

## **OPENNESS TO EXPERIENCE, NON-CONFORMITY, AND THE PREFERENCE FOR ABSTRACT ART**

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### **ABSTRACT**

Recent evolutionary theory has argued that what people find "beautiful" is not arbitrary, but rather has evolved over millions of years of hominid sensory, perceptual, and cognitive evolution. Sensations that have adaptive value (i.e., that enhance safety, survival, and reproduction) often become aesthetically preferred. One purpose of the current study was to present a personality and social attitude template for persons who prefer a relatively recent and generally unappreciated form of art, namely abstract art. One hundred and four college participants (68 female) completed personality (openness and experience seeking) and social attitude questionnaires and recorded their preference for 15 realistic, 15 ambiguous, and 15 abstract works of art. Results showed that open participants preferred every form of art presented, but that this difference increased as the art became more abstract. In addition, those with attitudes more tolerant of political liberalism and drug use preferred abstract art the most.

### **INTRODUCTION**

Given that the aesthetic preference is the response of an individual to a piece of art, it is clear that features of both the object and perceiver must be critical in determining the aesthetic response. Much research on the psychology of aesthetics has focused on characteristics of the former, the art objects themselves, and at least four object characteristics have emerged as important factors affecting preference: a) how prototypical the stimuli are, with the most prototypical being

the most preferred (Hekkert & Snelders, 1995; Martindale, 1996; Martindale & Moore, 1988); b) how familiar (or novel) the work is, with the most familiar tending to be the most preferred at least up to a point (e.g., mere exposure) (Berlyne, 1971; Brant, Marshall, & Roark, 1995; Zajonc, 1968); c) how simple or complex the elements and composition are, with usually but not always the moderate level of complexity being the most pleasing (Berlyne, 1971; King, Meganathan, Nagahara, & Boscolo, 1998; Nicki & Moss, 1975; Osborne & Farley, 1970); and finally, d) how representational (v. abstract) the work is, with representational art tending to be preferred to abstract art (Boselie & Cesàro, 1994; Heinrichs & Cupchik, 1985; Kettlewell, Lipscomb, Evans, & Rosston, 1990; Lindauer & Dintruff, 1975).

The characteristics of the perceiver have also received attention, albeit less than the art work itself. Probably the most consistent and robust finding in this literature is that cognitive, behavioral, and dispositional flexibility, as well as openness to experience correlate with aesthetic preference in general (Barron & Welsh, 1952; Child, 1965; Child, Cooperman, & Wolowitz, 1968; Eysenck, 1941; Machotka, 1982). In the current investigation, we were interested in how two components of the person (personality and non-conformist attitudes) interact with how representational the object is to influence aesthetic response. Indeed, abstract art has many things going against it from a preference perspective: it is not prototypical, not familiar, there may be little balance and much complexity, and it, by definition, is not representational. Or as Barrow (1995) put it: "A taste for the avant-garde or the abstract is a fruit of experience overriding instinct" (p. 95). It is little wonder that abstract art is historically a very recent development. And yet it does exist and some people really do like it. The current investigation, therefore, explored who these people are and the psychological factors behind such preferences.

Before discussing theory and research on the two psychological characteristics of the perceiver, to our way of thinking there is one necessary long-term and distal (phylogenetic) cause of the psychological factors influencing aesthetic preference in general and preference for abstraction in particular, namely evolution.

### **Evolutionary Explanations**

What people find "beautiful" is not arbitrary, but rather has evolved over millions of years of hominid sensory, perceptual, and cognitive evolution (Aiken, 1998; Barrow, 1995; Coss, 1968; Dissanayake, 1988, 1992; Feist, 2001; Miller, 2000; Orians & Heerwagen, 1992; Tooby & Cosmides, 2001). Two broad categories of evolutionary theory can be distinguished in aesthetics: natural selection and sexual selection theories, with the former focusing on solutions to survival and safety problems and the latter on solutions to social and reproductive problems. The natural selection theories subsume explanations that focus on arousal and habituation as well as those that focus on the needs for safety, survival,

and order (Barrow, 1995; Berlyne, 1971; Coss, 1968; Darwin, 1871; Orians, 2001; Orians & Heerwagen, 1992). The fundamental argument is that people prefer sensations and perceptions that feel safe and orderly, so ultimately ones that have survival value. Art and aesthetic preferences are no exception. For example, Orians and Heerwagen (1992) conducted a study of landscape features and found that participants prefer savannas, forested and mountainous over tundra and desert settings. Moreover, Orians (2001) has argued that we have evolved preferences for certain kinds of ancestral environments. Evolved preferences revolve around the basic problems of survival: safety, food acquisition, shelter, and choosing associates for reproduction, foraging, protection, and gaining status. Our preference for the beautiful developed out of our adaptive responses to these basic problems of survival.

Sexual selection theories, on the other hand, emphasize fitness and mate value (Dissanayake, 1988, 1992; Miller, 2000; Power, 1999). That is, producing works of art signal one's fitness (intelligence, creativity) to potential mates. Only people who can "afford it" (i.e., are fit and talented enough) can spend their time doing art. Perhaps the most cogent argument for the power of sexual selection pressures in art and aesthetics comes from Miller (2000, 2001). He contends that human creative and aesthetic abilities have evolved through sexual selection pressures and mate choice because they are reliable signals of fitness (e.g., good health and superior intellectual capacity). Miller contends that one form of sexual selection through which aesthetic preferences have evolved in humans is called "the handicap principle" (Zahavi & Zahavi, 1997). In brief, the basic idea of the handicap principle states that "useless" and "wasteful" signals (often in males) evolve because they provide an indication of superior fitness. Only the most fit individuals can afford such "handicaps" and mate choice operates to maximize fitness of offspring by developing a preference for such "extravagant displays."

A few theorists have attempted to bridge the natural and sexual selection perspectives (Feist, 2001; Thornhill, 1998). For example, Feist (2001) argues that both natural and sexual selection pressures have shaped the human capacity to be creative, but different forms of selection have shaped different forms of creativity. From an evolutionary perspective it is important to distinguish two forms of creativity, namely whether the products are technical and applied or aesthetic, ornamental and artistic. The more applied forms of creativity (technology, science, and engineering) are shaped predominantly by natural selection pressures, whereas the more ornamental forms of creativity (art and aesthetics) are shaped predominantly by sexual selection pressures.

### **Personality Explanations**

One of the more robust findings in the personality and creativity literature shows that high levels of openness to experience, novelty seeking, and preference for complexity tend to be found among highly creative people (Barron, 1955;

Eysenck, 1995; Feist, 1998; McCrae, 1987; Zuckerman, 1979). For instance, in a meta-analysis of the personality and creativity, Feist (1998) reported effect sizes averaging about one-third of a standard deviation between openness and creativity in both artists and scientists. Openness and its related construct of sensation seeking also play a large role in eliciting positive reactions to abstract art (Furnham & Avison, 1997; Furnham & Bunyan, 1988; Rawlings, 2000; Rawlings, Barrantes i Vidal & Furnham, 2001; Rawlings, Twomey, Burns, & Morris, 1998; Zuckerman, Ulrich, & McLaughlin, 1993). For example, Zuckerman and associates found that sensation seeking produced significant differences in the ratings of self-abstract nature paintings, with high sensation seekers preferring abstract art more than their low sensation seeking counterparts (Zuckerman et al., 1993). Rawlings and his colleagues have extended these findings to English and Spanish samples (Rawlings et al., 2001).

### **Attitudes toward Non-Conformity**

The personality constellation of the open, sensation seeking, and flexible person may be linked with various social attitudes. People high in openness to experience and sensation seeking often exhibit many non-conformist behaviors, such as rejecting authority and tradition and may be more interested in self-fulfillment than social norms. Open and sensation seeking people therefore tend to be politically liberal (Wilson, Ausman, & Mathews, 1973) and tolerant of substance use (Zuckerman, Neary, & Brustman, 1970). Being politically liberal and being tolerant and open to mind-altering substances are each non-conforming in so far that they demonstrate a general disposition to reject or question established cultural norms. If abstract art also challenges and questions established cultural and artistic norms then one could argue that liberal and norm-doubting people should be more prone to like, or at least accept, abstract visual works of art.

### **Hypotheses**

The first hypothesis involves a general prediction for art preference. Arguments from evolutionary, personality, and attitudinal theory and research would each suggest that people in general should prefer realistic art to abstract art. In an ANOVA model, there should be a main effect on art type, with realistic images being preferred to ambiguous and abstract ones. Secondly, we predict an interaction between art type and the personality dimension of openness, with the preference ratings of high and low open participants diverging more and more as we move from realistic to ambiguous to abstract images. The test of this hypothesis will be carried out via a  $2 \times 3$  mixed design ANOVA, with two levels of personality and 3 levels of art type. Third, we predict that political liberalism and tolerance for drug use will be associated with abstract art preference.

## METHOD

### Participants

In order to maximize variability on the personality dimension of openness, we pre-screened 658 students (358 female, 296 male, 4 unreported) from introductory psychology classes on two openness measures (NEO-openness and SSS-V-experience seeking). Their scores were standardized and summed to create a composite score on openness. The top quartile ( $n = 165$ ,  $M = 1.63$ ,  $SD = .50$ ) and bottom quartile ( $n = 164$ ,  $M = -1.64$ ,  $SD = .71$ ) on the openness composite were therefore eligible for participation. After contacting each of the 329 participants in the top and bottom quartiles on openness, 104 ended up participating in the current study. There were 55 from the high openness group (36 females, 19 males, mean age = 18.96;  $z$ -score composite mean on openness =  $+0.80$ ,  $SD = .35$ ) and 49 from the low openness group (32 females, 16 males, 1 unreported, mean age = 18.63;  $z$ -score composite mean on openness =  $-0.90$ ,  $SD = .67$ ). Participants received partial credit toward the completion of class requirements.

### Measures

#### *Experience Seeking*

During the pre-screening session, participants also completed the Experience Seeking (ES) scale of the Sensation Seeking Scale form V (SSS-V; Zuckerman, Eysenck, & Eysenck, 1978). Although the SSS-V measures four dimensions of sensation seeking, because of time constraints and previous research showing its superior predictive validity with aesthetic preference (e.g., Furnham & Bunyan, 1988) only the 10-item Experience Seeking (ES) scale was administered. The ES scale was given by way of a forced choice response format. An example item is the choice between "I dislike all body odors" and "I like some of the earthy body odors." Reliability and validity data are adequate and reported in Zuckerman (1994).

#### *Openness to Experience*

Also during the pre-screening session, participants completed the Openness (O) scale of the short form of the NEO (FFI; Costa & McCrae, 1992). The Openness scale consists of 12 items, rated on a 5-point Likert scale (1 = strongly disagree, 3 = neutral; and 5 = strongly agree). These 12 items come from the longer form of the NEO-PI-Revised. Example items include "I believe letting students hear controversial speakers can only confuse and mislead them" (negatively scored) and "I have a lot of intellectual curiosity." The O scale has adequate reliability and validity (Costa & McCrae, 1992).

*Composite Openness Score*

Construct validity of the ES and O scales are reported in the current study from mass-testing. In the entire sample that was mass-tested the correlation between ES and O was  $r(656) = .46, p < .001$ . In the subsample of participants in the current study, the correlation was  $r(104) = .63, p < .001$ . These two constructs do appear to be measuring much the same thing. Therefore, these two measures were combined (after z-transformations were performed) into one composite openness score.

*Attitudinal and Demographic Information*

An attitudinal and demographic information sheet asked questions relating to political liberalism (Wilson, Ausman, & Mathews, 1973) and tolerance of substance use. Political orientation was measured using a five-category response option (very liberal, moderately liberal, neutral, moderately conservative, very conservative). Tolerance of drug use was measured using the following mutually exclusive questions from the SSS-V (Zuckerman et al., 1970): "I have tried marijuana or would like to" or "I would never smoke marijuana." Endorsement of the first part of this question was awarded a single point. The second question read: "I would not like to try any drug which might produce strange and dangerous effects on me" or "I would like to try some of the new drugs that produce hallucinations." Endorsement of the second part of this question was awarded a single point. Responses to these two questions, therefore, were summed to create a 3-point tolerance of substance use scale (0, 1, or 2 points). The demographic sheet also included questions pertaining to gender, race, income, class and major in school, and the religious and political affiliations of the participant's parents.

*Aesthetic Judgment Task*

From a prior pilot investigation, 100 works of art<sup>1</sup> were rated on level of abstraction. From these ratings, 15 of the most abstract, 15 of the most representational, and 15 of the most ambiguous works of art ( $N = 45$ ) were projected in random order for five seconds onto a flat 5' × 7' white screen in front of the classroom using an opaque projector. The number of the artwork was announced prior to its projection by the experimenter, after which time the participants recorded their preference ratings for each picture on a 9-point Likert scale, anchored at "like very much" (0) and "do not like at all" (8).

<sup>1</sup> For a copy of the names, dates, and artists of the 100 art pieces as well as their representational-abstract ratings and inclusion the final 45 pieces, write to: Gregory J. Feist, Dept. of Psychology, University of California, Davis CA 95616

## Procedure

Prior to participants' arrival for the session, a test image was projected on the screen to be used during the art rating section of the experiment. After the participants arrived, they were greeted and asked to sign an informed consent form. The experiment began when the participants signed the informed consent and agreed that they had not participated in the pilot study. Because the personality scales were completed during a prior mass-testing session, the only two tasks were the demographic and the art preference judgment (in that order). The participants recorded their answers via pen and paper questionnaires, which were passed out on arrival. They were shown 45 images and given 5 sec to rate each one. When they had completed the aesthetic judgment ratings, the experiment was concluded. The packets were collected, and the subjects were thoroughly questioned and debriefed as to the purpose of the study.

## RESULTS

The overall preference means (*SDs* in parentheses) for the abstract, realistic, and ambiguous images were 49.02 (19.14), 62.94 (18.11), and 49.40 (16.53) respectively. The main effect analysis comparing these means was significant ( $F(2, 101) = 40.96, p < .001$ ), and the magnitude of this effect was medium and explained 29% of the variance in art preference ( $\eta^2 = .287$ ). Planned comparisons showed the realistic mean was significantly higher than both the abstract and ambiguous means ( $t(103) = 6.25, p < .001$ ) and ( $t(103) = 7.94, p < .001$ ) respectively. The abstract and ambiguous means did not differ significantly ( $t(103) < 1.0, ns$ ). This result supports our first hypothesis and replicates other studies that report a general preference for realistic images compared to abstract ones (e.g., Heinrichs & Cupchik, 1985; Kettlewell et al., 1990).

The second hypothesis to be tested was that the dichotomous open personality dimension (as measured by the composite score from the NEO-FFI Openness scale and the SSS-V ES scale) would interact with art image preference ratings. The high open participants should prefer the three art categories more than the low open participants but this difference should be greatest for the abstract art images. The 2 (openness level)  $\times$  3 (art type) ANOVA supported the hypothesis. The interaction effect was significant ( $F(2, 101) = 4.66, p \leq .05$ ; see Figure 1). The magnitude of the interaction effect was small and explained a little more than 4% of the variance in abstract art preference ( $\eta^2 = .044$ ).

The third hypotheses to be tested concerned attitudinal variables and preference for abstract art. More specifically we predicted that political liberalism and tolerance of drug use would also be associated with preference for abstract art. Political affiliation was measured by asking participants to place themselves in one of five groups: Very liberal ( $n = 7$ , mean abstract art preference score = 67.71,  $SD = 26.35$ ), moderately liberal ( $n = 36$ , mean = 53.22,  $SD = 15.04$ ), neutral

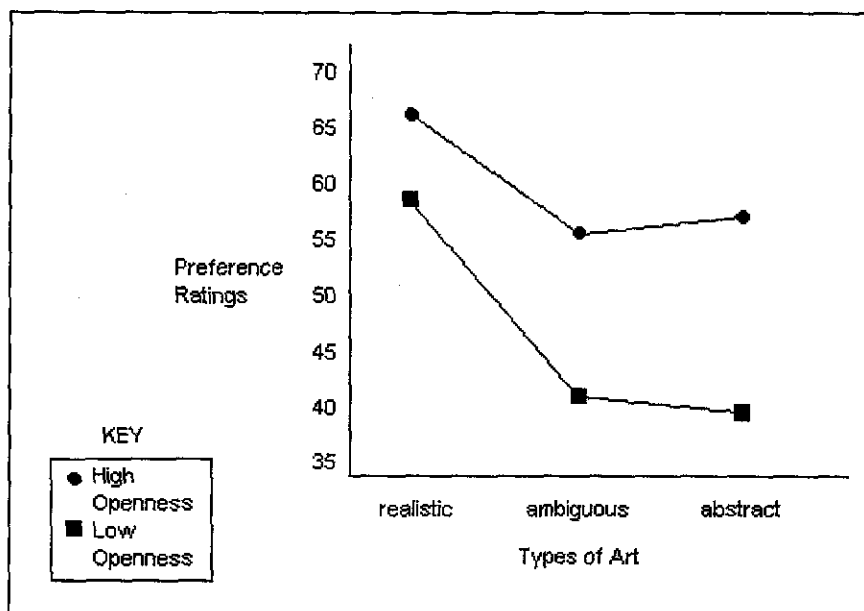


Figure 1. Graph of high and low openness participants for three art types.

( $n = 32$ , mean = 49.49,  $SD = 18.02$ ), moderately conservative ( $n = 24$ , mean = 42.69,  $SD = 15.89$ ), and very conservative ( $n = 3$ , mean = 42.69,  $SD = 25.89$ ). The means on abstract art preference for these five groups are presented in Figure 2. The one-way ANOVA supported the hypothesis that liberal students prefer abstract art more than less liberal students (omnibus  $F(4, 101) = 5.04$ ,  $p \leq .001$ ). A post-hoc linear contrast was conducted comparing the average abstract art preference scores of the two liberal groups with the average of the neutral and two conservative groups and it revealed a significantly greater abstract art preference score for the liberal group than the neutral-conservative group ( $t(97) = 4.31$ ,  $p < .001$ ). It is also interesting to note a negative correlation between political conservatism and the composite openness score ( $r(102) = -.34$ ,  $p \leq .001$ ).

Recall that the 2-item measure for tolerance of drug use (specifically hallucinogenic) could yield point totals of either 0, 1, or 2. Those who answered no to both questions (score of 0,  $n = 59$ ) had a mean abstract art preference scores of 44.98 ( $SD = 21.22$ ); those who answered yes to at least one question (score of 1,  $n = 30$ ) had a mean of 51.75 ( $SD = 14.78$ ); and those who answered positively to both questions (score of 2,  $n = 15$ ) had a mean of 59.47 ( $SD = 13.25$ ). In short, there was a linear effect between tolerance of drug use and preference for abstract art ( $F(2, 103) = 4.09$ ,  $p \leq .05$ ). The post-hoc linear contrast between the "not at all" (0) tolerant group and the average of the "somewhat" (1) and "very" (2) tolerant



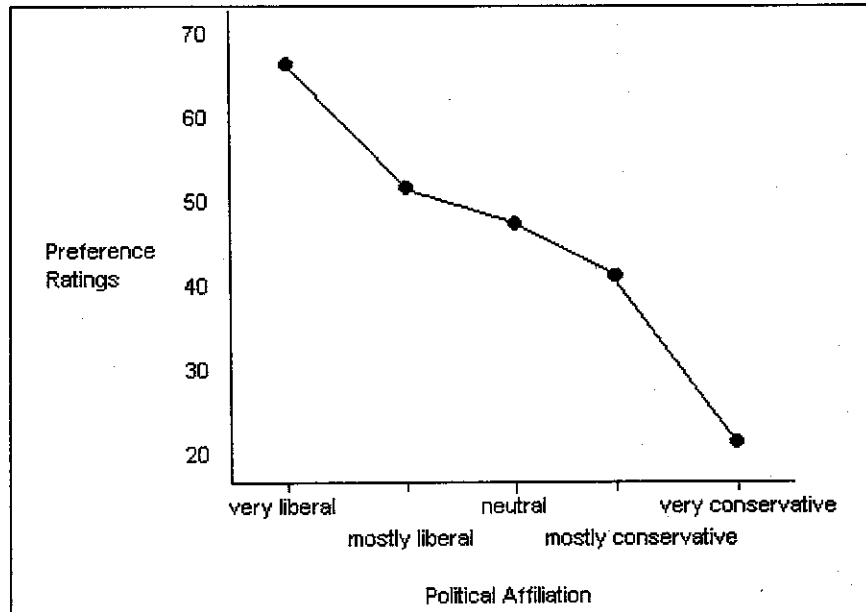


Figure 2. Political affiliation and preference for abstract art.

groups revealed a greater preference for abstract art for the "tolerant" group ( $t(101) = 2.79, p < .01$ ). No demographic variables were significantly associated with preferences for abstract art, including age ( $F(5, 103) = 1.65, ns$ ), gender ( $F(1, 102) < 1, ns$ ), or race ( $F(4, 102) < 1, ns$ ).

## DISCUSSION

The main hypotheses of this study were confirmed: people in general prefer realistic to abstract art, and this effect is strongest for people low in openness. Also, non-conformist attitudes about politics and drug use do distinguish those who will prefer abstract art from those who will not. At the outset we argued for three categories of theoretical explanation for why most people would prefer realistic to abstract art: evolutionary, personality, and attitudinal.

Mounting empirical evidence and burgeoning theoretical development at least indirectly support the idea that the human aesthetic response has been shaped by long-term evolutionary pressures (e.g., Barrow, 1995; Coss, 1968; Dissanayake, 1988, 1992; Feist, 2001; Miller, 2000). Evolutionary theory would suggest that potentially threatening visual images (i.e., ones that cannot be easily assimilated) would be reacted to more negatively than those that are easier to assimilate. Like all animals, humans have a need for safety and order and this holds for conceptual

stimulation as well as physical threat. Indeed, our affective responses are signals to ourselves and others about the status of our well-being. Many emotion theorists suggest that negative affect (e.g., anxiety, sadness, fear, anger, or disgust) results from potential threats to our well-being, whereas positive affect (e.g., enjoyment, amusement, happiness, pride, interest) results from benefits to our well-being (e.g., Lazarus, 1991).

Evolutionary influences on perceptual and color preferences are relatively obvious when dealing with environmental stimuli that directly affect one's survival, such as landscape and botanical preference (Barrow, 1995; Orians, 2001; Orians & Heerwagen, 1992; Thornhill, 1998). Such influence may be less obvious, however, when dealing with stimuli that have no direct natural selection value, such as abstract and symbolic representations found in art. Yet sexual selection pressures—fitness and mate-value—may play the critical role in shaping human aesthetic response (Miller, 2000).

In addition, the extent to which the moderate levels of openness, non-conformity and risk taking have been adaptive in human evolution, a dispositional foundation for aesthetic appreciation has been laid. There exist some people for whom novelty, complexity, and unusual stimulation are going to be less aversive and perhaps even appealing. These people have been labeled "open," "thrill-seeking," or "sensation-seeking" by various theorists. Developmental psychologists have demonstrated a strong temperamental basis to the individual differences in responses of infants and children to novel situations and stimulation (Kagan, 1994; Rothbart, Ahadi, & Evans, 2000; Thomas & Chess, 1977). Some children become quite upset and withdrawn and others become very curious and approach-oriented. Abstract art is indeed a novel and unusual stimulus. Therefore, one could argue there is a temperamental foundation for openness and by association for abstract art preference.

Non-conformist social attitudes also do a very clean job of discriminating those who appreciate abstract art from those who do not. Political liberalism and tolerance of drug-use both have linear relationships with appreciation of abstract art. Each of these relationships can be intuitively explained: those who are more dissatisfied with the status quo and are more tolerant of self-induced altered states, are more open to artistic abstract expression of ideas, feelings, and perceptions. A core assumption of liberal political philosophy is distrust of the old and a questioning of social norms that favor the status quo (and indeed, the current study replicated a common finding that politically liberal people are more open to experience).

In conclusion, it is our argument that a subset of humans has always been more receptive and open to novel experiences and are therefore more creative and appreciative of art, abstract art in particular. Perhaps a slightly larger subset of people may not be the creators but are more sensitive to and appreciative of creativity and beauty, whether it be found in nature or man-made. The current research collaborates that of others and suggests that a basic dimension of personality, namely openness to experience, is the disposition that most consistently

is associated with aesthetic appreciation, even if the aesthetic representations are rather abstract. Open and non-conformist individuals appear to be less threatened by images that are complex and abstract and it appears to be these people who continue to push the next frontiers of art and aesthetic appreciation.

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