

# AMBIGUITY AND AESTHETIC RECEPTION OF PIROT CARPET PATTERNS

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**Abstract:** The research tests the relation between the ambiguity and aesthetic impression of visual objects. As stimuli, standard forms of traditional carpet patterns were used. The subjects were students of visual arts from Faculty of Fine Arts in Belgrade. In the first stage, the research tested the associative meaning of a sample of patterns. It has been shown that each pattern evoked a high number of associations (average 32 per pattern). According to expectations, patterns are seen as non-discursive symbols with an open meaning. For classification of patterns, two criteria for measuring ambiguity were applied – flexibility (number of non-repeated words) and fluency (total number of associations). That way, patterns were classified in two groups, patterns with low and patterns with high ambiguity. In the second stage of the research, patterns were evaluated by the next group of students using the semantic differential as an instrument. It contained 12 seven-grade scales which measured fine components of aesthetic appreciation. The results show that ambiguity has been related to 5 different scales, depending on the criterion (flexibility or fluency). Patterns with high ambiguity were experienced as unusual regardless of the criterion applied. If flexibility is the used criterion, patterns are experienced also as interesting and salient. If fluency is used, patterns are experienced as asymmetric and dynamic. Results show that patterns are highly valued in general. Ambiguity as a component of aesthetic appreciation is related to the scale usual – unusual, as a stable predictor of ambiguity, and with asymmetry, dynamic, interest and salience as components dependent on the classification criterion.

**Keywords:** ambiguity, aesthetic evaluation, Pirot carpets

## AMBIGUITY AND AESTHETIC PREFERENCE OF VISUAL OBJECTS

Art experience and aesthetic evaluation are often connected with the feelings of confusion, ambivalence and lack of clear meaning. Creative confusion induced by the works of art makes this type of experience different from standard perceptive processes. Together with complexity and novelty, many researchers have identi-

fied the importance of ambiguity and non-discursive meaning of symbols in art as well as in communication in general. Compared with the discursive and denotative meaning of symbols in use in positive science, art symbols are often experienced as open-ended, not fully defined, many-leveled, blurred and polymorphic. Some authors recognize this as one of the most important characteristics of art experience<sup>1</sup> because that gives space for individual and direct experience of art by the observers.

In current literature, ambiguity and undefined characteristic of art symbols are seen as mainly related to modern art,<sup>2</sup> but if observed in a broader historical context, they become visible as general characteristics of art during its history. Various art movements, styles and authors had different attitudes toward ambiguity, some supporting this type of communication tool in concordance with the free language of art, some other strictly rejecting the possibility of breaking the rules of tradition and canonization.

Gestalt school in psychology has been the one which developed empirical theories of the fundamental components of human perception, with special interest in the visual perception of art and fine components of art reception. The problem of form and content, traditionally present in psychology, got new interpretations and solutions within gestalt school. Authors such as Koehler, Koffka and Wertheimer tested the dominance of the form in perception; they investigated the tension and laws of interaction between elements in the visual field, such as contrast, size, proportion, constellation or contour.

According to Arnheim,<sup>3</sup> ambivalent visual objects (in art as well as in perceptive processes) comprise interiorized patterns, perceptive algorithms and models that do not produce clear perceptive recognition. For example, reception of paintings from the period of cubism includes recognition of every-day objects presented in fragments, as simultaneously observed from many different points of view. That way, the simple recognition becomes difficult and observer is invited to form his/her own impression, restructuring the process of perception. Surrealist paintings present everyday objects as deformed and placed in imaginative and unexpected context, which gives the observer a possibility to jump from usual perception to new imaginative process. Recognition of visual objects includes, as it has been proved by researchers, not only the process of perception, but also the semantic, emotional and aesthetic aspects of experience.

From psychological point of view, there are basically two types of ambiguity, perceptual and cognitive. Perceptual ambiguity happens when a visual object can be identified in two or more possible ways and the observer is confused. It is based on visual confusion between the figure and background. Cognitive ambiguity appears when two or more interpretations become possible simultaneously, not because of lack of clear perception, identification or classification, but because of active search for artistic meaning.

Cognitive ambiguity appears when the stable perceptive processes produce one clear visual experience but with many possible meanings and interpretations.<sup>4</sup> During this process the meaning of sign, the objects of painting and symbols are not completely clear. From the point of view of gestalt theory, art is not a representation

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1 S. Zeki. *Inner vision: an exploration of art and the brain*, Oxford, 2003.

H. Kreidler et S. Kreidler, *Psychology of the Arts*, Durham, 1972.

2 G. Minissale, *The Psychology of Contemporary Art*, Cambridge, 2013.

3 R. Arnheim, *Towards a Psychology of Art*, Berkeley and Los Angeles, 1966.

4 M. Jakesch, H. Leder et M. Forster, "Image Ambiguity and Fluency", in: *PLoS ONE* 8(9), 2013.

of physical world or production of forms, focus is on the expressive aspect of art. Expression is based on cognitive communication, which is seen as an essence of art experience. Two fields in communication – physical and internal (cognitive) are interrelated but not identical, corresponding to each other. The laws of good forms are not only based on the formal characteristics of a visual object but are also internal cognitive laws of identification and ascribing the meaning to the perceptual field.

At the same time, Pirot carpet patterns appear as unknown, new symbols for the observers. As it was proved in previous research, the forms of symbols are not accidental, there are systematic factors influencing creation of visual symbols.<sup>5</sup> According to the previous results, the aesthetic response is sensitive to transformation of unknown symbols. Inversion of objects appeared as a powerful factor of appreciation compared with the complexity of objects. The authentic (original) ideograms were seen as more beautiful than their upside down inverted versions but there were no differences between the original and left-right inverted forms. It could be assumed that, compared with the upside-down, the left-right inversion is a more subtle and less invasive visual transformation that cannot be perceived by the observers and does not affect the general aesthetic impression.

The focus of our research is on cognitive ambiguity. Cognitive ambiguity is based on perception of broader contexts and includes interpretation and the semantic aspect of perceptive processes. It could be said that cognitive ambiguity activates more complex integrative perceptive processes.

Some authors suggest the definition of ambiguity seeing it as a measurable scientific phenomenon,<sup>6</sup> while others offer descriptions of many different forms of ambiguity. As a result, the terms related with ambiguity are often openness,<sup>7</sup> polysemy,<sup>8</sup> ambivalence, mystery, uncertainty,<sup>9</sup> etc. Many researchers agree that art experience allows many different interpretations simultaneously,<sup>10</sup> and that every observer creates her/his own implicit meaning of ambiguity.<sup>11</sup> One of the founders of neuroaesthetics, Zeki,<sup>12</sup> agrees that reception of art always integrates many possible interpretations. This type of research was mainly focused on cognitive perception and interpretation of visual objects.<sup>13</sup>

In spite of the fact that many authors see ambiguity as a formal characteristic of art work, it is obvious that it must be observed as a psychological process which is the result of many interacting factors. Interaction between an art object and the

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5 B. Pejić, B. Škorc et J. Hrnčić, "Aesthetic reception of unfamiliar symbols", in: *Proceedings of the XXV scientific conference Empirical studies in psychology*, 2019, 101–103.

6 C. Bode, "The Aesthetics of Ambiguity", in: *Actas del XII Congreso Nacional de la Asociación Española de Estudios Anglo-Norte Americanos*, Alicante, 1988.  
W. Empson, *Seven Types of Ambiguity*, New York, 1953, 258.

7 U. Eco, *La struttura assente. Introduzione alla ricerca semiologica*, Milano, 1968.

8 D. Gamboni, *Potential Images: Ambiguity and Indeterminacy in Modern Art*, Chicago, 2002, 304.

9 V. Krieger, "At war with the obvious. Kulturen der Ambiguität. Historische, psychologische und ästhetische Dimensionen der Mehrdeutigen", in: *Ambiguität und Kunst. Typen und Funktionen eines ästhetischen Paradigmas*, eds. V. Krieger et R. Mader, Köln, Weimar, Wien, 2010, 13–52.

10 U. Eco, *The Role of the Reader: Explorations in the semiotics of Texts*, Hutchinson Educational, 1979, 273.

11 E. H. Gombrich, *Art and Illusion*, London, 1968, 388.

12 S. Zeki, "The Neurology of Ambiguity", in: *Consciousness and Cognition*, 13(1), 2004, 173–96.

13 C. Muth, *Insights into the unstable. Dynamics in perception and appreciation of ambiguous and indeterminate art*, (Doctoral Dissertation), Bamberg, 2015.

observer depends upon many factors such as the information available and the context of interaction.<sup>14</sup> Ambiguity opens a possibility for many different interpretations. Some studies identify positive correlation between novelty and ambiguity as components of art reception.<sup>15</sup>

In semiotic approach, meaning is observed as a relation between the sign and the denoted. Meaning is the content related to the sign or symbol. Eco believed that too much ambiguity as well as no ambiguity at all made paintings less interesting.<sup>16</sup> As a representative of semiotic approach to art, Eco suggests ambiguity as the most important component of the language of art and art symbols. Non-discursive symbols that appear in art works, always contain a certain level of uncertainty, and the “open meaning” gives space for individual interpretation. In art work, the tension between the opposites of being fully defined and not defined at all must be moderate, placed within a middle level. Extremes negatively affect aesthetic impression.

The level of clarity/ambiguity of a visual object is important for the process of art reception, but many studies showed different results. According to Fechner’s rule of “aesthetic means”, there is an optimal level of tension between the opposites necessary for the aesthetic appreciation. The highest aesthetic values are achieved in some middle zone between the extremes. Too simple or too complex objects are not recognized as beautiful. In his work, Fechner defined the rules of good proportions and preferable interrelation between the formal characteristic of visual objects and their aesthetic values.

In accordance with that, a century later, Berlyne’s model of reverted U function showed that aesthetic experience requires moderate, middle level tension between the elements of the perceptual field. In his research, Berlyne<sup>17</sup> combined physiological and psychological components of aesthetic experience. Measuring the verbal reports of subjects, their EEG activity, preferences and aesthetic decisions, he identified neural components of art impression, linking them with the neural arousal. Art impression is seen as a change of the arousal. The main characteristic of art experience is that its effects are opposite to boredom, and the collative variables that are active in this process are: novelty, complexity, surprise and ambiguity.

In this research we will focus on ambiguity and will analyze interrelations between the levels of ambiguity of the objects and the fine components of aesthetic response.

Some authors stress that art impression is always ambiguous,<sup>18</sup> which is crucial for aesthetic experience. In Jakesch et Leder’s<sup>19</sup> research, the focus was on the optimal level of explanations given to the observers. The author varied the quantity of infor-

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14 W. Gaver, J. Beaver et S. Benford, “Ambiguity as a Resource for Design”, in: *Chi Letters*, 5 (1), 2003, 233–237.

15 D. E. Berlyne, *Aesthetics and Psychobiology*, New York, 1971.

T. Jacobsen, “Bridging the Arts and Sciences: A Framework for the Psychology of Aesthetics”, in: *Leonardo* 39 (2), 2006, 155–62.

C. Muth, V. M. Hesslinger et C. C. Carbon, “The Appeal of Challenge in the Perception of Art: How Ambiguity, Solvability of Ambiguity, and the Opportunity for Insight Affect Appreciation”, in: *Psychology of Aesthetics Creativity and the Arts*, 9(3), 2015, 206–216.

16 U. Eco, *The Open Work*, Harvard University Press, Cambridge Massachusetts, 1989, 285.

17 Berlyne (ed.) *Studies in the New Experimental Aesthetics: Steps toward an objective psychology of aesthetic appreciation*, Washington, 1974.

18 U. Eco, *La struttura assente. Introduzione alla ricerca semiologica*, Milano, 1968.

19 M. Jakesch et H. Leder, “Finding Meaning in Art: Preferred Levels of Ambiguity in Art Appreciation”, in: *The Quarterly Journal of Experimental Psychology*, 62(11), 2009, 2105–2112.

mation given to the observers. The author introduced the art works to the audience with different explanations, some were congruent with the work of art; some were incompatible and completely unrelated to the work of art. Results showed that the most preferable paintings were those which were connected with the modest level of ambiguity of explanations. Strictly and clearly explained facts about the painting, as well as totally unrelated explanations both negatively affected the aesthetic impression. Here we can recognize Fechner's rule again; the aesthetic response is the highest if experimental variables fall somewhere between the extremes.

At the same time, many researchers have proved that the sample of audience is what matters. Most of the findings are related to a standard group of observers who were not art lovers, had no habit of visiting exhibitions and art presentations. Results based on the preferences of standard observers became problematic when generalized to the whole population.<sup>20</sup> As it has been shown by many researchers, the most relevant findings are those based on selected groups of audience – art lovers, artists, art critics and audience that is intrinsically interested in art. Such findings are relevant for the development of art production and art reception. This is the reason why for the purpose of this research, a carefully selected and highly sophisticated group of observers was involved as subjects.

### PIROT CARPETS – AN EXAMPLE OF AUTHENTIC FOLK ART

Pirot carpets represent an authentic form of traditional folk art in Serbia. It is assumed that this production appeared very early in Serbian history and culminated in the 19th century as a new style in carpet production. In the beginning, it reflected the mixed influences of Slavic tradition and eastern carpet tradition. Typically, the carpets were created by women who combined tradition, magic and aesthetic in new forms. As time was passing, the weavers created new forms and symbols in order to bring good energy to family and wish good luck to the owners. Wishing good health, many children, wealth, and other messages were transformed into visual forms and were given the names – turtle, grass, little bird, dance, etc. The tradition of Pirot carpet production has been nurtured and developed and carpets have been transformed to creative art work, a useful everyday object, an aesthetic object and a magical object at the same time, containing various old, many-leveled symbols.

During its history, the carpet production has been negatively affected by social changes and decreased several times, first at the end of 19<sup>th</sup> century by the invention of aniline dyes, during the wars and social crises and finally, the production decreased due to the lack of interest for tradition. An effort is done to preserve, develop and reconstruct this old tradition.

Today, Pirot carpet patterns are standardized, and according to weaving instructions, each geometric form has its proper place on the surface of the carpet – there are central-field, middle-circle and outer-circle positions. There are 122 forms and 96 ornaments officially registered.<sup>21</sup> Pirot carpet patterns are geometric forms, mainly symmetric, with different levels of complexity<sup>22</sup> and with broad associative fields of meaning.

Pirot carpet patterns are given in stylized, rectangular forms, with various levels of complexity and symmetry. Lines are defined and modified through the process of

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20 B. S. Funch. *The Psychology of Art Appreciation*, Copenhagen, 1997.

21 M. Vitkovic-Zikic, *Pirotski cilimi: Les Kilims de Pirot*, Beograd, 2001.

22 M. Петковић и Р. Влатковић, *Пироџски ћилим*, Београд, 1996.

weaving production. They symbolize different natural forms, the wreath, the dove, the turtle, flowers, etc. as rectangular, stylized shapes. Pirot carpets are recognized as valuable cultural heritage and a relevant element of Serbian cultural identity.

## PREVIOUS RESEARCH

In our first research,<sup>23</sup> the aesthetic value of the basic formal characteristics of patterns was tested, such as complexity – simplicity, symmetry-asymmetry and contrast. The research participants were students of visual arts (N=30; 76.0% female and 24.0% male). As instrument, a 12-scale instrument of semantic differential was applied. That way, a total of 6480 estimations was collected and analyzed. The results show that complexity as well as symmetry appeared as strong predictors of aesthetic evaluation, showing that observers made differences between the patterns based on them. In addition, complex and symmetric patterns together with contrast (black fields), were also highly evaluated as interesting, salient, unusual, harmonic, as well as moderately pleasant, dynamic, familiar and definite.

The patterns which were asymmetric and contained no black elements were not so highly evaluated. It was proved that students of visual arts who were sensitive to aesthetic value but were not familiar with the Pirot carpet tradition, were highly sensitive to formal characteristics of patterns.

In the other research done with a new group of participants (N=30; 76.0% female and 24.0% male), the aesthetic values of patterns were analyzed regarding the preferred position on the surface of the carpet.<sup>24</sup> A 12-scale instrument measured the aesthetic response in relation to the preferred position on the carpet (central, middle-circle, outer-circle). That way, 1080 estimations were collected and analyzed. As the results show, there is a tendency among the research participants to place more complex and more interesting patterns from the sample to the central position on the imagined carpet surface. Patterns that are estimated as simple, usual, uninteresting, unnoticeable, ugly, disharmonic, unpleasant, asymmetric and static are more frequently related to middle and peripheral positions. The results are congruent with the traditional design of Pirot carpets where the most beautiful patterns are placed in the central position.

In the following research, fine components of ambiguity, as a characteristic of patterns, will be of interest.

## THE AIM OF THE RESEARCH: AESTHETIC RESPONSE OF THE OBSERVERS TO PIROT CARPET PATTERNS

The aim of this research is to determine the aesthetic response of observers to Pirot carpet patterns with a focus on the characteristic of ambiguity of visual forms. As it has been said before, most previous researchers tested the ambiguity of symbols presented on paintings, sculptures or standard visual forms. At the same time, those studies involved standard samples of recipients, participants who are not particularly interested or educated in art and aesthetics. It is of interest to test the aesthetic re-

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23 B. Pejić, B. et B. Škorc, "Aesthetic evaluation of Pirot carpet patterns regarding complexity, symmetry and contrast", in: *Proceedings of the XXIV Scientific conference Empirical Studies in Psychology*, 2020, 94–96.

24 B. Škorc et B. Pejić, "Relation between the Aesthetic Evaluation and Position of Pirot Carpet Patterns", in: *Proceedings of the XXIV Scientific Conference Empirical Studies in Psychology*, 2020, 97–99.

ception of traditional Pirot carpet forms including highly sensitive recipients who are trained and educated in art but are not particularly familiar with Pirot carpet tradition.

In this research, we were focused on the relation between the aesthetic response to patterns and their ambiguity. The research includes two experiments. The first experiment tested the subjective level of ambiguity for the sample of patterns; the second experiment tested the fine components of aesthetic impression in relation to the level of ambiguity.

### EXPERIMENT 1 – FLUENCY AND FLEXIBILITY OF ASSOCIATIONS

In order to form the sample of patterns for further research, the associative fields of carpet patterns were measured by the number of associations produced for each form. Associative fields (scope of meaning) were expressed by the number of words associated to each pattern. The number of associations produced is used as a measure of its ambiguity. As it has been mentioned before, it is expected that very clear, discursive, objective terms evoke a lower number of associations. In this case, a non-discursive, open-ended associative field, with a high number of associations is expected. According to theories of creativity, two forms of creative production are the most important and relevant in measuring creativity – fluency, which corresponds with the quantity of creative production, and flexibility, which corresponds with the quality of creative production. In our research the total number of associations produced is identified as the fluency of responses, and the number of novel, non-repeated associations as the flexibility of responses.<sup>25</sup> Both mentioned criteria of measuring the associations are implemented and compared in this research.

### RESEARCH PARTICIPANTS

The research participants were 34 students of visual arts. A dominant majority (73.5%) were female participants, while the others (26.5%) were male participants. They are students of the Faculty of Fine Arts in Belgrade, average age 20. They were educated in visual art and art history but were not familiar with traditional ethno production of Pirot carpets. This group has been chosen because of their high sensitivity to visual art forms.

### STIMULI

As stimuli, 18 standardized, black and white forms of patterns were presented. The sample of patterns included equal numbers of simple and complex forms. Simple forms were seen as patterns with fewer than 20 rectangular lines; patterns with 20 and more lines were defined as complex forms. The sample has been formed respecting the findings mentioned before which identified the importance of complexity of the object in forming an aesthetic decision. In order to balance the influence of complexity, the sample of patterns included both groups equally. Regarding symmetry, the sample included symmetric and asymmetric patterns, and regarding the contrast of the patterns there were patterns with and without black parts (black and white fields in the pattern). The sample of patterns used was the same as in our previous studies, since the chosen forms were approved as discriminative and representative for psychological measuring. (Figure 1)

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<sup>25</sup> R. Sternberg, E. Grigorenko et J. Singer, *Creativity – from Potential to Realization*, Washington, 2005.







simple pattern (left) and complex forms (right)		
symmetric pattern (left) and asymmetric patterns (right)		
pattern with black parts (left) and pattern without black parts (right)		

Fig. 1

### PROCEDURE

At the beginning of the procedure, the participants were informed that patterns would be presented subsequently. Patterns were presented one by one, the task of the participants was to create free associations. Their responses were collected. The exposure time and the time for creating the responses were not limited.

### RESULTS

The total number of associations produced is 577 for 18 patterns, and the average number of associations for a pattern is 32. Regarding the flexibility of associations (number of unrepeated), there were 70 repeated. If fluency was used as a criterion, the total number of associations is 577. If flexibility is used as a criterion, the total number of associations is 507. Totals show that patterns are very rich in the associative meaning, which was indicated by high fluency and flexibility of associations.

According to the average number of associations produced, Pirot carpet patterns were classified in two groups: low ambiguity (the lower number of associations – group 1) and high ambiguity (the higher number of associations – group 2).

Fluency: If the total number of associations was calculated regardless of flexibility, low ambiguity patterns generated up to 30 associations, and high ambiguity patterns generated 32 and more association. The first group included 8 patterns, and the second one 10 patterns (Figure 2).

Left: low ambiguity, right: high ambiguity

If the flexibility of associations is calculated, the classification shows two classes: low ambiguity included 7 patterns, high ambiguity included 11 patterns (figure 3).

Left: low ambiguity, right: high ambiguity

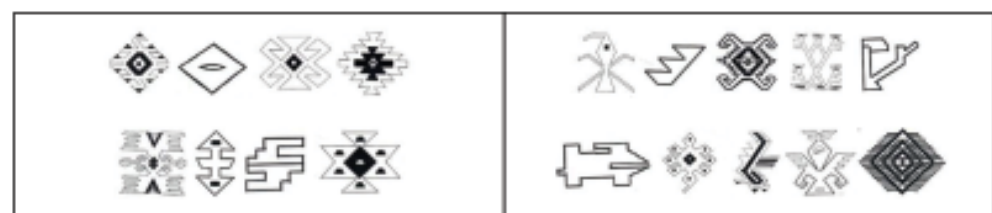


Fig. 2





Fig. 3

As results show, two classes of patterns differ in the level of ambiguity and in next research both groups will be of interest. At the same time, we may notice, in general, that Pirot carpet patterns are recognized as a rich field of symbols by participants, which is in accordance with the traditional understanding of patterns and their multiple and deep symbolism.

## EXPERIMENT 2 – AESTHETIC EVALUATION AND AMBIGUITY OF VISUAL OBJECTS

Based on the results of the first experiment, the sample of patterns was implemented in the second step in the research. The aim of this experiment was to offer a more precise insight into the aesthetic evaluation of patterns, now with controlled levels of their ambiguity. Two criteria previously used for classification in experiment 1 – according to fluency / according to flexibility were analyzed respecting the aesthetic evaluation. A new group of participants was included.

Aesthetic evaluation was observed using a semantic differential. As a method of fine analysis, the semantic differential was developed as a tool for measuring denotative and connotative components of aesthetic responses. Semantic differential is an empirical tool which identifies the fine components of meaning and aesthetic impression.

As a concept, it is related to the works of Charles Osgood<sup>26</sup> and the analysis of language. In his work, Osgood identified two basic layers of the meaning. The denotative component, which is dominant in communication, represents common knowledge about a certain object, it is culturally shared, and a conventional domain of meaning. Together with that, the connotative component, less visible in everyday communication process, represents the emotional, personal and less objective domain of the meaning. In spite of its subjectivity, the connotative meaning is important for aesthetic communication, showing the personal attitude toward the denoted terms and objects. The laws of connotative domain are empirically accessible and show stable results cross-culturally. Osgood identified three basic and stable factors of connotative meaning: activity, potential and evaluation. Semantic differential is sensitive to connotative meaning of objects, words, language terms or works of art.

Later, this instrument was developed, standardized and applied in the field of art measuring the aesthetic impression by Daniel Berlyne.<sup>27</sup> Results confirmed the stability and applicability of semantic differential as a valuable tool in empirical studies of art – particularly visual arts and music. In its modified version, semantic differential confirmed the existence of two basic factors: activity and potential, the third factor was transformed into a hedonic tone. Typically, the instrument consists

<sup>26</sup> C. E. Osgood, G. J. Suci et P. H. Tannenbaum, *The Measurement of Meaning*, Illinois, 1975.

<sup>27</sup> Berlyne (ed.) *Studies in the New Experimental Aesthetics: Steps toward an objective psychology of aesthetic appreciation*, Washington, 1974.

of pairs of adjectives, which are presented as opposites, with five, seven or more grades between them.

In our research, the modified version of semantic differential was used. Adjectives of opposite meaning present two poles of the scale, with seven grades between them. The instrument is a short list of adjectives, including scales which appeared as discriminative for the aesthetic evaluation by our previous research.

## RESEARCH PARTICIPANTS

The research participants were 30 students of visual arts (76.7 % female and 23.3 % male), from the Faculty of Fine Arts, University of Arts in Belgrade, average age 20, who were educated in the field of visual arts but were not familiar with traditional ethno production of Pirot carpets. In order to respect the objectivity of the research procedure, respondents who participated in experiment 1 were not included in this experiment. The sample of the participants is assumed as relevant and representative, since the total of estimations produced is high. Also, the gender proportion reflects the general situation with the average student population.

## STIMULI

As stimuli, the same sample of carpet patterns as in experiment 1 was used. In order to measure the aesthetic response, a 12-scale form was used. For the purpose of this research a revision of the instrument (selection of most sensitive scales) created for the aesthetic evaluation was applied.<sup>28</sup>

## PROCEDURE

Patterns were presented one by one and the participants evaluated each of them using 12 seven-grade scales of the semantic differential. The instrument was created for the particular purpose of this research. It included a selection of scales previously tested and used for measuring the aesthetic reception of visual objects. The scales included the following pairs of adjectives:

1. Simple – complex (1 – 7),
2. Usual – unusual (1 – 7),
3. Boring – interesting (1 – 7),
4. Unnoticeable – salient (1 – 7),
5. Familiar – unfamiliar (1 – 7),
6. Ugly – beautiful (1 – 7),
7. Disharmonic – harmonic (1 – 7),
8. Indefinite – definite (1 – 7),
9. Unpleasant – pleasant (1 – 7),
10. Asymmetric – symmetric (1 – 7),
11. Static – dynamic (1 – 7),
12. Serious – funny (1 – 7).

There were no time limits for evaluation.

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28 B. Škorc et B. Pejić, "Relation between the Aesthetic Evaluation and Position of Pirot Carpet Patterns", in: *Proceedings of the XXIV Scientific Conference Empirical Studies in Psychology*, 2020, 97–99.

## RESULTS

That way, a total of 6480 estimations were collected and analyzed. The average values for 12 scales and 18 patterns were calculated. In addition, the differences between the two groups of patterns (low and high ambiguity) were tested for each scale. The results and comparisons are presented in table 4.

**Table 4:** Fluency – The differences between the two groups of patterns

As presented, if fluency of associations is used as the classification criterion, the differences between the two groups of patterns are confirmed on the scales:

- usual – unusual;
- asymmetric – symmetric and
- static – dynamic.

Scales	M1	M2	F	df	p
simple-complex	4.13	5.35	2.96	1	.105
<b>usual-unusual *</b>	4.11	5.23	5.27	1	<b>.036</b>
boring-interesting	4.33	4.97	1.90	1	.187
unnoticeable-salient	4.18	5.08	3.02	1	.101
familiar-unfamiliar	4.33	4.28	.02	1	.878
ugly-beautiful	4.50	4.54	.02	1	.901
disharmonic-harmonic	5.00	4.26	3.17	1	.094
indefinite-definite	4.20	4.16	.03	1	.856
unpleasant-pleasant	4.65	4.40	.59	1	.453
<b>asymmetric-symmetric **</b>	5.85	4.08	7.52	1	<b>.014</b>
<b>static-dynamic **</b>	3.70	4.90	14.71	1	<b>.001</b>
serious-funny	3.48	4.04	4.21	1	.057

Fig. 4

Results show that patterns with more associations (with higher values of ambiguity) are systematically and more frequently experienced as unusual, asymmetric and dynamic. Other scales were not significantly related to ambiguity.

**Table 5:** Flexibility – The differences between the two groups of patterns

If flexibility is used as the classification criterion, the differences between the two groups of patterns appeared on the following scales:

- usual – unusual;
- boring – interesting and
- unnoticeable – salient.

Scales	M1	M2	F	df	p
simple-complex	3.94	5.36	4.15	1	.058
<b>usual-unusual **</b>	3.93	5.24	7.92	1	<b>.012</b>
<b>boring-interesting **</b>	4.11	5.05	4.67	1	<b>.046</b>
<b>unnoticeable-salient **</b>	3.88	5.19	7.58	1	<b>.014</b>
familiar-unfamiliar	4.56	4.15	1.88	1	.190
ugly-beautiful	4.16	4.76	3.36	1	.086
disharmonic-harmonic	4.51	4.64	.07	1	.790
indefinite-definite	4.32	4.09	.99	1	.335
unpleasant-pleasant	4.32	4.63	.94	1	.348
asymmetric-symmetric	4.51	5.09	.54	1	.474
static-dynamic	3.90	4.67	3.83	1	.068
serious-funny	3.86	3.75	.12	1	.729

Fig. 5

The results show that carpet patterns with more associations (with higher values of ambiguity) are systematically and more frequently seen as unusual, interesting and salient. Other scales were not significantly related to ambiguity.

## CONCLUSION

The aim of this research was to bring the ambiguity of traditional carpet forms as aesthetic objects into focus. The research observes the traditional folk art production as form of artistic production and traditional Pirot carpet patterns as aesthetic visual objects. The ambivalence and ambiguity of carpet patterns as characteristics of visual forms are of interest.

As it has been shown, the ambiguity is one among many other fine components of art reception. It plays an important role in the reception of art symbols and is inter-related with some other components. In psychological research, the complexity and ambiguity of symbols are often investigated and results of many studies confirm the importance of those two factors and their strong influence on aesthetic decision. The results of this research demonstrated the importance of corresponding aspects of visual impression, such as beauty, originality and interestingness.

It would be of interest to repeat the same procedure with some other groups of research participants, in this case, students of visual arts appeared as sensitive audience.

It is evident that Pirot carpet patterns are related to a high number of associations, the connotative meaning ascribed to them is broad and divergent. It could be assumed that a great number of associations is an indicator of rich, non-discursive meaning of symbols. It was expected, having in mind that carpet patterns were created, modified and developed through a long process during history and their forms are not accidental; they are more than aesthetic objects. In that sense, the appreciation and aesthetic reception of patterns could be seen as an open-ended, complex

and dynamic process correspondent to their cultural significance. Also, the scale of beauty showed that subjects in general highly valued the patterns ( $AM=4.49$ , range from 1 to 7) regardless of their ambiguity.

In the next step, two main characteristics of creative production (flexibility and fluency) were used as the classification criteria. The associations produced were analyzed by two different classification criteria. The results show that there are some differences between the groups depending on the criterion. Experiencing the patterns as unusual is systematically related to ambiguity and is a stable characteristic of aesthetic decision, for both criteria used. Scales named symmetry, dynamic, interestingness and salience also influence aesthetic impression and are related to ambiguity. Their influence varied according to the criterion used.

In conclusion, high arithmetic means for all the scales show a general positive aesthetic response of the participants to this type of traditional art. Most of the estimations of the patterns provided by the participants were in the category “high”. The seven-grade scales with the values between 1 and 7 show that most of the responses were higher than 4. The semantic differential showed, in general, that students of art highly valued the patterns. The highest numbers appeared on the scales “complex” and “unusual”. Among them, as it has been shown, the second is sensitive to ambiguity and is related to it.

The results also confirm the prediction that ambiguity as a component of aesthetic appreciation appears as an important subjective component of art experience; it is not a formal characteristic of the objects; rather it is deeply rooted in an individual aesthetic sensitivity of the observer. At the same time, ambiguity is one component of a complex, active, and dynamic network of many other interrelated dimensions. Together, they participate in a subtle process of art reception.

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У раду се испитује утицај двосмислености на естетски доживљај орнамената пиротских ћилима. Двосмисленост је испитивана преко асоцијативне вредности пиротских шара. Организована су два експеримента. У првом експерименту је 34 испитаника – студената Факултета ликовних уметности, асоцирало на 18 стандардизованих шара са пиротских ћилима. Шаре су се разликовале по сложености (једноставне и сложене), контрасту (са и без црних елемената) и симетрији (симетричне и асиметричне). У другом експерименту је 30 испитаника, такође студената Факултета ликовних уметности, проценивало 18 шара на дванаест седмостепених скала семантичког диференцијала. (скале: једноставно-сложено, обично-необично, досадно-занимљиво, дискретно-упадљиво, непознато-познато, недопадљиво-допадљиво, нескладно-складно, неодређено-одређено, непријатно-пријатно, асиметрично-симетрично, статично-динамично, озбиљно-шаливо), без временског ограничења.

За сваку шару је рачунат укупан број асоцијација (флуентност), број различитих асоцијација (флексибилност) и просечне оцене на скалама процене. На основу просечног броја асоцијација (укупног броја и броја различитих асоцијација), шаре су разврставане у две групе: групу ниско двосмислених и групу високо двосмислених шара. Потом су тестиране разлике између група по проценама на скалама.

Резултати показују да када се за меру двосмислености узме број асоцијација по шари, високо двосмислене шаре се процењују више необичним, више динамичним и мање симетричним у односу на ниско двосмислене шаре. Када се за меру двосмислености узме број различитих асоцијација по шари, високо двосмислене шаре се процењују више необичним, више занимљивим и више упадљивим у односу на ниско двосмислене шаре.

Резултати показују да двосмисленост пиротских шара утиче на њихову естетску процену. Аспект утицаја зависи од критеријума како се дефинише двосмисленост.

**Кључне речи:** пиротски ћилим, двосмисленост, естетска процена