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Behavioral Vs. Verbal Preference of Music in Relation to Intelligence and How Intelligence Effects Professed Taste and Actual Taste in Music

James Ryabik
Fort Hays Kansas State College

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BEHAVIORAL VS. VERBAL PREFERENCE OF MUSIC IN RELATION TO INTELLIGENCE
AND HOW INTELLIGENCE EFFECTS PROFESSED TASTE AND ACTUAL
TASTE OF MUSIC

being

A Thesis Presented to the Graduate Faculty
of the Fort Hays Kansas State College in
Partial Fulfillment of the Requirements for
the Degree of Master of Science

by

James Ryabik, A. B.
Youngstown University

Date  May 24, 1963  Approved  Ralph E. Chick
Major Professor

Approved  Ralph L. Coder
Chairman, Graduate Council
ABSTRACT

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BEHAVIORAL VS. VERBAL PREFERENCE OF MUSIC IN RELATION TO INTELLIGENCE AND HOW INTELLIGENCE AFFECTS PROFESSED TASTE AND ACTUAL TASTE OF MUSIC

Thesis Directed by: R. Dale Dick

Twenty-nine Ss of high intelligence were paired with twenty-nine Ss of low intelligence according to their musical knowledge and training. A verbal preference and a behavioral preference was determined for four types of music, these were: classical, twentieth-century classical, popular and jazz.

To determine the relationship between types of music preferred by the intelligence groups a test of significance was used. No differences of significance were found between the two groups. A correlation technique was used to determine which of the two groups, the high or the low intelligence, showed the most agreement between behavioral and verbal preference. When raw correlations are considered there is more agreement in the high intelligence group, when a test of significance is used there are no significant differences.

The results of the present study do not agree with Rubin-Rabson's (1940) findings.
ACKNOWLEDGMENTS

The writer wishes to express his appreciation to Dr. R. Dale Dick under whose direction this thesis was prepared for his helpful suggestions and constructive criticism. The writer also wishes to thank Dr. William Gwynn for his suggestions and aid in the construction of the apparatus. Acknowledgments are made to Dr. L. Crocker Peoples and Mr. William Wilkins for their cooperation and assistance. To KAYS radio station and Hays Music Company, appreciation is given for their kind consideration and willingness to loan valuable materials to make this experiment possible. Special appreciation is also given to Dr. Leland Bartholomew and Mr. Edward Moyer of the Music Department for acting as judges in the choice of music.
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CHAPTER I

INTRODUCTION

Rubin-Rabson (1940) reports a correlation between high intelligence and the preference for modern music. She has also ascertained that people with lower intelligence quotients prefer classical music. It was proposed in the present investigation to study the relationship of intelligence to preference of twentieth-century classical, classical, popular and jazz types of music. In a study indirectly related to that of Rubin-Rabson's, Fisher (1951) found that a discrepancy exists between the type of music one professes to "like" and the type of musical taste one actually possesses. It was proposed in the second part of this experiment to compare verbal preference with behavioral preference; and to ascertain if intelligence is a factor in the amount of agreement between verbal and behavioral preferences.

Farnsworth (1958) reports that some people may enjoy only jazz while others receive their greatest pleasure from the music of Bach. This fact is often brushed aside with the airy "What's one man's poison, is another's meat or drink." This statement seems to indicate that musical taste is whimsical, and does not follow laws of any sort. The opposed view, stated again by Farnsworth, suggests that musical taste obeys some absolute and unchanging laws. He states the following:

We hardly need proof to be certain that taste develops out of experiences gained in home, church, club, and school, and out of contacts with the concert stage, recordings, the radio, and the printed page. These agencies of education, propaganda, and censorship force us to revere certain composers and their compositions, and to take less seriously other men and their works.
We come to have several standards of taste: for the concert stage, for the dance hall, for church, and for school—to mention some of the more important. Age, intelligence, and special training are important variables in this process of taste formation. But it is difficult to be specific about all this since there seems to be a great difference between taste as it is observed in everyday life and the sort of taste people are willing to admit they possess (1958, p. 161).

The hypothesis that musical taste is culturally derived can partially be demonstrated through the research efforts of anthropologists, historians and research psychologists (Farnsworth, 1958; p. 119).

It has been demonstrated that intelligence is an important factor when reactions to certain types of music are obtained. Rubin-Rabson (1940) reported that people of higher intelligence prefer modern music. She also found that people with the lower intelligence quotients tended to prefer classical music. In the evaluation of group reactions to compositions, each response of "extreme liking" was weighted at plus 2; of "liking," plus 1; of "indifference," 0; of "dislike," minus 1; and "extreme dislike," minus 2. Beserial correlation technique was then applied to these ratings and intelligence scores. No tests of significance of the correlations were made, however.

Another shortcoming of this study was that subjective methods of collecting data were employed. The methods were subjective to the extent that it is difficult to control for the discrepancy existing between professed taste and the taste that one actually possesses (Fisher, 1951). Also, according to Schoen (1940) the aesthetic response is spontaneous and detached and is derived from the listening process. In Rubin-Rabson’s study, judgments were made in the form of a rating
process. In a recent review of the tests on musical taste Farnsworth (1958) concluded that tests that have been carefully constructed yield low reliability and validity.

Rubin-Rabson used classical, transitional, and modern classical forms of music. This in itself suggests the possibility that the three types of music were structurally equivalent. If this is so, the Ss would have had a difficult time discriminating the types of music. Because of the similarity in the types of music used in her study it is questionable that the Ss were aware of any differences in the types of music used.

The first part of the present study was an attempt to duplicate and correct some of the deficiencies of Rubin-Rabson's investigation. She employed only verbal report whereas in the present study a behavioral preference was obtained.

"Behavioral preference" was defined as the relative time a subject listens to a given type of music when he has a choice of several to which he may listen. The apparatus for obtaining these scores will be described later. Schoen's theory (1940) suggests that beauty is in the experiencing of the thing itself, the musical form. This experience is direct, spontaneous, detached, not critical or analytic. Any type of critical attitude has the tendency to destroy the aesthetic experience. Since Rubin-Rabson used judgments in her study, it is doubtful that her data reflects the actual preference of her Ss.
Four types of music were used in the present study instead of three as was employed by Rubin-Rabson. These were jazz, popular, classical and twentieth-century classical. The types employed were not similar theoretically and therefore should have allowed for clearer-cut and wider variation than the music used in the Rubin-Rabson experiment. The definitions of the four types of music were established by their process of selection.

In a study indirectly related to Rubin-Rabson's, Fisher (1951) reported a discrepancy of the musical taste that one professes to have as compared to the musical taste that one actually possesses. She found that people of a higher socio-economic status preferred classical music. This, however, was true only when the listening situation was structured (music was named or labeled). In the unstructured situation (music was not named or labeled) preferences for classical music did not differ when socio-economic status, age, and sex were the variables under consideration. Rubin-Rabson (1910) also reported that age and training were important variables when a preference of music is made. Fisher (1951) reported that preferences of particular types of music are obvious when the music is labeled. If music is labeled, particular preferences show up when social class and training are considered. If the music is not labeled, particular preferences are not evident when sex, social class and age are considered. This would indicate that perhaps Ss respond to what they think they "ought" to prefer rather than what they really prefer.
Hitherto, it has been difficult to collect objective data when
music is the aesthetic object under consideration. Some of the tests
of behavior used in the past are questionable, and from these tests
many important assertions are made. Some of these methods are: pulse
rate, breathing, photographs of facial expression, muscular movements
and visceral responses (Lundin, 1953). Hevner (1937) stated that the
strength of the aesthetic object is proportional to the number of mental
and physical functions it stimulates; the physical reactions however are
not localized. She also states that these reactions are characteristic
of the aesthetic experience. While these measures may reflect affective
states of the listener, there is no assurance that they are related to
the aesthetic judgments in question here.

Also, introspective methods are frequently used as a means of
obtaining preferences for music. In this case, subjectivity can
contaminate the results of an experiment. Lundin (1953) reports that
there are individual semantic problems when one describes his own aesthetic
reactions; he states that what the aesthetic response involves has
become, for many, a muddle of verbalizations. In a review of the tests
of musical taste Farnsworth (1958) reported that these tests fall into
two categories: those that are auditory, and those that evoke the use
of pencil and paper. He concludes his review by stating that these tests
measure individual taste with poor reliability and validity.

In the past, measures of musical taste have been questionable
because of the methods employed in obtaining data. Some of these methods
include introspection, pulse rate, breathing, photographs of facial
expression, muscular movements and visceral responses. Some of these measures are psychologically objective, but they are questionable as accurate reflections of real preferences. It has also been established that tests of musical taste have low reliability and validity.

In the second part of this experiment it was proposed to compare a verbal preference with a behavioral preference. Verbal preferences were obtained by means of a rating scale on which a S indicated his "like" or "dislike" of a type of music. When the verbal preferences were ascertained, composers and musicians names were supplied to help inform the S about the type of music for which he was rating his "like" or "dislike." Then it was ascertained which of the two groups, high and low intelligence manifested the most agreement between verbal and behavioral preference. An apparatus designed to obtain a behavioral preference was used to obtain objective measures. These measures were defined as listening time. All Ss maintained full control of the behavioral situation and chose the music he wished to listen to by manipulating a set of controls.
CHAPTER II

PURPOSE

Problem I

The first problem concerned the relationship between intellectual level and types of music preferred. The types tested were classical, twentieth-century classical, jazz and popular music. (Refer to types of music for definitions).

Hypothesis. Individuals possessing the higher intelligence quotients will show higher behavioral preference for the modern forms of music, jazz and twentieth-century classical.

Lundin (1953) suggests that "possibly more intelligent people prefer modern music because of its greater intellectual demand" (p. 160).

Problem II

The second problem concerned the relation between intelligence and the amount of agreement between verbal preference and behavioral preference. It is assumed that behavioral preference reflects what the S really prefers; whereas, the verbal preference is influenced by what the S thinks he "ought" to prefer.

Hypothesis. People of higher intelligence manifest less agreement between verbal and behavior preference, while people of lower intelligence show more agreement.
Lundin (1953) states that perhaps intelligent people consider it fashionable to prefer modern music (p. 160).

Although a discrepancy is known to exist between a person's professed taste (verbal preference) and his actual taste, (behavioral preference), Farnsworth (1958, p. 161) reports that several difficulties defy the experimenter undertaking any research in this area because of difficulties in measuring real preferences. The method for measuring real preferences (behavioral preference) is an attempt to avoid these difficulties.
CHAPTER III

METHOD

Materials

The materials used consisted of a questionnaire to ascertain each 
S's musical knowledge and training (KAT), Otis Intelligence Tests to 
indicate the S's intellectual attainment, rating scales to obtain the 
S's verbal preference for music when the music is named, and a behavioral 
listening device for obtaining behavioral preference for four types of 
music used in the experiment.

Questionnaire. In order to secure information concerning each 
S's musical training and knowledge (KAT) of music a questionnaire was 
answered by all tentative Ss of the experiment. The questionnaire was 
adopted from Rubin-Rabson's (1940) study and was modified to include 
only questions that were relevant to a person's knowledge of music. 
Some questions were omitted from the original Rubin-Rabson questionnaire 
because of overlap and redundancy. All modifications were suggested by 
three members of the music faculty of Fort Hays Kansas State College, 
the suggested changes were made to get an accurate index of a person's 
musical knowledge and training.

Each item on the questionnaire was given a weighted score (see 
appendix A.). Based on Rubin-Rabson's (1940) assumptions that per-
formance, courses in musical composition and theories of modern 
composition contribute more to the formation of taste, items concerned 
with these factors were considered more heavily by adding sub-questions
to these topics. Since listening to the radio or symphonies was considered perfunctory listening, items dealing with this type of listening were assigned scores of less weight and were worth one point. Assigning dates to a group of composers was revealing also. On this section of the questionnaire Ss were instructed to place composers and musicians into the centuries in which their greatest works were written. Musical terms were not used on the questionnaire in order that people of high intellectual attainment could not attain a high score by means of good etymological sense. Directions given to each S were held to a minimum during the administration of the questionnaire since the questionnaire was essentially self-explanatory (see appendix B).

The Intelligence Test. Otis Quick Scoring Mental Ability Tests were used in the experiment because of the ease of administration and ease of scoring. The test can be administered with a minimum of direction and is considered to yield a fairly good index of a person's Intelligence Quotient. Otis (1954) stated that the test had a reliability coefficient of .88 when used on 439 college freshmen at Holy Cross University. The form used in the present investigation was the New Edition of the Gamma Form, EM. The test has a mean validity index of approximately .50.

Rating Scales. A rating scale similar to the one discussed by Ghiselli and Brown (1955, p. 104) was used (see appendix C). The scales used were constructed by drawing five inch continuous lines set by the standards of Ghiselli and Brown (1950). The scales were then labeled
to give the rater a guide; at the low extreme was "dislike very much," at the high end of the scale was "like very much." For each scale a type of music was given along with a musician or composer associated with that type of music to aid the rater in the marking of the scale.

**Types of music.** Four types of music were used in the experiment: twentieth-century classical, classical, jazz, and popular. The classical and twentieth-century classical selections were selected by three members of the music faculty at Fort Hays Kansas State College. The jazz and popular selections were chosen through the use of music magazines that are well known for ratings and reviews.

The process of selecting the classical music was conducted by having a professor of music select three classical selections which he felt were good representatives of the music from the classical era. The three records chosen by the judge were: Mozart's Symphony No. 38, first movement, Beethoven's Symphony No. 3, first movement, and Brahms's Symphony No. 1, first movement. The same professor was then asked to do the same for three twentieth-century classical selections. The selections chosen to represent the twentieth-century classical were: Bartok's Concerto for Orchestra, first movement, Shoenberg's Chamber Symphony (1939), and Ussachevsky's Piece for Tape Recorder.

Three other music professors were then asked to rank order the three selections for each type of music as they thought untrained listeners would consider them as representations of classical and twentieth-century classical types of music, each type was ranked separately (see appendix D). The most representative was given a rank
of 1, second was given a 2, and third was given a 3. The music that received the lowest average number of points was then used in the experiment.

Table I shows the results of the way each judge ranked the selections.

The music with the lowest mean rank was chosen for the experiment: it may be seen in Table I that Beethoven’s Symphony No. 3, first movement, was chosen as the most representative of the classical music over the other two selections in the classical category. Bartok’s Concerto for Orchestra, first movement, was voted most representative of the twentieth-century classical category.

The jazz music was selected from Down Beat magazine. Every two weeks reviews of jazz records are made by authorities in the area of jazz. The records are rated by stars: if a record receives five stars it is considered to be an excellent record, if a selection receives one star it is considered to be a poor record. The record chosen to represent the jazz type of music was Dave Brubeck’s recording of Countdown: Time in Outer Space. This record received a five star rating in the March issue of the Down Beat magazine.

The popular music was chosen by referring to the Music Vendor, a musical magazine frequently used by disc jockeys to inform them as to what records are being played and bought throughout the United States. The three records chosen to constitute the popular music were: Walk Right In by the Rooftop Singers, Duane Eddy’s Boss Guitar, and Limbo Rock by Chubby Checker. These records were chosen because they were in
### TABLE I

**JUDGES RANKS AND MEAN RANKS OF THREE SELECTIONS AS REPRESENTATIVE OF CLASSICAL AND 20TH CENTURY CLASSICAL MUSIC**

<table>
<thead>
<tr>
<th>Classical</th>
<th>Judge</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>(\bar{x})</th>
<th>20th Century</th>
<th>Judge</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>(\bar{x})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mozart</td>
<td></td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2.0</td>
<td>Bartok</td>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Beethoven</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1.3</td>
<td>Shoenberg</td>
<td></td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Brahms</td>
<td></td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2.6</td>
<td>Ussachevsky</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3.0</td>
</tr>
</tbody>
</table>


the top 25 records based on sales and records played for the week that
the experiment was conducted and were also suggested by disc jockeys of
the local radio station, KAYS.

The musical selections chosen played for ten minutes or longer
except for the popular music. Three selections had to be used for the
popular category to obtain ten minutes of music. All of the music
chosen for the experiment was instrumental except the popular music.
This appeared acceptable to the experimenter since popular music char-
acteristically uses vocalization. Familiarity of the music was not a
problem.

Wiebe (1940) found that extensive playing of popular music over
the radio did not increase a S's like for it. It was also suggested by
Wiebe that popular music is liked almost immediately by the people who
are prospective "likers" of popular music. This enjoyment, however,
continues for a period, then the "liking" drops off sharply. These
findings are applicable to only popular music and do not apply to the
other forms of music used in the experiment. Because of Wiebe's find-
ings, the popular selections were included, despite the possibilities of
the Ss being familiar with the music.

Apparatus. The apparatus used consisted of a Roberts 1040 tape
recorder and a Viking 186 tape recorder, both of which were four track
machines. Five clocks were used: four to record the S's listening
time for each of the four types of music and one to record total
listening time. A main switch was used to enable the experimenter to
start and stop listening periods when the predetermined listening time had expired (see Figure 1, for experimenter's view of apparatus).

A response panel with four numbered buttons and a blue light was positioned in front of the S along with a ten-inch speaker. Each time the S pressed a different button a type of music would play. The blue light on the control panel was manipulated by the experimenter's master switch and functioned as a signal to indicate when a S should start and stop his intervals by pressing his choice of buttons (see Figure 2, for S's view of the apparatus). Pressing each button completed the circuit from one of the tape heads to the speaker to produce one of the four types of music.

For a wiring diagram of the entire apparatus see Appendix E.

Subjects. Two groups of 29 subjects were matched on the basis of their sex and KAT scores. One S of each pair had an Otis I.Q. of 120 or over and the other member of the pair had an I.Q. of 105 or below (see Table II). Seventeen men and twelve women were selected for each group on the basis of the above criteria from a total of 230 students. All Ss were volunteers.

The subjects were students chosen from five general psychology classes; no student asked to participate in the experiment refused to serve. Since all students are required to take general psychology, the Ss differed from the population of students only in that they were mostly freshmen and in that the middle range of I.Q. was eliminated.

Procedure. Each of the fifty-eight Ss that had met the selection criteria responded by marking the four rating scales so a verbal prefer-
FIGURE 1

EXPERIMENTER'S VIEW OF APPARATUS
FIGURE 2

SUBJECT'S VIEW OF THE APPARATUS
### TABLE II

RANGES AND MEAN I.Q. OF STUDENTS TESTED TO PARTICIPATE IN THE EXPERIMENT

<table>
<thead>
<tr>
<th>Groups</th>
<th>Ranges</th>
<th>Mean I.Q.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Intelligence</td>
<td>120 - 133</td>
<td>125</td>
<td>29</td>
</tr>
<tr>
<td>Low Intelligence</td>
<td>85 - 105</td>
<td>101</td>
<td>29</td>
</tr>
</tbody>
</table>
ence of four types of music could be obtained. A ruler was then laid along the continuous line of the scale to obtain a numerical measurement of each Ss "like" or "dislike" of the types of music.

After a period of two weeks had elapsed, each S's behavioral preferences for the four types of music were obtained individually by means of the tape recordings and apparatus described previously. All Ss were read the instructions (see Appendix F) which explained how the apparatus worked and what procedure they were to follow.

One of the four types of music was recorded on each of the four tracks of the two tape recorders. During the listening periods all tapes were running through the tape heads and the S could listen to any one of them by merely pressing one of the four buttons on his response panel. Each time a button was pressed, turning on one of the types of music, a timer recorded the time that particular type of music was playing.

First, each S listened to the four types of music for thirty seconds in a random order. He was told which button to press for each thirty second period. A different random order was used for each S. Then the behavioral preferences were obtained by allowing each S to listen to his choice of the four types of music for a ten minute period, listening for as long a period as he desired to any of the four types.

In summary, the following data were obtained from the subjects:

1) Otis I.Q. scores,
2) KAT scores,
3) verbal preferences for each of the four types of music,
4) behavioral preferences for each of the four types of music.
CHAPTER IV

RESULTS

The data obtained in this study can be seen in Table VI and VII of Appendix G. In this table it can be seen that the KAT scores are paired in a manner so that a person in the High I.Q. group is matched within one point on the KAT scale with a person in the Low I.Q. group. Thus the high and low intelligence groups were equated for knowledge and training in music.

The first part of the experiment was to determine whether preferences for types of music differed for the high and low intelligence groups. For this purpose behavioral scores were used. These time scores were considered to be more adequate for analysis since they were considered to be theoretically more objective. The Wilcoxin matched-pairs signed-ranks test (Siegel, 1956, p. 93) was applied to these scores separately for each type of music. The verbal preferences scores were also analysed by a Wilcoxin matched-pairs test. Table III and IV show the results of the analysis of the Behavioral Preference Scores and Verbal Preference Scores.

The larger Semi Inter Quartile Ranges of the behavioral preferences came about by Ss listening to one type of music for long periods of time and sometimes neglecting one or two types of the other music completely. The majority of the Ss did listen to all four types of music, however.

When the Wilcoxin test is used, magnitude is taken into consideration between pairs. In the analysis it was noticed that the differ-
ences did not cluster at the low rank end of the rank order and high T scores were the result. The T scores are listed in Table III. Since the T of 153 for the twentieth-century classical category is not significant, the other scores being higher show no significant differences either. When magnitude of difference is ignored and a sign test is applied to the data, there is a significant difference (p = .05) between the high and low intelligence group on the twentieth-century classical group only. The Ss in the low intelligence group listened to the twentieth-century classical group (18 Ss in low group beat their matched pair in the high group, 8 differences were in the opposite direction and 3 tied).

When the Wilcoxin sign test was applied to the Verbal Preference scores, T scores of 153 or better were obtained for all types of music except jazz which yielded a T value of 116. This value was significant at the (p = .03) level of significance indicating that the Low Intelligence group professes to enjoy jazz. Table IV shows the summary values obtained from the Verbal Preferences. It can be seen that these values are not as widely distributed as were the behavioral preferences.

The second part of the experiment was to ascertain which of the groups, high or low intelligence, demonstrate the most agreement between verbal and behavioral preference. The raw data obtained can be seen by referring to Table VI and VII of Appendix G. Coefficients were obtained correlating the behavioral preference scores with the verbal preference scores separately for each type of music. This process was employed for both the high and low intelligence groups so that the end result yielded four correlations for the high intelligence group and four correlations
TABLE III

SUMMARY OF BEHAVIORAL PREFERENCE SCORES AND WILCOXON T SCORES

<table>
<thead>
<tr>
<th>Type of Music</th>
<th>High Intelligence</th>
<th>Low Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Med.</td>
<td>Semi Inter Q. Ranges</td>
</tr>
<tr>
<td>Jazz</td>
<td>151.0</td>
<td>137.42</td>
</tr>
<tr>
<td>Popular</td>
<td>105.0</td>
<td>181.92</td>
</tr>
<tr>
<td>20th Century Classical</td>
<td>25.0</td>
<td>52.51</td>
</tr>
<tr>
<td>Classical</td>
<td>126.75</td>
<td>144.5</td>
</tr>
</tbody>
</table>

* T of 134 or less required for significance at .05 level.
### TABLE IV

**SUMMARY OF VERBAL PREFERENCE SCORES AND WILCOXIN T SCORES**

<table>
<thead>
<tr>
<th>Type of Music</th>
<th>High Intelligence</th>
<th>Low Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Med.</td>
<td>Semi Inter Q. Ranges</td>
</tr>
<tr>
<td>Jazz</td>
<td>59.56</td>
<td>14.75</td>
</tr>
<tr>
<td>Popular</td>
<td>68.0</td>
<td>8.85</td>
</tr>
<tr>
<td>20th Century Classical</td>
<td>44.75</td>
<td>11.43</td>
</tr>
<tr>
<td>Classical</td>
<td>52.00</td>
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</tr>
</tbody>
</table>

* T of 134 or less required for significance at .05 level.

^a Significant at .03 level.
## TABLE V

CORRELATIONS AND t-TESTS ON AGREEMENT OF VERBAL AND BEHAVIORAL PREFERENCE

<table>
<thead>
<tr>
<th>Type of Music</th>
<th>High Intelligence</th>
<th>Low Intelligence</th>
<th>Both Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>rᵣ</td>
<td>rᵣ</td>
<td>t*</td>
</tr>
<tr>
<td>Jazz</td>
<td>.51</td>
<td>.48</td>
<td>.11</td>
</tr>
<tr>
<td>Popular</td>
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<td>.54</td>
<td>1.66</td>
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<tr>
<td>Twentieth-Century Classical</td>
<td>-.07</td>
<td>.36</td>
<td>1.62</td>
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<tr>
<td>Classical</td>
<td>.55</td>
<td>.28</td>
<td>1.22</td>
</tr>
</tbody>
</table>

* t of 2.045 or greater is necessary for significance at the .05 level.
for the low intelligence group— one for each type of music. The corre-
lations obtained for the high and low intelligence groups were compared
by means of t tests (Guilford, 1955, p. 192) to determine if there were
any significant differences in the amount of agreement between Verbal
Preference and Behavioral Preference for the two groups.

Table V shows the correlations, and the t values obtained on
each type of music used in the experiment. For a significant t
(p = .05 with 29 d.f.), 2.045 is necessary. Examination of Table V
shows that none of the t values were significant. The two groups do not
differ with regard to the amount of agreement between behavioral and
verbal preference.
Problem I

Rubin-Rabson states:

Historical perspective tempers dogmatism in aesthetic judgment. Transformations in artistic taste appear in every area and in every age, the aesthetic criteria shift with succeeding generations. Restricting laws which have been formulated in the establishment of a "musical science" apply only to the age in which they were enunciated and become invalid for the next. (1940, p. 413)

There appears to be, from the material reviewed and the results obtained in the present experiment, a disagreement in the findings. In Rubin-Rabson's (1940) study it was found that intelligence is somewhat higher among the people who prefer modern music. It was also found that the intelligence levels were somewhat lower for the individuals who prefer classical music. The following experiment does not corroborate Rubin-Rabson findings.

Although some differences did exist between the two experiments some trend or sign should have been present to verify the Rubin-Rabson results. Total listening time, ranges of intelligence, and training were highly similar in the two studies. Yet with the final results no significance was observable when the behavioral preferences were analyzed. In one case results were obtained that were directly opposite (lower intelligence group preferred twentieth-century classical significant at the $p=.05$ level) to her findings.

In the present investigation a statistical test of significance was used which was superior to the correlation technique used by
Rubin-Rabson (1940). Another weakness of her study was that two intelligence groups were not used so that individuals could be compared on the basis of intelligence and training. Since the statistics in the present investigation were superior, in that they equated for differences between the high and low group it is hypothesized that the present study is the better of the two.

Rubin-Rabson (1940) ascertained verbal preferences by playing records and letting the Ss rate the music on a five point basis, 1, was "extreme dislike" and 5, was "extreme like." In the present study Ss' listening times were recorded to indicate the Ss' "like" or "dislike" of a type of music. The type of procedure used in the present study is superior to that used by Rubin-Rabson, because it yields the actual time each S listens to each type of music. As such, it is a more direct measure of preference than a verbal report. In the analysis no significant differences were found between the behavior preferences of high and low intelligence groups for classical and twentieth-century classical music. It was also found that the high and low intelligence groups did not differ significantly in their behavioral preferences when popular and jazz types of music were considered. All of the findings thus far reported were determined by using the Wilcoxin matched-pairs signed-ranks test. When an ordinary sign test with which the magnitude of the scores is not considered, was applied to the data it was found that the lower intelligence group preferred twentieth-century classical (significant at the p= .05 level). This is contrary to the Rubin-Rabson finding.
When the Wilcoxon test was used on the verbal preference scores there was again only one significant finding. This was that the group of lower intelligence preferred jazz (significant at the $p = .05$). It is speculated by the experimenter that the low group chose jazz because they thought they "ought" to. This group showed a significant verbal preference for jazz. However, the same results were not obtained when the behavioral preferences were analyzed.

Since there seems to be a difference in the findings of the present experiment when compared with Rubin-Rabson's (1940) investigation it might be concluded that 20 years can make a difference in results obtained even with a similar experiment. In the quote stated by Rubin-Rabson it is suggested that restricting laws exist so that an experiment valid for one age may not be the same in the next.

It should also be considered that locality would have a good deal to do with an experiment of this type. Where Rubin-Rabson's (1940) investigation was conducted in a large city, the present investigation was carried-out in a small college community, cultural differences between two such communities would invariably appear. Also, the age range of Rubin-Rabson's Ss was greater than the age range of the Ss used here. Another difference between the two experiments worth consideration is that the actual musical selections were different. This, however, does not mean they were structurally different, because her classical was similar to the classical used in the present study and her modern classical was similar to the twentieth-century classical used in the present study. One discrepancy noticeable in the present investigation
that could have been a drawback was the choice of the twentieth-century classical music. It was noticed by the experimenter that several quiet passages existed in this selection and when a subject would sample this type of music chances were he would hit a quiet passage and change to another type of music immediately.

Problem II

Fisher (1940) reports a discrepancy between the music that one says he likes as compared to the music that he really likes. The second part of the experiment was designed to see what group, the high or low intelligent manifested the most agreement between their verbal and behavioral preferences. It was hypothesized that the lower intelligence group would show more agreement because the higher intelligent group found it more "fashionable" to say they liked one of the modern forms of music. As can be seen in Table III there is a trend, although not significant, in the opposite direction. It can be seen that neither of the two groups showed a significant difference in the amount of agreement between the verbal and behavioral preferences when the types of music were analyzed. It is interesting to note that there seems to be more agreement in the higher intelligence group on at least three of the types of music when the raw correlations are considered. This trend suggests that the higher intelligence group manifests more agreement between what they say they like and what they listen to. The minus correlation obtained on the twentieth-century classical could be due to the particular piece of music chosen for the experiment. During the course of the experiment it was noticeable that several soft passages
existed in Bartok's recording which could have prevented a S from being interested in the music if he pressed a button at one of these points.
CHAPTER VI

SUMMARY

Behavioral and verbal preferences for four types of music were obtained from a group of 29 Ss of high intelligence and 29 Ss of low intelligence. The Ss of the low intelligence group were matched with Ss of the high intelligence group on the basis of knowledge and training (KAT) in music. Four types of music were used in the experiment: twentieth-century classical, jazz, popular, and classical. Verbal preferences were those preferences obtained by having a S mark a continuous scale to indicate his "like" or "dislike" of each type of music. Behavioral preference was determined by S's listening time when he had a choice of listening to any of the four types of music.

Problem I was to determine which of the two intelligence groups preferred which type of music and to determine if the higher intelligence group would show greater preference for the modern forms (twentieth-century classical and jazz) of music as was found in the Rubin-Rabson (1940) investigation. The behavioral preferences were analyzed by means of the Wilcoxon matched-pairs signed rank test which indicated that there were no significant preferences afforded by either the high or low intelligence groups. A less sensitive "Sign Test" indicated that the low intelligence group significantly preferred the twentieth-century classical type (P= .05). Verbal preferences were analyzed by the same statistic which showed that the low intelligence group preferred jazz significantly more than the high intelligence group. This finding was not verified when the behavioral preferences were analyzed.
Problem II was an attempt to discover which of the two groups showed the most agreement between their behavioral and verbal preferences for each of the four types of music. Eight correlations were computed—one for each type of music for both the high and low intelligence groups. No significant differences were found to exist in the amount of agreement shown between the two groups when t tests were used on the correlations. When raw correlations were considered there was a definite trend for the high I.Q. group to show more agreement between the Verbal and Behavioral Preference.

The results in the present study disagree with the findings of Rubin-Rabson's (1940) study. Since a more sensitive statistic was used in the present study than just face value correlations as was done in the Rubin-Rabson's (1940) study, the present study appears to be the more adequate of the two. However, since there is a discrepancy between the two studies, it seems that locality, lapses of time between studies or perhaps actual music used in the investigations should be considered as relative to the final outcomes of the two studies. It is also worth mentioning that the age range of Rubin-Rabson's Ss was greater than the age range of the Ss used in the present investigation. This may have affected the differences in results between the two studies.
REFERENCES


REFERENCES


APPENDICES
Appendix A

Question No. 1. Subject playing a musical instrument for

- 0 years received 1 point
- 1 to 4 years received 2 points
- 5 to 9 years received 3 points
- 10 to 19 years received 4 points
- 20 or more years received 5 points

Question No. 2, 3, 4, and 5... If the subject answered yes he received
1 point for each yes answer.

Question No. 6. Subject received 1 point for each of the five areas of study when a check mark was made to indicate
a yes response.

Question No. 7. Subjects received 1 point for each complete essay placed into the appropriate category after the exam.

Possible Points Possible = 46

Correct Points Possible = 40

Range of Scores Obtained = 1 to 46
KEY FOR SCORING QUESTIONNAIRE
OF MUSICAL KNOWLEDGE
SCORES

Question No. 1. Subjects playing a musical instrument for

- 3 years or less received 1 point
- 2 to 4 years received 2 points
- 5 to 8 years received 3 points
- 9 to 12 years received 4 points
- 13 or 17 more years received 5 points

Question No. 2, 3, 4, and 5. If the subject answered yes he received
1 point for each yes answer.

Question No. 6. Subjects received 1 point for each of the five areas
of study when a check mark was made to indicate
a yes response.

Question No. 7. Subjects received 1 point for each composer that was
placed into the appropriate century of which his
greatest work belonged.

Maximum Points Possible = 24
Minimum Points Possible = 0

Range of Scores Obtained = 1 to 24
**APPENDIX B**

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</table>

*Note: The table above is a placeholder for data that needs to be filled in.*
Please answer the following questions to the best of your ability in the spaces provided. "Yes" and "No" answers are to be entered in the spaces at the left of the question.

1. Have you studied a musical instrument? If so, how long, _____ years.

2. Does any member of your family play a musical instrument? If so, give name of instrument.

3. Have you been a member of any musical organization such as singing groups, glee clubs, bands, etc.?

4. Have you frequently attended concerts where classical or jazz music was played?

5. Do you hear 20th century classical music at home, at concerts or on the radio?

6. Have you had any training in any of the following areas? If so, check the area that you have had training in.

   A. Theory of music
   B. Composition
   C. History and appreciation
   D. Ear training
   E. Sight reading

7. Place the following men in the century to which his major compositions belong by placing a check mark in the column representing what you think is the appropriate century.

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<tr>
<th>NAME</th>
<th>14th</th>
<th>15th</th>
<th>16th</th>
<th>17th</th>
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<td>Hindemith</td>
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</table>
These are the rating scales to be marked by you to answer the questions. There are four types of music. To help you distinguish the types of music, musical terms or categories have been placed by each of the boxes of music with which they are associated.

Mark each of the rating scales according to your "like" or "dislike," by placing a numerical mark on the line at the place which best suits your preference for the music.

<table>
<thead>
<tr>
<th>Very much</th>
<th>Dislike</th>
<th>Indifferent</th>
<th>Like</th>
<th>Very much</th>
</tr>
</thead>
</table>

APPENDIX C

Shirley Chapman, The Longest Steppe, Piano Voly

CH HALL
Lord, Makin, Westminster

SEVENTH CENTURY CLASSICS
Sentencing, Substantive, Legal

JAZZ
Kris Davis, Dave Greenspan, Oscar Peterson
These are four rating scales to be marked by you in order to ascertain your preference (like or dislike) for four types of music. To help you distinguish the types of music, musicians or composers have been placed by each of the types of music with which they are associated.

Mark each of the rating scales according to your "like" or "dislike," by placing a vertical mark on the line at the place which best suits your preference for the music.

**dislike**   **dislike**   **indifferent**   **like**
**very much** **dislike**                  **like**

---

**POPULAR**
Chubby Checker, The Rooftop Singers, Duane Eddy

---

**CLASSICAL**
Liszt, Brahms, Beethoven

---

**20TH CENTURY CLASSICAL**
Schoenberg, Stravinsky, Ravel

---

**JAZZ**
Miles Davis, Dave Brubeck, Oscar Peterson
Please rank order the musical selections listed below as you think untrained listeners would consider them as representations of "classical" music. Most representative = 1, Second = 2, and Third = 3.

Beethoven - Symphony No. 5, First Movement

Mozart - Symphony No. 41, Third Movement

Mahler - Symphony No. 5, First Movement

The selections listed below have been entitled, for experimental purposes, 20th Century Classical Music. Please rank order the musical selections as you think untrained listeners would consider them as representations of 20th Century Classical Music, Most representative = 1, Second = 2, and Third = 3.

Britten - Serenade for Orchestra, First Movement

Schoenberg - Gurrelieder, Symphony (1917)

Verdovsky - Piano for Four Hands

APPENDIX D
Please rank order the musical selections listed below as you think untrained listeners would consider them as representations of "Classical" music. Most representative = 1, Second = 2, and third = 3.

Mozart - Symphony No. 38 First Movement
Beethoven - Symphony No. 3 First Movement
Brahms - Symphony No. 1 First Movement

The selections listed below have been entitled, for experimental purposes 20th Century Classical Music. Please rank order the musical selections as you think untrained listeners would consider them as representations of 20th Century Classical Music. Most representative = 1, second = 2, and third = 3.

Bartok - Concerto for Orchestra First Movement
Schoenberg - Chamber Symphony (1939)
Vissachevsky - Piece for Tape Recorder
APPENDIX F

[Text not legible due to poor image quality]
INSTRUCTIONS READ TO SUBJECTS TO ACQUIRE A BEHAVIORAL PREFERENCE

PART I OF INSTRUCTIONS

Listen carefully, you are going to listen to four types of music. Each different type is represented by the buttons labeled one, two, three and four. First of all you are going to listen to each of the four types of music for thirty seconds. The thirty second listening periods will start when the blue light goes on and stops when the blue light goes off. When the blue light comes on you are to press the button that I direct you to press for thirty seconds, remember just hold the button down for as long as the blue light is on, when the light goes off release the button immediately. Remember when the blue light is on you press the button that I have directed you to press. When the light goes off you release the button immediately. Are you ready? The first button is: the order of numbers will be determined by way of random numbers.

PART II OF INSTRUCTIONS

You have listened to each of the four types of music for thirty seconds. Now you will have a ten minute listening period to listen to any of the music that you prefer. Remember all you have to do now is listen to any of the four selections that you prefer by pressing one of the buttons. You may change from one selection to another as you wish by taking your finger from one button and pressing another. Listen to those you like the best. You may listen to all of a selection or just part of it--anyway you wish. You will begin your ten minute
listening period when the blue light goes on and stop when the light goes off. Are there any questions?
### TABLE VI

**FIFTY-EIGHT SS KAT SCORES AND VERBAL PREFERENCES OF FOUR TYPES OF MUSIC**

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<th>S No.</th>
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<th>C</th>
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### TABLE VII

FIFTY-EIGHT Ss KAT SCORES AND BEHAVIORAL PREFERENCES OF FOUR TYPES OF MUSIC

<table>
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<tr>
<th>S No.</th>
<th>KAT</th>
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<th>Behavioral Preferences</th>
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| 1 | 1 | 98 | 119 | 185 | 169 | 1 | 2 | 140 | 316 | 0 | 145 |
| 2 | 2 | 370 | 25 | 12 | 195 | 2 | 2 | 354 | 86 | 30 | 125 |
| 3 | 3 | 600 | 0 | 0 | 0 | 3 | 3 | 593 | 0 | 0 | 0 |
| 4 | 4 | 389 | 12 | 0 | 199 | 4 | 3 | 92 | 354 | 16 | 109 |
| 5 | 4 | 135 | 140 | 0 | 0 | 5 | 4 | 0 | 121 | 57 | 120 |
| 6 | 4 | 0 | 600 | 0 | 0 | 6 | 4 | 165 | 170 | 124 | 141 |
| 7 | 5 | 0 | 127 | 199 | 275 | 7 | 5 | 0 | 0 | 280 | 320 |
| 8 | 5 | 435 | 20 | 30 | 110 | 8 | 5 | 290 | 90 | 123 | 94 |
| 9 | 6 | 510 | 0 | 0 | 85 | 9 | 6 | 252 | 21 | 125 | 200 |
| 10 | 6 | 435 | 14 | 16 | 110 | 10 | 7 | 124 | 388 | 88 | 0 |
| 11 | 7 | 585 | 15 | 0 | 7 | 7 | 106 | 196 | 115 | 189 |
| 12 | 8 | 97 | 165 | 12 | 330 | 12 | 8 | 26 | 155 | 110 | 217 |
| 13 | 8 | 438 | 9 | 105 | 0 | 13 | 7 | 227 | 93 | 63 | 220 |
| 14 | 8 | 164 | 12 | 110 | 286 | 14 | 8 | 115 | 6 | 0 | 110 |
| 15 | 10 | 0 | 0 | 0 | 599 | 15 | 9 | 184 | 116 | 0 | 297 |
| 16 | 9 | 105 | 303 | 112 | 56 | 16 | 9 | 139 | 169 | 33 | 259 |
| 17 | 11 | 47 | 0 | 0 | 550 | 17 | 10 | 285 | 0 | 0 | 315 |
| 18 | 3 | 0 | 406 | 193 | 0 | 18 | 3 | 142 | 39 | 25 | 42 |
| 19 | 9 | 0 | 148 | 105 | 317 | 19 | 9 | 120 | 255 | 110 | 115 |
| 20 | 9 | 0 | 211 | 120 | 239 | 20 | 9 | 0 | 0 | 600 | 0 |
| 21 | 9 | 172 | 121 | 0 | 315 | 21 | 9 | 102 | 169 | 290 | 14 |
| 22 | 10 | 216 | 190 | 50 | 111 | 22 | 10 | 185 | 122 | 86 | 210 |
| 23 | 10 | 82 | 127 | 105 | 198 | 23 | 10 | 0 | 528 | 70 | 0 |
| 24 | 10 | 18 | 350 | 25 | 205 | 24 | 10 | 115 | 101 | 58 | 311 |
| 25 | 10 | 68 | 316 | 37 | 151 | 25 | 11 | 0 | 275 | 325 | 0 |
| 26 | 12 | 0 | 100 | 92 | 1408 | 26 | 12 | 128 | 164 | 0 | 302 |
| 27 | 12 | 123 | 476 | 0 | 0 | 27 | 12 | 0 | 0 | 414 | 166 | 0 |
| 28 | 13 | 350 | 105 | 62 | 83 | 28 | 13 | 0 | 307 | 292 | 0 |
| 29 | 14 | 423 | 179 | 0 | 0 | 29 | 14 | 0 | 528 | 72 | 0 |

* Scores are reported in seconds.