapture, solemnity, and the like. Scherer argues that the non-adaptive nature of aesthetic emotions does not mean that they are completely disembodied because in intense aesthetic experiences some diffuse non-action-oriented bodily responses emerge, such as goose pimples, shivers, moist eyes, and the like (see also Frijda 1986).

The above-mentioned definitions suggest that aesthetic emotions are exceptional affective qualities which are functionally specific and non-reducible to everyday emotions. However, everyday emotions are also included in our model, but their function is not to generate aesthetic emotions directly, but rather to support the appraisals of the narrative and composition. Namely, all narratives include some emotional situations, and some narratives are dominantly emotional (eg, sentimental novels), so they require explicit emotional appraisals. In other words, appraisals of inner emotional states of characters and inter-personal relationships are necessary for understanding the basic meaning of artwork. Without the empathic appraisals, even the very superficial layers of artworks would not be correctly understood (eg, portrait of a 'sad woman', story of 'lost love', etc). In other words, emotions can be used as constitutive parts of narratives which indirectly contribute to the generating of aesthetic emotions. In this case, the aesthetic emotion is an emotion which is emerging through the process of appraisal of more profound symbolic layers of a narrative. It continually accompanies the appraisal process and via feedback mechanisms affects aesthetic information processing (see also Leder et al 2004).

Some more diffuse emotions are generated during the perception of simple aesthetic objects and their features. For instance, some studies have shown that sharp irregular figures were experienced as more disturbing than oval regular shapes (cf Arnheim 1980; Janković and Marković 2001, 2009; Oyama et al 2008), light reddish colours were judged as more pleasant than dark brown ones (Palmer and Schloss 2010), and so on. Our model suggests that these diffuse affective qualities are associated with perceptual qualities through the feedback mechanisms (eg, red + excitement, ovalness + pleasure, etc). On the other hand, the aesthetic emotion is emerging here as an evaluation of how successful the detection of deeper structural regularities is (collections of impressions) in both narrative (literature, film, theatre, etc) and non-narrative compositions (music, abstract art, architecture, etc).

To summarize, in this paper aesthetic emotions are defined as feelings of unity and exceptional relationship with the objects of aesthetic experience. Aesthetic emotions, such as admiration, delight, rapture, awe and so on, are induced by the appraisal of the artwork's

or natural object's form (eg, symbolic structure and compositional regularities), and they are basically pleasurable. On the other hand, the emotions induced by the appraisal of the content of artwork (eg, empathy with characters of a novel) can be both pleasurable and unpleasurable.

3.3 Integration: aesthetic awareness

The processing of aesthetic information is based on cognitive structures which are capable of solving perceptually and semantically demanding tasks, such as the interpretation of multi-level symbolism, association of distant narrative frameworks into temporally and conceptually coherent structures, detection of sophisticated compositional regularities, integration of multi-level perceptual, symbolic, and affective information, and so on. Successful realization of such complex mental activities requires high concentration and awareness and efficient working memory processing. Our model emphasizes the role of general arousal and attention (fascination) in 'energizing' the cognitive processes and expanding the short-term memory workspace for aesthetic information processing. Existing literature does not provide neural models of specific 'aesthetic awareness', but some fMRI studies suggested that the higher activities in parietal and frontal areas could be neural correlates of general awareness and consciousness (for a review, see Rees 2001b). However, other studies suggested that consciousness is not concentrated at local brain regions but is associated with globally distributed networks across a large scale of neuronal groups (cf Baars 2002; Engel et al 2001; Freeman 1991; Kanwisher 2001; Rees 2001a; Tononi and Edelman 1998; Watt 2004). According to Rees (2001a) the activity in widely distributed neural networks reflects the representations of stimuli gaining access to a 'global workspace' which constitutes consciousness. In other words, awareness of information represented in a particular brain region enables its access by most of the other brain regions (cf Kanwisher 2001). Further studies should provide more precise models applicable for the states of expanded and intensive awareness in aesthetic experience.

4 Conclusion

In the present paper the aesthetic experience was specified as an exceptional state of mind which is qualitatively different from 'normal' everyday mental states. In this mental state, a person is fascinated with a particular object, whereas the surrounding environment is shadowed, self-awareness is reduced, and the sense of time is distorted. Amplified arousal and attention provide the additional energy which is needed for the effective appraisal of symbolism and compositional regularities in 'virtual' aesthetic realities. Finally, during this process a person has a strong feeling of unity and the exceptional relationship with the object of aesthetic fascination and aesthetic appraisal. The findings of our previous studies (Marković 2010; Polovina and Marković 2006) suggested that aesthetic experience is closer to arousal (interestingness) than other dimensions of subjective experience, such as a positive hedonic tone (pleasure) and regularity (harmony): the object of aesthetic experience can be both pleasant and unpleasant and both more and less regular, but it must be arousing and interesting. In our general model (Figure 1), interestingness plays an important role in generating the aesthetic experience: appraisal of interestingness opens a 'mental space' for further aesthetic appraisals and continuous aesthetic fascination.

According to our approach, aesthetic experience can focus on a wide spectrum of objects, including intentionally created artworks and aesthetically designed objects (eg, clothing, cars), natural scenes and events, human beings and animals, objects of everyday use, and so on. The main condition that such objects must satisfy to become the objects of aesthetic experience is the transcendence from the pragmatic to the aesthetic (symbolic) level of meaning. For instance, some natural scenes and events, such as observing the stormy

sky with strong lightings, may be extremely fascinating and induce the impressions of the mystical and sublime power of nature and our weakness and helplessness. The appraisal of such symbolism and the accompanying collection of emotions, such as fear, surprise, awe, excitement, and the like, can generate the aesthetic experience in its full meaning. However, the emerging of aesthetic experience is not automatic; it is the result of an ecological and social context which specifies the particular subject-object relationship. Namely, some persons, such as farmers, are not aesthetically fascinated at all with a storm. Their appraisals would be dominantly pragmatic: a storm is a dangerous event which can cause serious damage; it can destroy their crops and the like. A similar duality of the object's status can be identified even in the realm of art. Namely, artworks are not automatically and objectively the objects of aesthetic experience. For many non-experts, artworks are rather seen as the ornamental parts of the everyday environment than as exceptional objects with deeper aesthetic symbolism (cf Winston and Cupchik 1992). Also, artworks can be treated and experienced very pragmatically, as material goods in an art market.

Further conceptualization of aesthetic experience should specify possible differences and similarities in various forms of aesthetic experience. Some analyses and findings suggest that aesthetic experience can be generated in two forms, such as fascination with unusual, uncertain, ambiguous, and conflicting information (eg, modern art), and admiration to perfect articulation, complex compositional regularities, and sophistication of multilevel symbolic narratives (eg, classical art) (cf Berlyne 1971, 1974; Kubovy 1999; Silvia 2005).

Finally, the more comprehensive approach to aesthetic experience should take into account its biological and psychological functions. We can speculate that the function of aesthetic experience comprises the functions of two groups of close phenomena, such as other exceptional experiences (eg, peak experiences, flow, etc) and the experience of beauty (eg, pleasure, attraction, harmony, etc). In our opinion, the purpose of aesthetic experience could be described as a 'winning' combination of a strong appetitive tendency associated with the experience of beauty and a certain intrinsic 'liberating' tendency associated with exceptional states of mind and similar phenomena. In the psychology of art, the functional aspect of symbolism in aesthetic experience was a favourite topic of psychoanalytically oriented theories (cf Freud 1910; Kris 1952), whereas the psycho-biological approaches were predominantly oriented towards a biological basis of aesthetic preference and aesthetic attraction (cf Ramachandran and Hirstein 1999; Singh 1993; Symons 1979). We believe that in the future the neuroscience of awareness and states of consciousness combined with the biological approach could be very fruitful for the better understanding of the basic function of aesthetic experience.

Acknowledgements. This work was supported by The Ministry of Science and Technological Development of Serbia, grant number 179033.

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