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AUTHOR McWhinnie, Harold J.
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ABSTRACT

This study reviewed possibilities for looking at aesthetic perception in art using the D. E. Berlyne approach, identifying alternative methods, and reporting the results of a factor analytic study of preferences of young college adults for abstract art. The Berlyne approach used stimulus objects of simple to complex abstract components of the more complex works. Earlier methods such as the Barron method fostered studies that compared the aesthetic preference of children and adults to those of art experts. Eight art studies on aesthetic preference were reviewed. The study design employed The Jones Art Slide Test to examine aesthetic preferences for abstract contemporary art. The population consisted of young adults age 17-20, divided equally by sex, who were taking a design history lecture course. The data showed that aesthetic preferences for works of art can be studied by factor analytic techniques. Aesthetic preference for works of art was predictable. The study found that the individual artist's style seemed to be less a factor in the aesthetic choices than were the variables more clearly associated with the perceptual and visual content of those objects. References and a list of the 59 slides utilized in the study are included. Four tables describing the analysis in the study appear at the end of the document. (CK)

"Aesthetics From Below: Possible or Impossible?"
(A Factor Analytic Study)

By

Harold J. McWhinnie
Department of Design
Department of Curriculum and Instruction
University of Maryland
College Park, Maryland

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Abstract:

In 1972 D. E. Berlyne challenged researchers in the general area of aesthetic preference to leave off with their studies of preference for works of art and to concentrate instead upon the possible components of aesthetic perception; This study reviews possibilities in the Berlyne approach, suggests alternative methods, and reports the results of a factor analytic study of preferences for abstract art as measured by The Jones Art Slide Test. Implications for future research are discussed.

The paper in addition discusses the educational implications of the research findings and presents some suggestions for those who teach courses in art history, design history, and art appreciation on the college and university levels. The focus of this study was to generate data relative to the aesthetic preferences of young college adults.

Many college level courses in art history, art criticism, and general humanities courses make extensive use of art slides as a part of the instructional approach. College instructors often show a wide variety of slides without attention to the aesthetic attitudes and preferences of their students; therefore one of the purposes of this study was to explore the preferences of the college student.

Background:

Berlyne challenged researchers in this field to do what he described as "aesthetics from below". (Berlyne, 1972) By that term he meant using as stimulus objects, not paintings nor slides of works of art, but simple to complex abstract components of the more complex works. His approach assumed that the work of art was a sum of its' parts. One can only question the assumption that a work of art is the sum of its parts. Many recent aesthetic measure studies have been done,

or at least conceived, without benefit of aesthetics or philosophy, whereas one of the conceptual underpinnings for our work was the writings of Kant.

Berlyne and others such as Martingale (Martingale, 1985) have made the case that the study of "aesthetics from below" (without the use of the work of art or design itself) is possible. We shall leave aside for the moment the question as to whether or not it is desirable. Since we intend to discuss the assessment dimensions of DBAE or discipline based art education, it would seem somewhat relevant to begin our paper with an all-too-brief philosophical consideration of some of the issues about preference which came from Kant. We select Kant because of all the major philosophers, he did seem to address some questions of aesthetic preference.

Although Kant deals with many aspects of aesthetics in his Critique of Judgment, there is one major problem about which he says very little - the nature and objectivity of comparative aesthetic judgments. He attempted to show how the distinction between free and dependent beauty allowed for some comparative aesthetic judgments, but that these would not be based on judgments of taste. There remains the problem whether a Kantian account can be given of the relative aesthetic value of two individual "beautiful" objects found to be so as the result of a judgment of taste. (Crawford, 1980)

When one turns to Kant's discussion of beauty in natural objects one may derive conceptual support for the ideas of Berlyne and Kemal (Kemal, 1979) has looked at this question in some depth. He examined aspects of an argument arising out of Kant's account of beauty that "if beautiful works of art can be shown to be more capable of symbolizing morality then beautiful natural objects, the former could be said to have higher value than the latter". This argument leads to the problem of two sorts of connections between beauty and morality: (1) beautiful natural objects which inspire a feeling akin to the moral could result in supposing

natural objects to be more "real" or genuine than works of art; (2) artistic beauty is more capable of being symbolic of morality and is to be valued on that account.

Another researcher found the chief difficulty about giving works of art a ranking order is that the kinds of properties which are noticed in a work of art and which are directly relevant to its aesthetic merit (e.g., being integrated or expressive) are valued independently by the S's of their relationships to other aspects of the work (such as subject matter). There will be subordinate properties which are valued only because they contribute to the independently valued properties. For we could only say that a work of art was better than another if the same independently valued properties, and only those properties, were possessed by each work, and if one were ranked at least equal to the other on all scores and better on at least one. (Vermazen, 1975)

It is the ranking of such properties which give trouble for those in art education who might wish to employ some of the Berlyne methods for assessment in DBAE.

Other bodies of research in aesthetic preference studies while more indent to studies of the creative personality do offer insight into some of the dynamics found in aesthetic preference.

Earlier studies in art education such as those by Barron (Barron, 1967) presented a thesis that genuine, pervasive innocence of perception underlies mature productive originality, and that it is based upon progression from the sense of awe and wonder and the natural spontaneity of childhood integrated into adult functioning with fine command of ways and means acquired through discipline and technique. An overview of major findings resulting from previous researchers at the Institute of Personality Assessment and Research on highly creative persons serve as the base for theory. Moreover, other research findings suggest that it is a function of style or modes of experiencing that mark the highly creative person.

Three stylistic variables of highly creative persons are that they are more perceptually oriented, intuitive, and are able to discern and to prefer more complexity in whatever it is that they attend to.

The Barron methods provide a rather unfortunate model for research in art education, that is that it fostered studies which compared the aesthetic preferences of children and adults to those of art experts.

A study by Taylor (Taylor, 1971) presented the results of her research with the preferences of young children as compared with art experts. A pair comparison scale for measuring aesthetic judgment which could be used with four and five year old children was developed by her art experts independently judging for "aesthetic quality" color slides representing a variety of stimuli on an eleven-point successive category scale. The scale was administered to forty children on two occasions six weeks apart. The resulting data indicated that the scale is a valid measure. Descriptive information for each pair of slides used as an item in the scale is included. The Taylor study demonstrates some of the problems which many studies have encountered when expert judges are used as a criterion group.

Taunton (Taunton, 1982) did demonstrate that work with the preferences of young children is important. Despite discrepancies and neglected areas in the literature on the aesthetic responses of young children to the visual arts, a review of that literature reveals that a view of young children as having definite, responsive capabilities in the arts is surfacing and should be acknowledged.

The recent work by Parsons seems to be relevant to this point. (Parsons, 1987) Parsons has studied the development aspects of aesthetic preference and aesthetic behavior by means of tape interviews at all age levels. He has found very clear developmental stages in aesthetic development and his works seems to be based upon the methodologies for the study of children's drawings.

Rosenstiel (Rosenstiel, 1978) reported some data from developmental studies that are important for future work. Students in grades 1, 3, 6, and 10 viewed a selection of paintings to determine developmental states in aesthetic judgment. Age group reponses were analyzed for general characteristics and for children's ability to distinguish among standards of personal preference, community values, and technical competence.

A more recent study by Taunton (Taunton, 1984) reports additional positive results. A group of young children were studied to investigate their ability to sense expressive qualities in art and to respond to verbal clues which describe these qualities. Preferences have also been measured for drawings as well as for paintings.

Both of these studies present data and in general support the conclusions which Parson developed based upon his interview techniques. O'Hare (O'Hare, 1982) investigated the sensitivity of children aged 6 to 10 to stylistic properties of line drawings. Subjects were asked to judge the similarity of 12 drawings which varied along the dimensions of clarity, expressiveness, and line thickness. In contrast to previous research, the youngest children had the ability to make multidimensional discriminations.

A study by West (West, 1973) reports on some of his data. His study was an attempt to investigate the extent to which knowledge of results in various forms (true, none, and false) may modify aesthetic judgment. Seventy-two graduate students were administered an aesthetic judgment test of fifty items. Twenty-four subjects received correct feedback, twenty-four received false feedback and another twenty-four received no feedback. Scores on the first twenty-five items, the second twenty-five items, and all fifty test items constituted the dependent variables. Individual personality feedback was a significant main effect, with the trend of means (from high to low) among subjects in the correct, no, and false

conditions, respectively. Only one personality variable (Intolerence of Ambiguity) produced significant effects. Generally, intolerant subjects surpassed tolerant subjects. Intolerant subjects were relatively insensitive to false or no conditions. Tolerant subjects were adversely affected by no and false feedback conditions as compared to the true knowledge of results condition.

Jones (1973) also studied the effect of feedback on aesthetic preference. In his study students recorded their preferences for abstract works of art. Some were assigned to an experimental condition in which they had to argue for their negative choices. He reported that his results failed to reproduce those of our earlier study by Mitter (Mitter, 1971). We selected the Jones Art Slide Test as an instrument for our study since we were concerned with the study of preference without subject matter in the art slide items used. Many of these studies are generally related to the Berlyne tradition in empirical aesthetics, that is the study of "Aesthetics from Below."

The purpose of the Berlyne approach was to remove from the study of aesthetic preference many of the variables that had been studied in the past. One negative consequence of his approach was to make such research less relevant to the educational enterprise. When one conducts research in an educational rather than in a laboratory setting, such as Berlyne employed, the full range of situational variables become important. A study by Heidt (Heidt, 1977) demonstrated this observation. His study aimed to ascertain how quality of art stimuli and prior knowledge affect visual aesthetic preferences of community college students as regards hedonic tone and exploration time. The treatment variables tested were quality of art stimuli, prior knowledge and art backgrounds.

Method:

A study using The Jones Art Slide Test was designed to study the aesthetic preferences for abstract contemporary art. We wished to see if undergraduate students in a design history lecture class could discriminate complexity as simplicity in their preferences.

Sixty-eight students took the test and rated their preferences in terms of "like" (1) or "dislike" (2) on each of 61 slides of paintings. The study was designed to avoid some of the problems noted in the literature among which were that Berlyne's use of abstract drawings assumed that a work of art is the sum of its parts.

Berlyne's abstract drawings were not works of art but test items constructed to represent aesthetic qualities much like those employed by Barron on his Welsh Figure Preference Test.

We employed slides of contemporary abstract and non-objective paintings in order to measure preference for the visual aesthetic elements in the work of art.

Our population consisted of young adults, age 17-20, divided equally by sex, who were taking a design history lecture course. Less than 1/4 had any previous college or secondary school courses in art or design. Less then 1% had previous art or design history courses.

For this study we selected the forced choice technique since it was employed by Barron in his research. We have used the Barron work as our point of departure. In addition, Jones designed his test to use the forced choice method since he was concerned with a replication of the earlier Mitter study which employed that technique.

Our statistical methods used SPSS-X method of factor analysis and descriptive statistics. We did not test hypotheses nor did we employ infinitive statistical procedures in our data analysis. Factor analysis allows one to discern

patterns in a set of text data. It is descriptive in intent and presents a state of "what is".

Results:

Table One presents data from the Jones Art Slide Test One. A two factor SPSS program was used for our data analysis. The data indicates the strong factor loadings obtained on factor one which we identified as a complexity factor. Without the presence of subject matter in the works of art judged, it would seem that our subjects based their preferences on the 2 factors of complexity or simplicity. (All the slides were non-objective works of 20th century art.)

(INSERT TABLE ONE HERE)

With Varimax rotation the factor loadings become clearer and various artists were loaded on either factor 1 or 2 but there are no multiple loadings nor negative values. Where several works by the same artist are represented, the loadings for each artist are on the same factor which indicates a stability and a reliability in the assessment of their work. Factor analysis was employed in our studies so that we could assess these patterns of preference choice.

(INSERT TABLE TWO HERE)

This data is offered as one measure for the reliability of preferences of artistic style.

When we look at the pattern of preference for the second half of the Jones Art Slide Test, a similar pattern of factor loadings becomes apparent.

(INSERT TABLE THREE HERE)

There was only one case, a work by Newman in which the artist was loaded on both factors. (.59 and -.51) This was also the only high negative loading.

The data from the second half of the Jones Art Slide Test seems to be even more one dimensional then the data from part one. (Jones found his test reliable at

.65 or .70 in his dissertation study. His validity was based on a study that employed a similar young adult college population.)

(INSERT TABLE FOUR HERE)

Discussion:

Our data showed that aesthetic preferences for works of art can be studied by factor analytic techniques. Aesthetic preferences are reliable, predictabie, and are not random. Such preferences have an order and our results were congruent with the earlier findings by Berlyne. By using The Jones Art Slide Test we have removed the factor of familiarity that other studies found were critical. Such a factor is of course the preference for or a recognizable image that dominates in so many tests of aesthetic preference.

We selected the variable of complexity-simplicity for study in this research because of the central importance of that variable in both the work of Berlyne and Barron. Those twin bodies of empirical research were identified as the starting point for a series of studies in aesthetic preference.

Our general findings were not imagine but did cooberate earlier studies in aesthetic preference.

Our methodology while moving beyond the approach of Berlyne but does seem to save some of the strength of his system in the avoidance of the use of the expert judge as a criterion against which to measure the preferences of the adult or child.

Conclusions:

This study focused on the aesthetic preferences college age students.

It found that:

(a) Aesthetic preference for works of art is predictable. (Tables 2 & 4.) That is various samples taken from the same population will have similar aesthetic preferences for abstract works. While means for

individual slide test items may differ the patterns of aesthetic preference are quite constant.

(b) The variables of complexity - simplicity which Berlyne found to be critical also hold in the measurement of preference for works of art. (Tables 2 & 4.)

This relationship was important because it allowed us to relate our data to the three major bodies of historical reserach in aesthetic preferences:

(1) complexity - asymmetry studies of Barron

(2) studies of Berlyne

(3) emerging work in informational theory in aesthetic preference by Moles.

(c) Works of art can in general be classified according to their visual content as either simple or complex in Barron sense.

(d) A test of aesthetic preference such as the Jones Test can be reliable at least in terms of split-half reliability, (Tables 2 & 4.) When the test is divided in half and related to itself.

What do these findings indicate to the teacher of a design or art history course? It would seem that the students make their aesthetic choices on the basis of variables of visual complexity. The individual artist's style seems to be less a factor in the aesthetic choices than are the variables that are more clearly associated with the perceptual and visual content of those objects.

The emphasis on selection of content for art history and art criticism classes is important to the basic rationale of our studies. Our attempt is to present base line data for aesthetic choice of children and adults. As with the development studies of childrens drawings, base line data will give some as to "the what is" "what ought to be". We have employed the late adolescent or the young adult

population because those students who are not art or design majors seem to be very similar in preference levels to the early adolescent. Parsons studies in the developmental aspects of aesthetic behavior also confirms these general developmental stages.

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Note

The following is a list of the slides used in the Jones Art Slide Test for this study.

They are all slides of non-objective and abstract works of art that have been rated on the basis of the visual simplicity or complexity.

Jones Art Slide Test

1	S	Rothko 1956 Albright Orange & Yellow - Knox Gallery
2	S	J. Oletski 1969 - Forms
3	S	Albers 1959 Homage to Square
4	C	Larry Poons 1964 Northeast Grave
5	S	Mondrian Composition
6	C	Stella - Marques de Portage Brvc. Huls - Calif - 1960-65
7	S	Rothko 1954 Violet & Yellow on Rose
8	C	Anuszkiewicz 1963 Squaring the Circle Corcoran Gallery of Art
9	S	Rothko 1950 No. 10 - Mus. Mod. Art
10	C	Morris Louis 1962 No. 33 Private Collection
11	C	Ampto Held 1967 Thalocropoles 7'x6'
12	C	Vasarely Cassiopee
13	C	E. Kelly 1964 Green, Blue, Red Whitney Museum of Art
14	C	Clyfford Still Forms Museum of Modern Art, 1951
15	C	Ampto Held Mao, 1967 9½x9½
16	C	Vasarely Helios 1960
17	C	Anuszkiewicz 1965 Untitled
18	S	No Info.
19	S	Tomlin 1952 #10 Proctor Gamble Gallery
20	S	Larry Poons 1964 East India Jack Prev. Coll.
21	S	Krushenick 1970 Silkscreen print
22	C	Paul Jenkins 1959 High
23	S	B. Riley Current 1964
24	C	Beckmann Iuca 1964 E. Hampton Gallery
25	C	Vasarely Lebegen 1964
26	S	K. Noland And Again 1964 Priv. Coll.
27	S	L. Poons Nixes Mate 1964 R.C. Scull, NY
28	S	Barnett Newman Ulysses 1952
29	C	Mark Rothko 1947 Black over Reds Baltimore Prev. Coll
30	C	Jackson Pollock Autum Rhythm Het. Mus. 1950

31 S Malevich 1914
Supremalist Comp.

32 S Benj. Cunningham 1964
Equvocation
East Hampton Gallery

33 S Josef Albers
Hom. to Sq. Ascending
Whitney Museum of Art

34 C Jackson Pollock
No. 1 - 1948
Museum of Modern Art

35 C Frank Stella
For Picabra
Aldrich Mus. of Art

36 S Noland
E.M. Brown 1964

37 S Mangold
1/3 Gray-Green Curved
Area 1968

38 S Mondrian
Large Comp. Inr, 1928

39 C Alfred Jensen
Untitled 1965

40 C Frank Stella
Agbatana 1 1968
Whitney Museum of Art

41 C Miroslav Sutes
Bomb of Optic Nerve
1963 Museum of Modern Art

42 C Burgoyne Dillers
Third Theme

43 S Doesburg
Composition, 1915

44 S Blue on White, 1961
Johnson Coll.

45 C Larry Poons 64-65
Sicilian Chance

46 C Guston
Deal 1968 Whitney

47 S Josef Albers
Study for an Early Diary
1955

48 C Neil Williams
Satorial Habits of
Billy Bo 1966

49 S Josef Albers
White Core 1964
Sid Jans Gallery

50 C Jeffrey Steele
Baroque Experiment, 1964

51 C Frankenthaler
Predawn, 1965

52 C Vasarely
Onoho 1956-60
Museum of Modern Art

53 C Anuszkiewicz
Plus Reverse, 1960

54 S Mondrian
New York City, 1942

55 C Stella
Claroquesi, 1964

56 C Pollock
Convergence, 1952
Albright Gallery of Art

57 C Anuszkiewicz
S. Screen, 1968
35x28"

58 C Vasarely V.
Kalota, 1963

59 S Dionysius, 1949
Annalee Newman Coll.

Code
C = Complexity
S = Simplicity

Table One

Jones Art Slide Test One
(1985 Data)

(Factor Matrix Using Principal Factor with Iterations)

Slide No.		Factor One Complexity	Factor Two Simplicity
1	Rothko 1	.42	
2	Oletski	.55	
3	Albers 1	.40	
4	Poons 1	.64	-.51
5	Mondrian		
6	Stella 1	.60	-.54
7	Rothko 2	.51	
8	Anusweitz 1	.58	
9	Rothko 3	.51	
10	Louis	.51	
11	Held 1	.56	-.36
12	Vasarely 1	.46	
13	Kelly	.47	
14	Stella 2		
15	Held 2	.53	
31	Malevich	.48	.43
32	Cunningham	.53	.40
16	Vasarely 2	.54	-.37
17	Anusweitz 2	.47	
18	Amonymous	.44	
19	Tomeley	.41	
20	Poons 2	.51	
21	Krushenick	.50	.47
22	Jenkins	.58	
23	Riley	.47	.49
24	Beckman	.52	
25	Vasarely 3	.53	
26	Noland	.59	
27	Poons 3	.42	

(Only loadings more then .40 reported in Table One)

Table Two

Jones Art Slide Test (First Half)

Varimax Rotated Factor Matrix

Slide No.		Factor One Complexity	Factor Two Simplicity
1	Rothko 1		.41
2	Oletski	.58	
3	Albers 1		
4	Poons 1	.81	
5	Mondrian		
6	Stella 1	.81	
7	Rothko 2		.46
8	Anusweitz 1	.54	
9	Rothko 3		.51
10	Louis		.42
11	Held 1	.56	-.36
12	Vasarely 1		
13	Kelly	.47	
14	Stella 2		.50
15	Held 2		.57
31	Malevich		.64
32	Cunningham		.66
16	Vasarely 2	.64	
17	Anusweitz 2		.40
18	Anonymous		.55
19	Tornley	.50	
20	Poons 2		.56
21	Krushenick		.69
22	Jenkins	.48	
23	Riley		.68
24	Beckman		.46
25	Vasarely 3	.49	
26	Noland	.75	
27	Poons 3	.52	

(Only loadings more then .40 reported in Table One)

Table Three

Jones Art Slide Test (Principal Factor)
(Second Half)

Slide No.		Factor One	Factor Two
27	Poons 3	.50	
28	Newman 1	.56	
29	Rothko 4	.54	
30	Pollack 1	.45	
31	Guston	.41	
32	Albers 2	.44	
33	Pollack 2	.59	
34	Stella 2	.59	
35	Noland 2		
36	Mangritte	.46	
37	Mondrian		
38	Jensen	.54	
39	Stella 3	.62	
40	Miroslav	.40	
41	Diller	.62	
42	Doesbury	.53	
43	Kelly 2		.50
44	Poons 4	.62	
45	Albers 3		.56
46	Will	.51	
47	Albers 4		
48	Steele		.43
49	Francis	.58	
50	Varsarley 4	.49	
51	Anusweitz	.41	
52	Mondrain 3		.58
53	Stella 4	.50	
54	Pollack 3	.69	
55	Anusweitz 4	.60	
56	Varsarley 5		.43
57	Newman 2	.59	-.51

Table Four

Jones Art Slide Test (Varimax Rotation)
(Second Half)

Slide No.		Factor One	Factor Two
27	Poons 3	.49	
28	Newman 1	.57	
29	Rothko 4		
30	Pollack 1	.49	
31	Guston		.52
32	Albers 2		.51
33	Pollack 2	.61	
34	Stella 2	.52	
35	Noland 2		.51
36	Mangritte		.43
37	Mondrian 2		
38	Jensen	.45	
39	Stella 3	.57	
40	Miroslav		
41	Diller	.50	
42	Doesbury	.53	
43	Kelly 2		.61
44	Poons 4	.76	
45	Albers 3		.63
46	Will	.60	
47	Albers 4		.40
48	Steele		.63
49	Francis		.56
50	Varsarley 4	.46	
51	Anusweitz	.49	
52	Mondrain 3		.66
53	Stella 4		.51
54	Pollack 3	.76	
55	Anusweitz 4	.72	
56	Varsarley 5		.49
57	Newman 2	.78	