Gender and Age Differences in Preference for Works of Art

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The purpose of this study was to examine preference for relative degree of realism or abstraction in a work of art as a function of gender and grade level. Three hundred and thirty-nine elementary school students, divided into grades one and two and grades five and six, participated in the study. Each participant was administered the Salkind Picture Preference Scale (Salkind & Salkind, 1973) to measure their preference for degrees of realism in a work of art. A two-way analysis of variance revealed that preference scores for boys remain constant across grades, while scores for girls decrease significantly. At the fifth and sixth grade, preference scores become more realistic. Additional analysis revealed distinct patterns of preference across all items. Results are discussed in light of implications for understanding age and gender differences in preference and the application of such findings to art education.

The general area of preference has been the focus of extensive research and writing in visual arts education over the past three decades (Bezruczko and Schroeder, 1996), with the term preference traditionally referring to behaviors indicating like or dislike for one particular work of art, or a set of visual stimuli, over another. Use of reproductions is generally specified in such working definitions because slides, prints, and postcards, rather than original works of art, have been used as stimuli in preference studies. As discussed by Bezruczko and Schroeder (1996), preference for visual stimuli is important theoretically because preference has been linked to personality development, exploratory behavior, and adaptive capacity.

Preference for degree of realism as a dimension of visual preference also is important to understand for several reasons. First, degree of realism is a criterion that is inclusive of all art work. For example, two-dimensional and three-dimensional works of art, across cultures, all vary along the dimension of realism. Second, preference might reflect the most basic of many responses to a work of art. Finally, students may be more likely to become engaged and their learning facilitated, when the focus is on materials they prefer.

Like many other constructs involved in understanding the development of children in general and particularly in aspects of aesthetics, preference appears to be quite complex, with little consistent information available about what might account for individual differences across gender and age. For example, Neperud and Freeman (1988) concluded that preference might be “personal idiosyncratic phenomena not tied to developmental considerations” (p. 86). Perhaps this phenomenon as they refer to it, is “an individual difference determined in part by past experiences, learning experiences, socialization, cultural values, and maturation” (Newton, 1989, p. 77). More explicitly stated, one could also look to the influence
of variables such as opportunity for art instruction, museum visits, workshop attendance, and travel experiences, among others. Neperud and Freeman’s supposition typifies the problem with understanding the sources of individual differences in aesthetic preference; many factors operating together explain a good deal of the differences between children, but it is unclear as to how any one factor accounts for a significant portion of the variance.

Lark-Horovitz (1937) recognized the presence of confounding variables in preference studies by writing that, although “exposure to works of art brings forth an aesthetic response,” when these responses are analyzed, “not a single element seems to be aesthetic. It is as though an intangible ‘something’ permeates the otherwise tangible non-aesthetic characteristics,” such as line or color (p. 158). The analysis by Lark-Horovitz (1938) suggests that some other variable may contribute to differences in preference, and indeed, work done in this area over the last 60 years has shown this to be the case. For example, Neperud and Freedman (1988) found when children’s preferences for Fibonacci-based spatial divisions\(^1\) were studied, visual preferences in part, were biologically related. Along the same lines, in a review of aesthetics and its origins, Kogan (1994) poses the question of whether there is a biological basis for all aesthetics, including the aesthetics of art, music, and dance. In a review of fascinating studies, he asks whether a rudimentary aesthetic sensitivity is hardwired into the organism virtually from birth, or whether an accumulation of relevant experiences is required before any kind of aesthetic appreciation can become manifest (p. 140). He reviews the infancy literature, especially the infants’ response to musical stimuli, and offers the argument that a basic element in the human genome is an aesthetic potential, realized according to the relative influences of genes and culture.

There have been two major axes along which work in understanding preference has aligned itself during the last three decades. The first has to do with the task used to assess preference. The majority of preference studies have concentrated on which of several reproductions of artworks is preferred or liked, where participants are required to rank order the stimuli (Hardiman & Zernich, 1977, 1982; Peel, 1946; Taunton, 1980), choose one from a set of stimuli (Salkind & Salkind, 1973), or respond to a set of paired comparisons (Valentine, 1970; McWhinnie, 1987). The majority of these studies have not attended to the psychometric characteristics (including reliability and validity) of the measure of preference used, threatening the meaningfulness of any results. In fact, most studies of aesthetic preference use idiosyncratic assessment tools, developed by the researcher to fit a particular purpose, rather than an assessment tool that has standard instructions and has been evaluated for the qualities of reliability and validity. The continued use of such tools limits generalizability of results while preventing a clear test of the research hypothesis and the interpretation of the results of such a test.

The second axis involves a concentration on identifying variables that may influence preference. For example, one of these heretofore uncontrolled variables has been content within items, such that preference may be as much a function of con-

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\(^1\)Leonardo Fibonacci, a medieval mathematician, proposed a sequence of numbers beginning with 1, then adding 1 to itself to yield 2, and then adding the last two numbers in the series to produce the next, e.g. 1, 1, 2, 3, 5, 8, 13, 21, 34, etc. This curiosity bears a surprising resemblance to patterns in both nature and classical art.
tent as it is preference. In fact, the most often cited factor when children are used as participants is content or subject matter (Frechtling and Davidson, 1970; Lark-Horovitz, 1937; Machotka, 1966; Taunton, 1980).

However, the greatest interest regarding variables that might affect preference are those of the individual differences type including gender and age. Gender differences should be of great interest to art educators and aestheticians because boys and girls are both participants in the arts community, and any differences should be looked upon as a source of understanding as to how these groups approach artistic stimuli differently.

Unlike many areas of developmental psychology, the results of analyses by gender in some areas such as cognitive abilities show the results to be unequivocal. Men and boys excel in mathematical reasoning and spatial ability, while women and girls excel in verbal fluency (Berenbaum, Korman, and Leveroni, 1995). Such findings have been documented since the early 1970s (Maccoby, 1974). However, in studies investigating preference and gender, the findings seem to be mixed. There are at least two studies where a consistent pattern of differences between males and females was evidenced (McWhinnie, 1970; Savarese and Miller, 1979), but the results of research by others do not support this conclusion (Gardner & Gardner, 1973; Hardiman & Zernich, 1977). Where gender differences are reported (Katz, 1944; Lark-Horovitz, 1937, 1938; Machotka, 1966), they are often related to the subject matter of the art work (a factor which needs to be controlled), with males and females preferring different subject content, a difference that become less obvious after about age 13 (Machotka, 1962).

Additional gender differences have been found as well. McWhinnie (1970) reports that males had a significantly higher preference for complexity-asymmetry on the Welsh Figure Preference Test. Significant gender differences were also found among college students (Savarese and Miller, 1979) with females having a significantly higher preference for a painterly style of artwork or a linear style of artwork as measured by the Art Preference Test.

Given the shortcomings of the studies discussed above, the purpose of this study is to address preference in a way that unconfounds content with style and investigates gender and age differences. While it’s conventionally believed that such differences are important to investigate in and of themselves, few studies point to the importance of such an investigation from a theoretical perspective and an applied perspective. In addition, because children are grouped by grade (and age becomes an artifact of such studies), an awareness of differences that parallel, but do not necessarily reflect age, deserve investigation as well for their relevance as a marker of the importance of experience.

**Method**

**Participants**

Three hundred and thirty-nine predominantly middle-class, white elementary school students, divided by gender and grade participated in the study. Five percent of the children were black, Hispanic, or Asian. Of the participants, 54% were from grades one and two and 46% from grades five and six. Of the participants, 48% were boys and 53% were girls. The distribution of participants by grade and gender is shown in Table 1.

**Instrument**

Participants were administered the Salkind Picture Preference Scale (Salkind & Salkind, 1973) to measure their preference for degree of realism in a work of art.
The Salkind Picture Preference Scale (or SPPS), consists of five sets of 6 pictures randomly ordered, each consisting of reproductions of works of art ranging along a continuum from realistic to abstract. Each continuum was validated by experts in the field (see Salkind and Salkind, 1973 for a complete description). Color prints produced from slides of works of art were used to create the arrays. Table 2 lists the titles of all reproductions contained in the SPPS.

The SPPS was developed as follows. A large selection of post card reproductions of works of art were collected from art museums. Using the following set of criteria, five arrays of 6 pictures each consisting of prints ranging on a continuum from a realistic painting to an abstract example comprised the initial form of the scale. The arrays were evaluated by university professors of art education.

Stimuli were grouped by subject categories to reduce the inherent bias of a stimulus being preferred solely for its content. Of the 30 images available for each content area, images that fit each of the following categories were found:

| Table 1 |
| Distribution of children by grade and gender |
| Grade | Gender |
| Boys | Girls | Total |
| 1-2 | 87 | 97 | 184 |
| 5-6 | 74 | 81 | 155 |
| Total | 161 | 178 | 339 |

| Table 2 |
| Items on the Salkind Picture Preference Scale |
| Item 1—A Group of People |
1. Drouais, Group Portrait |
2. Mary Cassatt, The Boating Party |
3. Ferdinand Leger, Three Women |
4. De Stael, The Musicians |
5. Marcel Duchamp, Le Passage de la Vierge a la Mariee |
6. Morris Louis, Gamma Delta |
| Item 2—Place Outdoors |
1. Edward Hopper, House by the Railroad |
2. Derain, London Bridge |
3. Vincent Van Gogh, Houses at Auvers |
4. Lionel Feininger, The Steamer |
5. Hans Hoffman, Sorrier |
6. Frank Stella, Hyena Stomp |
| Item 3—Portraits |
1. Copley, Detail from the Copley Family |
2. Mary Cassatt, Child in Straw Hat |
3. Jawlensky, Child with Doll |
4. Picasso, Girl Reading |
5. William de Kooning, Woman I |
6. Frank Stella, Poster |
| Item 4—Landscape |
1. Constable, Wivenhoe Park |
2. Gaughin, Tahitian Mountain |
3. Schmidt-Rottlieff, Park in Spring |
4. Corneille, Tropical Splendor |
5. Mark Rothko, Four Darks in Red |
6. Wilson, Hawaiian |
| Item 5—Still Life |
1. Caravaggio, Still Life |
2. Henri Matisse, Apples on Pink Tablecloth |
3. Pablo Picasso, Le Cassarole Emailee |
4. Edvard Gris, Breakfast |
5. Jasper Johns, Zero through Nine |
6. Lichtenstein, Brushwork with Splatter |
1. an example of a realistic painting,
2. an impressionist type of painting with slight distortion of color but with a recognizable image,
3. a painting which has distortion of both color and form from the real subject but is still recognizable as such,
4. a painting which has greater distortion of color and form from the real subject and is less recognizable than #3,
5. a cubist or abstract expressionist painting where the image is removed from reality, and
6. a painting where there is complete removal from visual reality or a contemporary example of a hard edge or expressionist image.

Only items identified by all three judges as being in the same relative position along the continuum were included in the SPPS. Color prints of selected works of art were employed so that duplicate copies of the instrument could be easily produced. The instrument used in the original study (Salkind & Salkind, 1973) consisted of postcard reproductions of the works. The instrument was modified for this study, using color photographs reproduced from slides and then mounted on a piece of 10" x 32" mat board.

The SPPS has been found to be valid and reliable for providing an accurate assessment of children's preferences along a continuum from realistic to abstract, with internal consistency estimates of .83 (McWhinnie, 1987; Salkind and Salkind, 1973). The content validity of the items was determined through the ratings of the original group of judges.

Unlike earlier studies (Katz, 1944; Lark-Horovitz, 1937, 1938; Machotka, 1966) where gender differences in preference may have been accounted for by differences in the subject matter contained in the works of art that were used as stimuli, the content within each item in the SPPS (e.g. still life, group of people) was controlled and each array was based on a particular theme. For example, each array, such as the array containing images of landscapes (Item 4 in Table 2), had six intermediary steps from very realistic to non-objective. Because of this high level of thematic control across groups, subject matter within items is most likely not the source of any gender differences. The control of content matter is a major difference in methodology between this and other studies of preference, allowing for a more direct assessment of the construct and a clearer picture of the nature of individual differences.

Procedure

The Salkind Picture Preference Scale (SPPS) was administered to all 339 children participating in the study. The SPPS is administered individually with the experimenter and the subject sitting next to each other at a table. At the beginning of the session, the experimenter told the child, “I would like to play a game with you. I am going to show you some reproductions of paintings, and would like you to tell me which one you like best.”

After the participant pointed or verbally indicated which of the six pictures he or she preferred, the experimenter recorded each response on a data sheet. Each array of six stimuli is presented one at a time, in random order. No time restrictions for responding were imposed although latency to first response was recorded and will be reported in a later paper. Once the participant responded, the response was
recorded and the experimenter presented the next item. Instructions were repeated if necessary.

A participant's score, ranging from 1 to 6, is the mean value across all items. This value or preference score (PS) represents his or her location on a continuum from realistic (a value of 1) to nonrepresentational or abstract (a value of 6). For example, if a child selected the stimulus with a value of 4 from item #1 (a group of people) and the stimulus with a value of 6 from item #4 (still life), and values on the other items being 2, 3, and 5, the child's score would be the mean, 4.

Results

To test the primary research question, a two-way analysis of variance was performed to examine overall differences in preference as a function of gender and grade. As shown in Table 3, the analysis of variance revealed a significant main effect for gender and a significant interaction between grade and gender. Interestingly, there was no main effect for grade, indicating that there is no difference in aesthetic preference as a function of grade (our indirect measure of age). Note that such a finding reflects the lack of differences in performance as a function of grade or age, and not necessarily changes in grade or age for which a longitudinal design would be necessary.

Table 3
Results of Grade by Gender Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>.002</td>
<td>1</td>
<td>.002</td>
<td>.003</td>
</tr>
<tr>
<td>Gender</td>
<td>3.832</td>
<td>1</td>
<td>3.832</td>
<td>7.585*</td>
</tr>
<tr>
<td>Grade x Gender</td>
<td>2.435</td>
<td>1</td>
<td>2.435</td>
<td>4.819*</td>
</tr>
<tr>
<td>Error</td>
<td>169.259</td>
<td>335</td>
<td>.505</td>
<td></td>
</tr>
</tbody>
</table>

*p<.01

**p<.05

Overall, boys (Mean =3.70) had more abstract preferences than girls (Mean = 3.49). The nature of the gender by grade interaction (F(1, 335)=4.82 p<.05) is shown in Figure 1. It appears that although preference scores for children in grades 1 and 2 are similar (Mean males=3.60, Mean females=3.58) there is a sizeable difference between males and females in grades 5 and 6 (Mean males=3.79, Mean females=3.40) with girls in grades 5 and 6 having more realistic preferences than girls in grades 1 and 2, and boys in grade 5 and 6 having more abstract preferences than boys in grades 1 and 2. The upper grade level boys seem to prefer the more abstract works of art while the girls' preferences are for the more realistic works of art.

When the distribution of preferences by item across gender and grade are examined, an interesting pattern results as shown in Figure 2, indicating that independent of differences along individual differences in variables such as age or gender, chil-
Children do as a group express a preference. The majority of preferences fall at either end of the continuum with alternatives 3 and 4 (representing the middle two choices on the continuum) only representing a total of 23% of the responses. The frequencies of such occurrences were tested using Chi-Square, with a significant Chi value ($X^2(5) = 150.09$, p < .01). Alternatives 1 and 2 account for a total of 35% of the responses and alternatives 5 and 6 account for 42%. An extreme example of this pattern can be seen in item #4, Landscape Paintings, where 53% of students pre-
ferred #5 on the continuum while only .6% preferred #3. This one item shows a predominant overall preference for an abstract image.

Discussion

The traditional explanation for individual differences variables that are not clearly biological or environmental in origin (such as visual preference), is the interactive nature of the child's genetic and environmental endowment. Indeed, developmental psychologists have spent the better part of the last 90 years arguing first whether it was genes or the environment that determined outcomes, then the argument progressed to how much of each, with the final recognition that behavior is the result of the ongoing interaction between these two forces 100% of the time. Based on extensive work by Scarr and Weinberg (1983) who investigated similarities in intelligence and personality traits between parents and adopted and biological children, Sandra Scarr (1994) presents a fascinating triarchic theory of experience which could provide a valuable starting point for better understanding the relative role of genetic and environmental influences on preference for visual stimuli.

Scarr presents the interesting thesis that children create their own environments and there are three processes through which this occurs. All three are premised on the fact that children do come into the world with widely different temperaments. First, children's genes and their environments are correlated because their parents provide both. Children’s experiences result from opportunities that are correlated with their personal characteristics. Second, children evoke from other children and adults, characteristics that are similar to their own. Finally, children will seek out a setting that is correlated with their interests, talents, and personality characteristics. There is unquestionably a great deal of empirical work to be done before this triarchic model can accurately be applied to the development of such complex constructs as preference. It is a provocative thesis in that perhaps psychologists, educators, and artists can more accurately conceptualize the factors that might contribute to individual differences in preference.

Data supportive of this interactive nature are available from several sources. For example, a strong argument can be made that there are biological differences between males and females leading to differences in visual performance on a variety of tasks. One such general explanation for the observed difference in performance between males and females especially upon the onset of puberty (fifth and sixth grade) is the general effects of physical maturation which occur earlier for girls than boys (Elkind, 1981; Tanner, 1970).

Since there are no existing studies of the relationship between preference and growth or level of maturity, the best we can do is rely upon the results of past research dealing with cognitive variables (that are related to visual preference) to better understand the source of such differences. For example, Waber (1976) examined performance on different types of cognitive tasks as a function of the relationship between gender differences and maturation. She investigated whether gender differences, maturation, or both were responsible for performance differences between boys and girls on tests of spatial and verbal abilities. The results showed that regardless of gender, early maturers performed better on tests of verbal abilities, while late maturers performed better on tests of spatial abilities. She also found that
across different ages, males tend to score higher on tests of spatial abilities, while females tend to score higher on tests of verbal abilities.

Recently, work in the area of gender differences in spatial and verbal skills has pointed to the importance of underlying neural mechanisms as being responsible for differences between males and females. In one study of differences in spatial cognition, Geary (1995) postulated that such differences arise from the greater elaboration of the neurocognitive system in males than in females, allowing them more effective movement and tracking in a three-dimensional universe. Berenbaum, Korman, and Leveroni (1995) also found biological differences, particularly the presence of the early hormones (such as androgen) which influences the development of visual ability regardless of gender.

In such visual tasks, the task demand–gender interaction may also be operating. Components such as selective attention, memory, and classification may all have a gender-related element associated with maturation. Early maturers and late maturers then, may exhibit different preferences for art works reflective of their level of maturation and the accompanying cognitive skills that characterize that level along with the task demands of particular stimuli. This question could be answered through a longitudinal study in which the performance of children on an aesthetic preference task is compared over time, while cognitive and physical maturity are statistically controlled. If preference is physiologically and biologically based, researchers may need to examine this construct in a different manner than it has been studied previously, but in ways that have been used before such as in the study of hemispheric dominance.

The complementary explanation for the gender differences and interaction is the influence of psychosocial (more grossly referred to as environmental) variables. More to the point, it is the notion that development is an age-irrelevant concept and one that depends more on experience than biology (Baer, 1970) that is useful here. Although age is an accurate marker that correlates with most every change that occurs in children, it is imprecise as an explanation. Age has descriptive, but not explanatory power. For example, Baenninger and Newcome (1995) investigated the importance of environmental input in the development of spatial and mathematical ability and concluded that any such gender differences found between males and females is due to the level of environmental input (or experience).

Visual-spatial tasks, much like the ones used in the above studies, are related to preferences for art works because the tasks of disembedding, finding visual cues and interpreting them is in part highly similar to the process of viewing art works. It is possible, then, that the early childhood experiences of boys who are more likely to be provided with, and to play with, three-dimensional toys, with construction and assembly of structures and kinetic toys such as trains, cars, and such, might result in a distinct difference in that they have more experience with visual modes of language. Girls, on the other hand, are more involved with social interactions, including doll playing and quiet games often in small groups. Visual-spatial skills, in such a setting, are in far less demand, and perhaps, less often expressed. A recent study (Bezruczko & Schroeder, 1996) tested the effects of experience on visual preferences using art-trained and non-art-trained conditions as the independent variable. They found instruction had an effect, but that the effects of instruction did not increase after grade 3. Such a finding may be consistent with the interactive model that Scarr and others have presented in our knowledge that children younger than age 8 have neurological systems that are more malleable, and perhaps the earlier
years constitute a sensitive or critical period for the development of such skills. During this period, children are biologically more sensitive to the effects of environmental influences.

How are differences in preference reported here of use to the art educator? For one thing, they further reinforce the notion that children are individuals and such knowledge should be factored into the process of designing curricula. It also reinforces the fact that differences between boys and girls should be capitalized upon to the greatest extent possible to assist boys in increasing verbal skills, while doing the same for girls’ spatial skills, without implicitly attaching labels good or bad, or superior or inferior to either. Second, the art educator who selects art works for study, can become more discriminating in selecting what appears in the classroom, with the knowledge that preference may be a gender-related factor of sufficient strength that some children will be attracted to a work of art while others will not. In developing curriculum choices for the elementary age child, such awareness should be taken into consideration. Also, understanding the role that biological processes play in the development of visual preferences gives art educators increased degrees of freedom in designing experiences that can take advantage of those individual biological differences that a child might bring in to the world. From a theoretical perspective, Scarr’s notion, as well as some of the work being done in the area of learning and individual differences (as discussed earlier) provides further confirmation that the task ahead of us is to parse out the contributions that different experiences make to the child’s understanding, appreciation, and involvement in art.

References