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Aesthetic Experience and the Emotional Content of Paintings

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In this study we investigated the relationship between aesthetic experience and other emotional qualities judged in paintings. Aesthetic experience was defined as an exceptional state of mind in which a person is focused on a particular object, transcending its everyday uses and meanings and losing the awareness of surroundings and even of himself/herself. In this state a person has an exceptional emotional experience, that is a feeling of unity with the object. Our basic idea is that aesthetic experience is not reducible to pleasure or a positive hedonic tone, but a person can equally be fascinated with both pleasant and unpleasant objects. In preliminary studies we specified the stimulus set of figural and semi-figural paintings, and a set of descriptors of emotions, feelings and aesthetic experience. Participants judged the paintings on descriptors (seven-point scales). Factor analysis revealed two large factors: the bipolar factor Affective Tone (descriptors on the positive pole: *lovely*, *charming*, *cheerful*, etc; descriptors on the negative pole: *scary*, *disgusting*, *hateful* etc.) and Aesthetic Experience (descriptors: *exceptional*, *profound*, *unique*, etc.). Additional analyses have shown no significant correlation between the two factors. These findings confirmed our idea that aesthetic experience is independent of pleasure or affective attraction, and that it can be induced by both pleasant and unpleasant paintings.

Key words: *aesthetic experience, emotions, paintings*

The concept of aesthetic experience has two general meanings in the psychology of art. The first meaning is very close to the common sense definition in which aesthetic experience is identifiable with aesthetic preference. According to this, all objects, scenes and events in our surroundings can be experienced as more or less aesthetic or judged as more or less beautiful, pleasant or attractive. In this paper we will use the concept of aesthetic experience in its second meaning, that is as the exceptional state of mind induced by particular objects, scenes and events.

Cupchik and Winston (1996) specified aesthetic experience as a psychological process in which the attention is focused on the object and all other objects, events and everyday concerns are suppressed. Similarly,

Ognjenović (1997) defined aesthetic experience as a particular kind of subject-object relationship in which only one object exists in the mind and strongly engages the subject, shadowing all other objects and events in its surroundings. According to this view, aesthetic situations and objects of aesthetic fascination are fundamentally different from everyday situations and objects of everyday use. One of the best examples of this difference is the famous Picasso's Bull's Head: taken as themselves the bicycle handlebars and seat are everyday objects which can be judged as more or less beautiful, elegant, and well designed and the like, but only their combination into a new whole, a bull's head, induces the real aesthetic experience. In other words, in the composition Bull's Head, the bicycle parts lose their everyday pragmatic meaning and transcend into the new aesthetic (virtual) level of reality.

The concept of aesthetic experience is similar to Czikszentmihalyi's notion of *flow* (Csíkszentmihályi, 1975, 1990). Flow is a mental state in which the persons are fully immersed in what they are doing, with full involvement in the process of the activity. Like an aesthetic experience, a flow is characterized by high concentrating and focusing, a loss of the feeling of self-consciousness, distorted sense of time, and the like (Csíkszentmihályi, 1975; Csíkszentmihályi & Rathunde, 1993).

Aestetic experience can also be associated with Tellegen and Atkinson's (1974) concept of *absorption*. Absorption is the disposition of having episodes of single 'total' attention that fully engages the subject's perceptual, representational and motor recources. Typical situations in which absorption emerges are watching movies or theatre shows, reading novels and poetry, listening to music or observing paintings. In all these situations the person loses awareness of his/her surrounding environment and becomes fully engaged in the virtual world, experiencing himself/herself as a part of this virtual artistic space (e.g. virtual world of movie) rather than sitting in the audience (about the duality between reality and aesthetic 'reality' see Frijda, 1989).

The aesthetic experience can be categorized in Maslow's *peak experiences,* as well (Maslow, 1968). In this category of experiences attention is totally engaged and focused on a certain object and the object is seen as detached from its possible usefulness and purpose. A person is ego-transcending, self-forgetful and disoriented in time and space. This aspect of peak experience can be recognized in so-called *mindfulness* and similar states of mental focusing in meditation, as well (cf. Kabat-Zinn, 1998; Teasdale, 1999).

In his classic book *Act of creation* Arthur Koestler (1970) put aesthetic experience in the context of creative processes emerging in art, science and even humor and playing. Koestler's basic idea is that the creative act happens if two or more apparently incompatible conceptual frames are associated in a completely new entity, as for instance the bicycle handlebars and seat are brought together in the Bull's head. Koestler held that these frames are juxtaposed in the arts,

fused into a new larger synthesis in science and reversed in jokes and humor. This corresponds to a "self-transcending" tendency in art and a "self-assertive" tendency in humor, while in science both tendencies are balanced. All these states are followed by exceptional feelings which Koestler called the *Aha experience* in scientific discoveries (also known as *Eureka experience*), *Ah experience* in art appreciation and *Ha-ha experience* in humor (Koestler, 1970).

In our previous study we empirically investigated the phenomenon of aesthetic experience and attempted to specify its relationship with other dimensions of the subjective judgements of paintings (Polovina & Marković, 2006). Aesthetic experinece was defined by a set of descriptors selected from two lists of attributes. One list was made by a group of participants who gave short descriptions (mostly adjectives) of their aesthetic experience, and the second list was made by a small group of experts (psychologists, philosophers and art historians) who analysed the descriptions of aesthetic experience in samples of relevant literature (art theoretic essays, philosophical aesthetics, art history, psychology of art, and the like). The nine most frequent descriptors were selected: *fascinating, irresistible, unique, eternal, profound, exceptional, universal, unspeakable,* and *I would like to have this painting*. Twenty four representative paintings, taken from the previous study (Radonjić & Marković, 2005; stimuli also used in Marković & Radonjić, 2008), were judged on nine unipolar seven-point scales that were made up of nine descriptors. The factor analysis extracted one principal component: the descriptors *exceptional*, *fascinating* and *irresistible* were most loaded with the obtained factor.

Summarizing the up-mentioned theoretical descriptions of aesthetic experience we will see that the following characteristics figure as crucial and distinctive. The first characteristic refers to the attentive and motivational aspect of aesthetic experience: a person is strongly focused on and fascinated with a particular object or event, losing the awareness of the surrounding environment and even of himself/herself. The second characteristic expresses the semantic and imaginative aspect of aesthetic experience: aesthetic objects and events become parts of virtual reality, transcending their everyday uses and meanings (e.g. we 'see' the bull's head, not the combination of bicycle parts; in theatre we are worried about the characters, not the actors). Finally, the third characteristic of aesthetic experience is affective: a person has an exceptional emotional experience, that is a strong and clear feeling of unity with the object.

Recent neuroimaging studies provide the neural evidences for phenomenologically specified characteristics of aesthetic experience, such as its difference from everyday experience. For example, Cupchik and his collaborators (Cupchik, Vartanian, Crawley, & Mikulis, 2009) found that distinct brain areas were activated when the observers were oriented to the aesthetic or pragmatic aspects of the same paintings. The fMRI data have shown that the pragmatic orientation corresponded to the higher activation of the right

fusiform gyrus (the area associated with face perception and with the perception of some other categories of objects, cf. Martin, Wiggs, Ungerleider, & Haxby, 1996; McCarth, Gore, & Allison, 1997) whereas the aesthetic orientation was associated with higher activation of the left and right insula (areas involved in emotional experience, cf. Paradiso, Johnson, Anderson, O'Leary, Watkins, Ponto, & Hichwa, 1999; Teasdale, Howard, Cox, Ha, Brammer, Williams, & Checkley, 1999; Lane, Reiman, Bradley, Lang, Ahern, Davidson, & Schwartz, 1997) and left lateral pre-frontal cortex (the area which plays a role in the cognitive control and the higher-order self referential processes, cf. Burgess, & Gilbert, 2007). The cingulate cortex can also be considered as a neural structure important for the regulation of the attentional aspect of aesthetic experience (aesthetic fascination as an increased attention) and the coordination of emotional and cognitive processes involved in aesthetic experience (cf. Bush, Luu, & Posner, 2000).

Nadal and his collaborators proposed a tentative three-component model which aim is to put the emotional and cognitive processes involved in aesthetic experience into the same framework (Nadal, Munar, Capo, Rosselio, & Cela-Conde, 2008). The first component is an emotional response. This component has two aspects, (a) representation of the reward value which is associated with pleasantness-unpleasantness of stimuli (orbitofrontal cortex and caudate nucleus), and (b) attentional regulation which is associated with the awareness of the emotional state (anterior cingulate cortex). The second component is the enhancement of early visual processing (occipital, visual cortex), and finally, the third component is decision-making (left dorsolateral prefrontal cortex). A future evaluation of this model can give us better insight into the relationship between the emotional and attentional aspects of aesthetic experience (e.g. the relationship between a hedonic tone and fascination).

Aesthetic experience and hedonic tone

Philosophical aesthetics and art history created the various taxonomies of aesthetic categories in which some of them reflect positive emotions such as beauty, sublime, charming, humor, whereas some are associated with negative emotions such as tragic and even ugly and grotesque. One of the, perhaps, most comprehensive lists of aesthetic categories in western art was made by Umberto Eco (2004). He analysed many aesthetic categories, where some of them are hedonically incompatible: beauty of the harmony and beauty of the monstrous, charming and sublime, erotic beauty and beauty of the machines, magic beauty and restless beauty, and so forth. Recently, he devoted a whole book to the ugliness and aesthetic appeal of deformation, monstrous, grotesque, morbid, horrible and the other kinds of ugliness (Eco, 2007).

Some theoretical models in the psychology of art emphasize that the aesthetic experience is dominantly associated with the positive affective states, emotions and feelings, such as pleasure, happiness, and the like (cf. Leder, Belke, Oeberst, & Augustin, 2004). Different factors were specified

as crucial for inducing these positive states, such as prototypicality of the paintings' content (Martindale & Moore, 1990), ease of the artworks processing (Winkielman & Cacioppo, 2001), and so on. Other authors attempted to specify the specific aesthetic role of negative emotions such as hostile emotions (anger, disgust and contempt), some self-consciousness emotions (shame, guilt, regret, embarrassment) and some cognitive emotions (confusion) (Silvia, 2009; see also Cooper & Silvia, 2009; Silvia & Brown, 2007).

Studies in the field of individual differences have shown that the preference for pleasant or unpleasant artwork was correlated with some personality dimensions. The preference for unpleasant paintings was associated with the high scores of the Sensation Seeking scales (Furnham & Avison, 1997; Rawlings, 2003; Rawlings, Barrantes i Vidal, & Furnham, 2000; Tobacyck, Myers & Bailey, 1981; Zaleski, 1984; Zuckerman, Ulrich, & McLaughlin, 1993). Some findings suggest that the preference for unpleasant (violent) pictures is related to Openness to Experience and two Schizotipy scales, Unusual Experience and Impulsive Nonconformity (Rawlings, 2000, 2003). Generally speaking, these results show that the aesthetic fascination can be focused on artwork with totally opposite hedonic tones: high scorers of Sensation Seeking scales are fascinated with unpleasant, morbid and violent paintings, whereas low scorers are fascinated with pleasant, peaceful and erotic paintings.

Many neuroimaging and pathological studies were made in order to specify the brain areas differentially sensitive to pleasant (beautiful) and unpleasant (ugly) visual artworks (paintings and photographs). The data have shown that the processing of pleasant pictures was associated with the medial orbitofrontal cortex (Aharon, Etcoff, Ariely, Chabris, O'Conor, & Breiter, 2001; Kawabata & Zeki, 2004; Paradiso et al., 1999; Rolls, 2000) and the dorsolateral sites of the prefrontal cortex (Cela-Conde, Marty, Maestu, Ortiz, Munar, Fernandez, Roca, Rossello, & Quesney, 2004; Paradiso et al., 1999), whereas the ventral sites of the right orbitofrontal cortex increased the responses more to aversive than to pleasant stimuli (Kawasaki, Kaufman, Damasio, Damasio, Granner, Bakken, Hori, Howard, & Adolphs, 2001). The other studies have shown that the processing of pleasant pictures was distinguished from neutral pictures by activations in the left cingulate, left preuncus, right and left insula, right inferior frontal gyrus, visual cortex, and left caudate nucleus (cf. Paradiso et al., 1999; Teasdale et al., 1999; Lane et al., 1997; Vartanian & Goel, 2004). The left parietal cortex is active in the comparison beautiful vs neutral pictures (Kawabata & Zeki, 2004).

Aesthetic experience and other emotions and feelings

Most of the previous psychological and fMRI studies were focused on basic hedonic evaluation of aesthetic stimuli (pleasant-unpleasant), but as Silvia (2007) has pointed out, the aesthetic appraisal of art involves a much wider spectrum of specific emotions and feelings. Silvia called these specific emotions

– *aesthetic emotions* (cf. Silvia, 2005), which suggests that they contain certain 'aesthetic quality'. Unfortunately, he does not provide the explicit criteria which help us to make a clear distinction between aesthetic and non-aesthetic emotions (e.g. aesthetic anger vs non-aesthetic anger).

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

Kubovy's concept of *pleasures of the mind* also can help us to understand the specificity and complexity of affective aspect of aesthetic experience (Kubovy, 1999). He differentiates pleasures of the mind from pleasures of the body and basic emotions. Pleasures of the mind and consequently aesthetic experience, are not simple emotions but collections of emotions distributed over time, and they have no distinctive and coherent behavioral expressions and physiological responses typical for simple emotions and pleasures of the body. For example, during the reading of a novel or the watching of a movie the excitement, fear, anger, pleasure and other emotions will subsequently change in respect to the changing of the segments of the story that we are reading or watching (see also Chatman, 1978).

Purpose of the study

The purpose of the present study is to investigate some aspects of aesthetic experience which remained unclear in the existing theories. As we have already mentioned, in aesthetic experience a person is highly interested in and fascinated with an object and that state is followed by a strong *aesthetic feeling*. However, it is not quite clear what the nature of this feeling is. Some authors held that it was a special kind of emotion characterized by sense of unity with aesthetic object, feeling of self-transending, and so on (cf. Cupchik & Winston, 1996; Frijda, 1989; Marković & Radonjić, 2008; Ognjenović, 1997), whereas the other authors defined aesthetic feelings as various emotions induced by the content of an artwork, such as pleasure, anger, confusion, disgust, pride, surprise, and so on (cf. Silvia, 2005, 2007).

If the aesthetic feeling is defined as an extraordinary emotional state (i.e. pleasure of the mind, cf. Kubovy, 1999), the question is how is it associated with other emotions. Some authors identified it with the pleasurable emotions and feelings (cf. Leder, et al., 2004; Martindale & Moore, 1990; Winkielman & Cacioppo, 2001), whereas other authors showed that aesthetic feeling could

be associated with negative (unpleasant) emotions (Furnham & Avison, 1997; Rawlings, 2003; Rawlings, Barrantes i Vidal, & Furnham, 2000; Silvia, 2005, 2007; Tobacyck, Myers & Bailey, 1981; Zaleski, 1984; Zuckerman, Ulrich, & McLaughlin, 1993).

The final open question refers to the relationship between aesthetic experience and other complex emotions and feelings. Kubovy's (1999) concept of the pleasures of the mind and Chatman's (1978) concept of narratives suggested that the aesthetic feeling was derived from the collections of emotions distributed over time. The implication of these concepts is that different combinations of emotions could be induced by the pictorial contents.

This study is concerned with the three above-mentioned questions: (1) is the aesthetic experience independent of other affective states, emotions, and feelings, (2) is the aesthetic experience independent of the affective tone or associated with either pleasurable or aversive emotions, and (3) which structure of single emotions is associated with aesthetic experience.

In order to investigate these questions a factor-analytic study was conducted. The aim of this study was to specify the factorial structure of the judgments on a set of descriptors of aesthetic experience and other emotional qualities. The basic question was whether the descriptors of aesthetic experience would be grouped in the common coherent factor or they would be distributed in two, three or more factors together with other emotional descriptors. The correlational analyses will show the nature of the relationship between aesthetic experience and other emotions. In the following paragraphs the selection of stimuli (i.e. paintings as objects of judgments) and the selection of descriptors (i.e. scales on which the stimuli were judged) will be elaborated in more details.

Preliminary study 1: Selection of paintings

We decided to use the figural and semi-figural paintings as stimuli. These categories of paintings can be defined as more or less realistic (and vice versa stylized) pictorial representations of objects and scenes. For instance, Renaissance paintings are highly realistic (or lowly stylized), whereas Cubist paintings are lowly realistic (or highly stylized). We have chosen this category of aesthetic objects because they were explicitly created to carry both types of information, aesthetic and emotional. Namely, it is easer to judge the specific emotional content of representational than of abstract paintings or other categories of visual objects.

In a previous study (Marković & Radonjić, 2008) the base of 200 figural and 200 semi-figural paintings was created. For the purpose of the present study we randomly extracted 100 paintings (50 from each category) and asked ten participants to select 20 paintings to cover the widest possible spectrum of different styles and motifs (themes). Participants finally selected twenty four paintings as a stimulus set for the main study. The titles of paintings were shown in Appendix 2.

Preliminary study 2: Selection of descriptors

Two groups of descriptors were specified. The first group included nine descriptors taken from the previous study of aesthetic experience: *fascinating, irresistible, unique, eternal, profound, exceptional, universal, unspeakable,* and *I would like to have this painting* (Polovina & Marković, 2006). The second group of descriptors was derived from Plutchik's model of emotions (Plutchik, 1980). In his model Pluchik defined eight primary emotions organized into bipolar pairs: *joy-sadness, trust-disgust, fear-anger* and *surprise-anticipation*, and eight secondary polar emotions: *optimism-dissaproval, love-remorse, submission-contempt* and *awe-aggressiveness*. For the purpose of our study we have transformed the names of emotions into appropriate adjectives with affective meanings, such as *cheerful, sad, trustful, disgusting, scared, angry, surprising, anticipating, optimistic, disapproving, lovable, remorsing, submissive, contempting, despising, awing* and *aggressive.* However, we noticed that this list of affective descriptors is not completely adequate for expressing the emotional content of paintings. For instance, a painting can not be scared, but scary, or if a painting is judged as aggressive, the reaction of a subject can be fear, not aggression, and so on. In order to avoid possible vagueness and misunderstandings, we made a study in which the participants were asked to judge how the affective attributes (adjectives listed above) are good descriptors of the emotional content of paintings. They were also told to add the descriptors of emotions which are not on list, or to remove the inadequate descriptors.

Finally, 22 most frequent affective descriptors were specified: *cheerful, sad, appealing, disgusting, angry, scary, suprising, anticipating, delightful, hateful, awing, erotic, proud, timid, trustful, dissappointed, tragic, humorous, lovely, charming, jealous, pitiful.*

In sum, a set of 31 descriptors was selected (9 descriptors of aesthetic experience and 22 of emotions). All are given in the form of adjectives (except the statement *I would like to have this painting*) and this form was used for the construction of a set of unipolar seven-point scales. There were three reasons why the unipolar scales were used instead of bipolar scales for emotions. First, all scales, including the scales of aesthetic experience and emotions, should be uniform, that is unipolar. Second, there was a difficulty in finding the opposites for some emotions (e.g. jealous). The third, and most important reason for using unipolar scales is that they assume the independence of each emotional quality, including the opposite ones. Namely, the unipolar scales are sensitive to the situations where some opposite emotional qualities are equally (positively) associated with the same pictorial narrative. For instance, different aspects and parts of the same pictorial contents could be judged as scary and angry, appealing and disgusting, and so on. For that reason, the bipolar scales would not be appropriate because they assume the negative correlation between opposite emotions, and consequently, they would not be sensitive for their positive combinations.

Method

Participants: Thirty one undergraduate students of the Department of Psychology, University of Belgrade (18 female and 13 male) participated in the experiment.

Stimuli: Twenty four paintings (see the list of paintings in the paragraph Preliminary study 1).

Instrument: The list of thirty one unipolar seven-point scales was used as an instrument (nine scales represent aesthetic and 22 affective descriptors). The descriptors of aesthetic experience were *fascinating, irresistible, unique, eternal, profound, exceptional, universal, unspeakable,* and *I would like to have this painting.* The descriptors of the emotional content of paintings were *cheerful, sad, appealing, disgusting, angry, scary, suprising, anticipating, delightful, hateful, awing, erotic, proud, timid, trustful, disappointing, tragic, humorous, lovely, charming, jealous, pitiful.* The instrument with a randomized order of scales was shown in Appendix 1.

Procedure: Twenty four paintings were presented to two groups of participants (N1=16, N2=15) with a different randomized order for each group. The stimuli were presented by a LCD projector on the screen. The stimuli were observed from a distance of 3–4 m and the dimensions of their screen projections were 1,5 x 1,5 m. Participants were asked to judge the stimuli on 31 seven-point scales by marking the grade, according to their impressions of the extent of the particular attribute that was expressed. They were told that grade *1* indicates the least, and *7* the gretaest intensity of attribute expression. The time for the judgment of each painting was not limited. When all participants judged the painting on all 31 scales, the slide with the next painting was presented.

RESULTS AND DISCUSSION

The problem of this and many previous similar studies was how to organize the data matrices for the factor analysis (see for instance Marković & Radonjić, 2008). Namely, a factor analysis required a 2-D matrix, whereas we were dealing with a 3-D data structure: Participants x Stimuli x Scales. In order to solve this problem we used the *stringing out* method proposed by Osgood and his collaborators (see Osgood et al., 1975). According to this method, the 3-D matrix was organized into a 2-D matrix by arranging the single stimuli matrices one under the other. The main problem with *stringing out* was the reduction of variance coming from the participants, because the same participants' sample was repeated. However, alternative methods of matrix reduction from 3-D to 2-D had even greater shortcomings. For instance, the compression of participants using mean judgments values to obtain a 2-D matrix (Stimuli x Scales) required a very large number of stimuli (since the number or rows should be at least three times the number of columns). This would be very demanding for participants who would need to judge a large number of paintings. Another possibility would be to use a confirmatory factor analysis; however, the use of this technique would not be economic since it would require a comparison of a great number of factorial structures. Choosing the stringing out method was not ideal, but it served as the best possible solution for the purpose of our study. Having in mind that we were not interested in the individual differences, but in the general factorial structures of the paintings judgments, we could allow the multiplication of the relatively small sample of participants, but not the reduction of paintings or number of scales.

So, the string out data matrix was generated: the matrices for 24 individual paintings were arranged, one under the other. Results of the principal component analysis with the revealed seven factors with Eigen values above one are shown in Table 1.

Table 1: Results of the principal component analysis: factors with the Eigen values and the percents of explained variance.

Factors	Eigen values	Explained variance in %
1	8,42	27,18
2	5,63	18,15
3	1,83	5,91
4	1,67	5,38
5	1,44	4,63
6	1,20	3,88
7	1,02	3,31

Only the first two factors were semantically satisfying to be further interpreted. Having in mind their content (i.e. most loaded scales) we named them Affective Tone (Factor 1) and Aesthetic Experience (Factor 2). These two factors together explained almost half of the entire variance (45,33 %). Other factors explained a small percents of variance, and their contents (most loaded descriptors) were not conceptually coherent. Two extracted factors with percents of explained variance and loading indexes of related scales are shown in Table 2 (a similar internal structure of factors was obtained after the Varimax and Promax rotations).

Table 2: Two extracted factors with the percents of the explained variance and the loadings indexes of the most loaded scales.

Factor 1 AFFECTIVE TONE	27,18 %	Factor 2 AESTHETIC EXPERIENCE	18,15 %
Lovely	.83	Exceptional	.75
Charming	.81	Profound	.75
Cheerful	.74	Unique	.68
Appealing	.73	Awing	.65
Irresistible	.69	Delightful	.58
I would like to have this painting	.63	Fascinating	.57
Scary	-.74	Eternal	.57
Disgusting	-.72	Unspeakable	.56
Hateful	-.70		
Tragic	-.69		
Sad	-.66		
Pitiful	-.65		
Disappointing	-.61		
Angry	-.53		

Factor 1, Affective Tone, was bipolar in nature. Descriptors such as *lovely*, *charming*, *cheerful* and *appealing* were on its positive pole, whereas *scary*, *disgusting*, *hateful* and *tragic* were on the negative pole. In other words, the factor analysis grouped almost all affective descriptors in a single bipolar dimension regardless of their qualitative differences. For instance, *scary*, *tragic* and *disappointing* were clearly different affective qualities, but all were associated together in the negative pole of the factor Affective Tone.

Factor 2, Aesthetic Experience, encompassed almost all descriptors of aesthetic experience specified in the study by Polovina and Marković (2006). Only two descriptors, *irresistible* and *I would like to have this painting*, have "transferred" into a positive pole of Affective Tone. This transfer could be explained by the fact that two descriptors had a strong positive affective meaning and express the attractiveness of paintings. On the other hand, the new descriptor, *awing*, has emerged in the factor Aesthetic Experience. The reason for this, perhaps, lies in the fact that *awe* was a complex emotion which includes both positive and negative affective meanings (adoration and fear) expressing an exceptional subject-object relationship.

In order to specify the extent in which the Affective Tone and Aesthetic Experience were independent factors, two additional analyses were made: correlation between the factors obtained after the Promax rotation. Promax rotation revealed low correlation between the factors Affective Tone and Aesthetic Experience, $r = .11$, which means that these factors are highly independent.

The second measure of inter-factor correlation was Pearson's coefficient. For that purpose two variables were created. First variable was Affective Tone which has been defined as an average value of the three most saturated positive scales: *lovely*, *charming* and *cheerful*, and three most saturated negative scales: *scary*, *disgusting* and *hateful* (the values of negative scales were transformed from 1–7 to 7–1 because they were in a negative correlation with the factor). The second variable was Aesthetic Experience which has been defined as the average value of six most saturated scales: *exceptional*, *profound*, *unique*, *awing*, *delightful* and *fascinating*. The averaged judgments and the standard deviations of Affective Tone and Aesthetic Experience for 24 paintings are shown in Appendix 2. Pearson's coefficient has shown no significant correlation between Affective Tone and Aesthetic Experience, $r = .14$, indicating independence of these two variables.

CONCLUSION

This paper was concerned with the phenomenon of aesthetic experience and its relationship with other emotional qualities judged in paintings. Theoretically, aesthetic experience was defined as an exceptional state of mind in which a

person is focused on a particular object, transcending its everyday uses and meanings and losing the awareness of surroundings and even of himself/herself; in this state a person can have an exceptional emotional experience, that is a feeling of unity with the object (cf. Cupchik & Winston, 1996; Frijda, 1989; Ognjenović, 1997). In a previous factor-analytic study aesthetic experience was empirically specified as a set of descriptors such as *exceptional*, *fascinating*, and so on (Polovina & Marković, 2006). This set of descriptors reflects all relevant characteristics listed in various theoretical definitions of aesthetic experience (e.g. fascination with an object, an exceptional status of the object in mind, etc). One of the implications of the mentioned definitions was that the aesthetic experience could be followed by a wide spectrum of other emotions including both pleasant and unpleasant ones. Namely, both categories of objects, pleasant ones (e.g. cute, beautiful, erotic, etc.) and unpleasant ones (e.g. horrible, tragic, obscure, etc.) could be equally fascinating and judged as exceptional.

In order to investigate the relationship between aesthetic experience and other emotions the principle component analysis of painting judgments on a set of aesthetic and affective descriptors was used. Two large factors, Affective Tone and Aesthetic Experience, were obtained.

The results of factor analysis have shown three things. First, the aesthetic experience is specified as a special kind of emotion which is independent of other emotions and feelings. As the results indicated, this aesthetic feeling is characterized by a person's *fascination* and a feeling of an *exceptional* and *profound* relationship with an object (painting).

The second, factor analysis and additional analyses indicated a low and statistically nonsignificant correlation between the paintings judgments on two factors. In other words, these findings suggested that aesthetic experience is not reducible to pleasure or affective attraction, but it can be associated equally with both pleasant (attractive) and unpleasant (aversive) paintings.

Finally, the third finding is that all affective descriptors were grouped into a single bipolar factor. Descriptors such as *lovely*, *charming*, *cheerful* and *appealing* were on the positive pole of this factor, while *scary*, *disgusting*, *hateful* and *tragic* were on its negative pole. In other words, it seems that the basic hedonic dimension of emotions (pleasure-aversion) overruled their specific characteristics. For instance, similarity between cuteness and eroticism (positive hedonic tone) is stronger than their qualitative differences (e.g. protective activity associated with cuteness and sexual behavior associated with eroticism). The same thing is with emotions which have a negative hedonic tone: various emotions such as sadness, disgust and fear are grouped together because they are primarily experienced as unpleasant and associated with basically aversive and avoidance behavior. One of the reasons why we didn't specify more specific affective factors could be the small number of descriptors, where each emotion and feeling was represented with only one descriptor. In some future studies

designed to map "affective space" in better resolution and aimed to specify more coherent affective factors (e.g. factors of sadness, fear, joy etc.) each emotional quality should be represented with several descriptors (e.g. sadness with sad, sorry, distressed, gloomy, hurting etc.).

The present study gave us a better insight into the relationship between aesthetic experience and other affective qualities experienced in paintings. However, it opened some new questions which should be the subject of further investigations. We will mention three of them. First, we specified only a general relationship between aesthetic experience and the elementary affective tone (hedonic values of paintings), while the more complex relationship between aesthetic experience and specific emotions or collections of emotions remained unexplored and unclear. As a starting point for the study of this fine relationship can be Kubovy's (1999) idea that the pleasures of the mind, including the aesthetic experience as well, are derived from the sequences of emotions distributed over time.

The second opened question refers to the generalizability of the results obtained in one category of visual arts, that is representational (figural and semi-figural) paintings. We believe that aesthetic experience is independent of the hedonic value regardless of the kind of art (i.e. whether the object of experience is a painting, sculpture, music, literature, dance, film, etc). Some studies support the idea that in different kinds of art lie some invariants (e.g. similar narrative structures are identified in drama and music, cf. Maus, 1997), but systematic researches still have to be done in order to obtain comprehensive and satisfying empirical answer on this question.

Finally, the third question addresses the problem of the aesthetic stimulus as well, but in a more general sense. Namely, we defined aesthetic experience as a fascination with not only artistic, but any natural and man-made object. Further studies have to specify two things referring to this issue. Firstly, they have to specify the invariants which bound together diverse sorts of artistic and non-artistic aesthetic objects, scenes and events. Secondly, further studies have to specify the crucial difference, if it exists at all, in the experience of artistic and non-artistic aesthetic objects. For instance, some authors believe that the specific knowledge of explicit and hidden narrative layers is necessary for the understanding and the appraisal of artwork (cf. Gombrich, 1969; Silvia, 2005), whereas in the case of non-artistic objects (e.g. natural scenes) the role of knowledge is very reduced and minimized.

Having in mind all constraints of the present study, we may conclude that it can be a useful frame for designing a wider program of investigation of aesthetic experience. Some domains of this program were already delineated: (a) the nature of aesthetic experience (an exceptional state of mind and its relationship with other similar states), (b) the relationship between aesthetic experience and aesthetic preference (independence of pleasure and beauty), (c) the role of other

emotions or collections of emotions in generating aesthetic experience (e.g. underlying narrative structures), and (d) the objects of aesthetic fascination and corresponding cognitive processes which transpose non-aesthetic things in virtual aesthetic reality.

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Appendix 1

Instrument used in the study: 31 seven-point scales.

1	2	3	4	5	6	7	Fascinating
1	2	3	4	5	6	7	Lovely
1	2	3	4	5	6	7	Trustful
1	2	3	4	5	6	7	Cheerful
1	2	3	4	5	6	7	Surprising
1	2	3	4	5	6	7	Scary
1	2	3	4	5	6	7	Eternal
1	2	3	4	5	6	7	Erotic
1	2	3	4	5	6	7	Universal
1	2	3	4	5	6	7	Proud
1	2	3	4	5	6	7	Disgusting
1	2	3	4	5	6	7	Anticipating
1	2	3	4	5	6	7	Profound
1	2	3	4	5	6	7	Charming
1	2	3	4	5	6	7	Humorous
1	2	3	4	5	6	7	Irresistible
1	2	3	4	5	6	7	Angry
1	2	3	4	5	6	7	Delightful
1	2	3	4	5	6	7	Sad
1	2	3	4	5	6	7	Unique
1	2	3	4	5	6	7	Timid
1	2	3	4	5	6	7	Hateful
1	2	3	4	5	6	7	Exceptional
1	2	3	4	5	6	7	Awing
1	2	3	4	5	6	7	Tragic
1	2	3	4	5	6	7	Unspeakable
1	2	3	4	5	6	7	Disappointing
1	2	3	4	5	6	7	Jealous
1	2	3	4	5	6	7	I would like to have this painting
1	2	3	4	5	6	7	Pitiful
1	2	3	4	5	6	7	Appealing

Appendix 2

The averaged judgments (M) and standard deviations (SD) of the Affective Tone and Aesthetic Experience for 24 paintings. The measure of the Affective Tone was obtained by averaging across three positive scales *lovely*, *charming* and *cheerful* and three negative scales *scary*, *disgusting* and *hateful* (the values for these scales were recalculated from 1–7 to 7–1). The measure of Aesthetic Experience was calculated as an average value of six scales: *exceptional*, *profound*, *unique*, *awing*, *delightful* and *fascinating*.

Paintings		Affective tone		Aesthetic experience	
		M	SD	M	SD
1 –	Henri Matisse: *The joy of life*	4.34	1.45	4.00	1.34
2 –	Jacques-Louis David: *Consecration of the Emperor Napoleon I and coronation of the Empress Josephine* (detail)	3.11	1.66	4.21	0.78
3 –	Pablo Picasso: *Celestina*	1.39	0.34	3.66	1.89
4 –	Georges de La Tour: *The fortune teller*	2.03	0.98	2.97	1.59
5 –	Camille Pissarro: *The garden at Pontoise*	5.32	1.30	4.21	0.91
6 –	Vincent Ko: *Still life with eggs in wire basket*	2.48	1.15	2.39	0.77
7 –	Peter Rubens: *Bacchus*	2.29	1.50	3.29	1.86
8 –	Pablo Picasso: *Three musicians*	4.00	1.73	3.95	0.95
9 –	Artemisia Gentileschi: *Judith beheading Holofernes*	1.66	0.18	3.73	2.05
10 –	Egon Schiele: *Scornful woman*	1.66	1.05	3.16	1.69
11 –	Pierre-Auguste Renoir: *On the terrace*	4.37	1.59	4.10	0.18
12 –	Edgar Degas: *In a cafe (The absinthe drinker)*	2.06	0.96	4.03	1.21
13 –	Paul Gauguin: *Woman holding a fruit*	3.79	1.96	3.81	1.22
14 –	Francisco Goya: *The third of may 1808.*	1.52	0.18	3.56	2.21
15 –	Sir John Everett Millais: *The bridesmaid*	2.69	1.43	3.92	1.16
16 –	Albrecht Durer: *The man of sorrows*	1.35	0.25	3.97	1.62
17 –	Paul Klee: *1914.*	3.85	1.38	3.32	0.70
18 –	Edvard Munch: *Jealous*	2.05	0.96	3.73	1.56
19 –	Lidia Dinner: *Still life carnations*	4.56	1.83	3.42	1.22
20 –	Theodore Gericault: *Severed heads*	1.19	0.12	3.85	1.80
21 –	Antoine-Jean Gros: *Napoleon at Arcola*	2.71	1.03	3.97	0.71
22 –	Gustav Klimt: *Danae*	2.95	1.09	3.98	1.21
23 –	Henri Rousseau: *Two monkeys in the jungle*	4.35	0.96	2.94	0.30
24 –	Giorgio de Chirico: *La commedia e la tragedia*	2.79	1.15	4.60	1.06