



Research article

INDIVIDUAL FEATURES OF “OPTIMISTIC – PESSIMISTIC” DIMENSION TO SHAPE AND SYMMETRY OF VISUAL STIMULI

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Abstract

Any relationship of psychological attitudes, personality traits, and individual differences to aesthetic preferences enriches our understanding of the psychological effects of the environment and the developing society. Knowing what shapes resonate with different personality traits can promote community art, inspire specific ideas, and target individual members of a group. The essence of individual aesthetic preferences can be seen as the concept of creating a common environment that appeals to all people, and not to provide pleasure and comfort to individual representatives and cause dislike and negative effect on all others.

Key words: *personality differences, individual aesthetic response, shape, symmetry*

1. Introduction

In the last century, researchers primarily investigated the relationship between individual personality traits and specific aesthetic and art preferences (Child 1965; Eysenck, 1940; Rosenbluh, Owen, & Pohler, 1972; Tobacyck, Myers, & Bailey, 1979; Yordanova, 2016). Part of these studies are focused on the study of aesthetic preferences in relation to the basic visual characteristics of different geometric figures (Eysenck, 1972; Rawlings, 2003; Yordanova, 2019) or line drawings of different complexity (Zuckerman, Bone, Neary, Magelsdorff, & Brustman, 1972).

Contemporary social scientists believe that evolutionary psychology and cognitive science can serve to build common ground (Dutton, 2009). There are several main areas and lines of experimental research that focus on aesthetic preferences – experimental aesthetics and the psychology of art. These fields are interdisciplinary and draw on knowledge from other related disciplines and branches of psychology. Scientists examining the perceptual processing of visual stimuli together with computer specialists have long been trying to find a possibility for objective evaluation of images and are mainly concerned with the quantification of the perceived image in its original version (Ke, Tang & Jing, 2006). Other studies use the influence of the meaning of visual stimuli to infer the content of the image and relate it partially or fully to the semantics (Dutton, 2009). Researchers have drawn ideas from both approaches to tackle even more challenging problems, such as relating works of art to the aesthetic preferences and emotions that images evoke in people (Valenti, Sebe, & Gevers, 2007). Since emotions and aesthetic preferences also carry semantics, it is no surprise that research in these areas is highly

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intertwined because one must understand human subjectivity and the context in which the emotion or aesthetic is perceived.

The emotional and aesthetic impact of art and visual stimuli are also related to the affective state of the viewer, who, according to emotional equivalence theory, perceives his environment in a similar way based on his personal emotional state. Emotional attunement can increase a person's sensitivity to accept information that is consistent with one's own mood or to reject it when it is inconsistent (Valenti, Jaimes, & Sebe, 2010).

Context plays an important role in understanding the semantic image. Context within images is explored as: spatial context (using the spatial arrangement of objects), temporal context (using information about the time and date when the images were taken), geographic context (using information about the geographic location of the images) (Kennedy & Naaman, 2008) and social context (using information about the person's social circle or social relationship reflected in the images) (Gallagher & Chen, 2009). People can associate certain emotions with photos taken on special occasions or for special people in their lives. Determining the extent to which these factors influence the aesthetic or emotional value of images will be the starting point of large-scale research, because the nature of the data used for a particular problem can greatly influence aesthetic preferences or emotional models (Zunja Ke, Tang & Jing, 2006).

2. Program of the study

The purpose of the presented research is to establish preferences of persons with a pronounced optimistic or pessimistic orientation towards the shape and symmetry characteristics of computer-generated images.

It is assumed that personality in the context of the optimism- pessimism dimension demonstrates specific aesthetic preferences for shape and symmetry.

The questionnaire for assessing optimism and negative dimensions of Radoslavova and Velichkov (2005) was used for the present study.

The construct "optimism" was introduced into scientific discourse by Scheier and Carver, (1992), who defined it as a generalized expectation of obtaining positive results and a predominance of positive events in a person's life. In the study of variable personality, the authors use the terms "dispositional" and "situational optimism". Dispositional optimism is an expectation that good things will be abundant and bad things will be scarce. Explanatory style is a tendency to use one or another type of attributions, distinguished by their stability, scope and personalization. According to this view, optimists make stable, global, and internal attributions for positive events and unstable, specific, external attributions for negative events, whereas pessimists demonstrate the opposite attributions.

3. Results

The use of multiattribute analysis makes it possible to understand the relative importance of all aesthetic dimensions and combinations between them, and thus to interpret the overall aesthetic evaluation to the presented visual stimuli. It is appropriate to emphasize that the results of the multiattribute analysis provide an independent external standard regarding personal aesthetic preferences to the displayed visual stimuli.

Table No. 1. Preferences for shape and symmetry in persons with an optimistic orientation

factor	factorial level	utility estimates	standard error	relative importance
shape	triangle	1.568	0.178	32.230
	circle	4.227	0.143	
	hexagon	-2.659	0.178	
vertical symmetry	left	1.986	0.143	13.471
	center	1.094	0.178	
	right	-0.892	0.178	
horizontal symmetry	above middle	2.631	0.143	16.555
	environment	1.725	0.178	
	below middle	-0.906	0.178	
diagonal symmetry	left \ right	4.032	0.117	37.744
	right / left	-4.032	0.117	
	constant	7.198	0.147	
correlation coefficient		value	significance level	
Pearson's R		0.903	0.001	
Kendall's tau		0.889	0.001	
Kendall's tau Holdouts		1.000	0.018	

The results of the conjoint analysis to determine the aesthetic preferences for shape and symmetry in individuals with an optimistic orientation found clear preferences. According to the shape, the most preferred is a "circle" shape, followed by a "triangle" shape. The least preferred shape is a "hexagon". The relative importance of the "shape" factor is 32.230. Depending on the vertical symmetry, the "left" position is most preferred, followed by the "center" position. The least preferred position is "right". The relative importance of the "vertical symmetry" factor is 13.471. In terms of horizontal symmetry, the "above the middle" position is the most preferred, followed by the "middle" position. The least preferred position is "below the middle". The relative importance of the "horizontal symmetry" factor is 16.555. Depending on the diagonal symmetry, the "upper left corner \ lower right corner" position is more preferred, as opposed to the "upper right corner / lower left corner" position. The relative importance of the "diagonal symmetry" factor is 37.744.

Table No. 1 presents the results of the conjoint analysis for determining the aesthetic preferences for shape and symmetry in persons with a pessimistic orientation. Clear preferences are established. According to the shape, the "hexagon" shape is the most preferred, followed by the "triangle" shape. The least preferred is the "circle" shape. The relative importance of the factor "shape" is 16.387.

Table No. 2. Preferences for shape and symmetry in persons with a pessimistic orientation

factor	factorial level	utility estimates	standard error	relative importance
shape	triangle	1.428	0.217	16.387
	circle	-0.956	0.217	
	hexagon	2.384	0.166	
vertical symmetry	left	1.004	0.217	23.699
	center	2.917	0.166	
	right	-1.913	0.217	
horizontal symmetry	above middle	-1.425	0.217	27.737
	environment	2.803	0.217	
	below middle	4.228	0.166	
diagonal symmetry	left \ right	-3.279	0.129	32.177
	right / left	3.279	0.129	
	constant	7.264	0.133	
correlation coefficient		value	significance level	
Pearson's R		0.918	0.003	
Kendall's tau		0.902	0.002	
Kendall's tau Holdouts		1.000	0.018	

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Depending on the vertical symmetry, the "center" position is most preferred, followed by the "left" position. The least preferred position is "right". The relative importance of the "vertical symmetry" factor is 23.699. In terms of horizontal symmetry, the most preferred position is "below the middle", followed by the "middle" position. The least preferred position is "above the middle". The relative importance of the "horizontal symmetry" factor is 27.737. Depending on the diagonal symmetry, the "upper right corner / lower left corner" position is more preferred, in contrast to the "upper left corner \ lower right corner" position. The relative importance of the "diagonal symmetry" factor is 32.177.

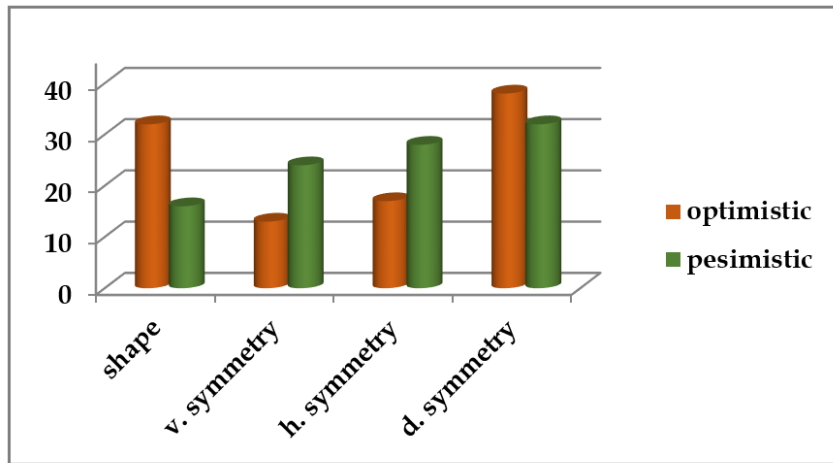


Chart No. 1. Percentage distribution of factor importance by subgroups

Regarding the importance of the shape factor, it is found that it is higher in individuals with an optimistic orientation 32%, compared to that in individuals with a pessimistic orientation 16%. The significance of the vertical symmetry factor is higher in individuals with a pessimistic orientation 24%, compared to that in individuals with an optimistic orientation 13%. The significance of the third factor horizontal symmetry is higher in persons with a pessimistic orientation 28%, compared to that in individuals with an optimistic orientation 17%. Regarding the importance of the diagonal symmetry factor, it is found that it is higher in individuals with an optimistic orientation 38%, compared to that in individuals with a pessimistic orientation 32%.

Table No. 3. Summarized results of utility evaluations

factor	factorial level	utility estimates	standard error	relative importance
shape	triangle	2.424	0.150	24.308
	circle	3.749	0.136	
	hexagon	-1.325	0.150	
vertical symmetry	left	1.329	0.150	18.585
	center	2.604	0.136	
	right	-1.275	0.150	
horizontal symmetry	above middle	2.169	0.150	22.146
	below middle	-1.227	0.150	
diagonal symmetry	left \ right	-3.648	0.107	34.961
	right / left	3.648	0.107	
	constant	7.231	0.142	
correlation coefficient		value	significance level	
Pearson's R		0.911	0.002	
Kendall's tau		0.896	0.001	
Kendall's tau Holdouts		1.000	0.018	

The summarized results of the conjoint analysis to determine the aesthetic preferences for shape and symmetry, in the context of the optimism-pessimism dimension, establish clear preferences. According to the shape, the most preferred is a "circle" shape, followed by a "triangle" shape. The least preferred shape is a "hexagon". The relative importance of the "shape" factor is 24.308. Depending on the vertical symmetry, the "center" position is most preferred, followed by the "left" position. The least preferred position is "right". The relative importance of the "vertical symmetry" factor is 18.585. In terms of horizontal symmetry, the "middle" position is most preferred, followed by the "above middle" position. The least preferred position is "below the middle". The relative importance of the "horizontal symmetry" factor is 22.146. Depending on the diagonal symmetry, the "upper right corner / lower left corner" position is more preferred, in contrast to the "upper left corner \ lower right corner" position. The relative importance of the "diagonal symmetry" factor is 34.961.

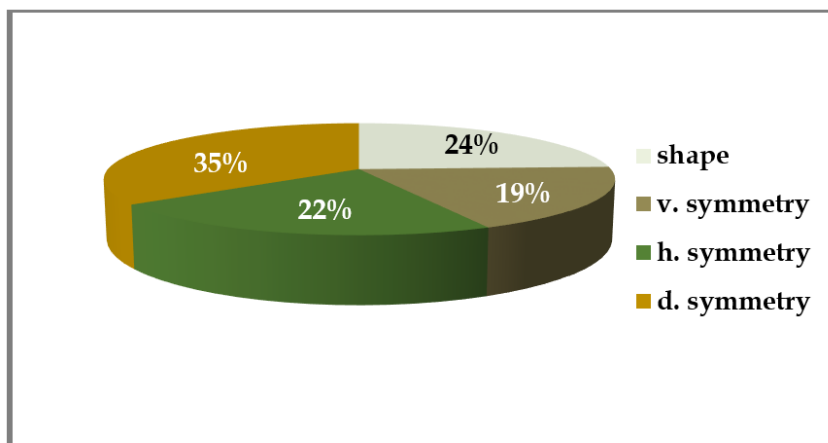


Chart No. 2. Summarized results of factor significance

The percentage distribution of the summary results of the significance of the factors in relation to the aesthetic preferences for shape and symmetry along the dimension optimism-pessimism illustrates the following features. The "diagonal symmetry" factor is the most significant at 35%, followed by the

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"shape" factor at 24%. The degree of significance of the factor "horizontal symmetry" is lower, 22%, and the factor "vertical symmetry" is the least determining of aesthetic preferences, 19%.

4. Conclusion

Indeed, the proposed models do not claim to be fundamental or absolute in terms of aesthetic preferences, but they will help to advance the psychology of art, and one of the long-term goals is to seek solutions that apply in the most general context. Of primary interest is the correct interpretation of preference for visual stimuli for several reasons. First, the degree of realism is a criterion that includes all works of art. For example, two-dimensional and three-dimensional works of art, in different cultures, differ in the degree of realism. Second, preference may reflect the primary of many possible emotional responses to the creative product. Finally, a person is more likely to engage and motivate their behavior when the focus is on a preferred activity.

Like many other constructs that are involved in understanding personality development in general and especially in the context of aspects of aesthetics, preferences appear to be quite complex, with little consistent information regarding the possibility of explaining individual differences. Preferences may be personal idiosyncratic phenomena unrelated to personality development. Perhaps because individual differences are a consequence of past cognitive experiences, emotional experiences, socialization, cultural values, and maturation. More specifically, the influence of multiple variables symbolizes the problem of understanding the sources of individual aesthetic preferences.

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