

OPEN AND CLOSED BELIEF SYSTEMS AS CORRELATES OF
THE ACCEPTANCE OF NEW MUSIC AND ITS COMPOSERS

by

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AN ABSTRACT

Submitted to the School for Advanced Graduate Studies of
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Approved by Milton Rokeach

Three interrelated experiments were undertaken within the conceptual framework of Rokeach on open and closed belief systems. The purpose of Experiment I was to investigate the relationship between open and closed belief systems and response to new music. From the theoretical model it was hypothesized that those with closed belief systems would be less accepting of new music than those with open belief systems. It was further hypothesized that those with closed belief systems would be less accepting of the composer than those with open belief systems.

One hundred and thirty-three sophomore students who had taken the Dogmatism Scale, the measure of open and closed belief systems, were exposed to two unfamiliar samples of music, one conventional as exemplified by Brahms, and the other extremely modern as exemplified by Schonberg. The results support the hypotheses that those with closed belief systems are less accepting of the new music and of the composer than those with open belief systems. No significant differences were found between these groups in age, intelligence as measured by the ACE, acceptance of conventional music, or knowledge about music as measured by a composer-composition matching test.

Experiment II was designed to re-test the previous hypotheses and to test two additional ones: given successive exposures to new music, those with relatively open belief systems would show a significantly larger gain in acceptance of the new music than those with closed belief systems. A parallel hypothesis was made concerning composer acceptance.

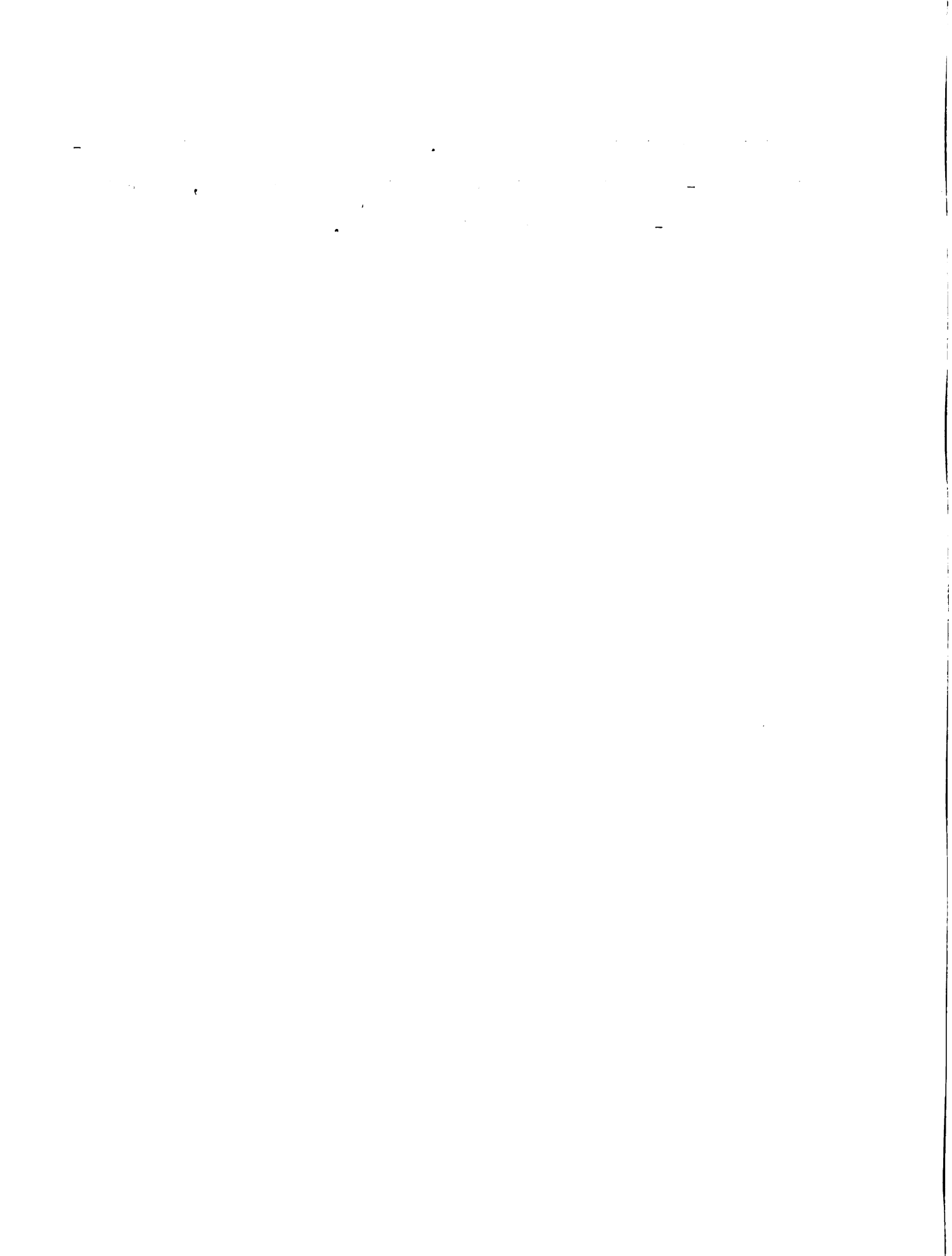
Brahms and Saint-Saens were used as samples of conventional music and Schonberg and Bartok as samples of new music. The results supported the hypotheses as they relate to Schonberg and his music but not to Bartok or his music. Schonberg's music was interpreted as being more extremely new than Bartok's music.

In Experiment III, the relationship between affect and cognition was explored. A cognitive task requiring both the overcoming and the integration of sets was used, and hypotheses were formulated that individuals most negative in their feelings about a new musical system would be slower in solving the problem and would find greater difficulty in integrating the sets into a new belief system than individuals extremely positive in their feelings about new music.

On the basis of their responses to a musical situation modeled after Experiment II, two groups of subjects were chosen to perform individually in the cognitive task. The groups were matched on acceptance of conventional music but as different as possible in the acceptance of new music. Though no significant differences were found, they were in the direction predicted by the hypotheses, suggesting that a low order relationship may exist between acceptance of new music and performance in a cognitive task.

Failure to confirm the hypotheses was explained in terms of the differences in the nature of the two tasks, i.e., reacting to music vs. solving a problem, and in terms of statistical considerations given the results of the previous study. An alternative hypothesis positing a parallelism between the range of affect and the range of

cognitive functioning was suggested. Affective narrowing is hypothesized to co-occur with cognitive narrowing and conversely, affective openness to co-occur with cognitive openness.



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CHAPTER I

INTRODUCTION

Purpose of the Study

The present investigation is concerned with the relationship between closed and open belief systems and the acceptance of new music and its composers. Considerations leading to hypotheses concerning the nature of these relationships stem from the theoretical model of Rokeach (19, 21, 22). The set of experiments presented here is part of a larger body of ongoing research which is cast within this framework.

The Concept of the Belief-Disbelief System

The model of cognitive organization developed by Rokeach is a three dimensional one consisting of belief-disbelief, central-peripheral, and time perspective dimensions. Each of these dimensions has additional properties. All are, however, reducible to one single dimension, namely, organization along a continuum from open to closed. In the following account, the belief-disbelief and central-peripheral dimensions alone bear on the present research and will be discussed. For a fuller account, the reader is referred to Rokeach (19, 21, 22).

The Belief-Disbelief Dimension

The basic construct of the conceptual model is the belief-disbelief system. The belief system is conceived to represent or

QUESTION 1

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- The first part of the question asks you to identify the type of research design used in the study. The study is a longitudinal study because it follows the same group of people over time.
- The second part of the question asks you to identify the independent and dependent variables. The independent variable is the type of music (classical vs. pop) and the dependent variable is the number of hours spent listening to music.
- The third part of the question asks you to identify the confounding variables. Confounding variables are variables that are not being studied but that may affect the results of the study. In this case, confounding variables could include the age of the participants, their income, and their education level.

QUESTION 2

QUESTION 2

- The first part of the question asks you to identify the type of research design used in the study. The study is a cross-sectional study because it collects data from different groups of people at the same time.
- The second part of the question asks you to identify the independent and dependent variables. The independent variable is the type of music (classical vs. pop) and the dependent variable is the number of hours spent listening to music.
- The third part of the question asks you to identify the confounding variables. Confounding variables are variables that are not being studied but that may affect the results of the study. In this case, confounding variables could include the age of the participants, their income, and their education level.
- The fourth part of the question asks you to identify the strengths and weaknesses of the study. One strength of the study is that it is relatively easy to conduct and collect data. One weakness is that it cannot establish a causal relationship between the type of music and the number of hours spent listening to music.

QUESTION 3

contain all the beliefs, sets, expectancies or hypotheses, conscious or unconscious, which a person at a given time accepts as true of the world he lives in. The counterpart of a belief system is not one single disbelief system but several disbelief sub-systems representing multiple disbeliefs rather than one single disbelief. Within each of these sub-systems is represented all the disbeliefs, sets, expectancies or hypotheses, conscious or unconscious which a person at any given time rejects as false to one degree or another. For example, a person who believes that the Classic period in history produced the greatest music, may in varying degrees believe that Romantic, Impressionistic, Neo-Classic and Jazz music are less great. In the limiting case, he might believe that only the music of the Classic period is worthwhile, the music of other periods to be rejected as unworthy to one degree or another.

The belief-disbelief dimension is conceived to have several additional properties in terms of which it may vary. Important in the present context is the property of isolation. This refers to the degree of communication or interconnectedness existing between and within the belief and disbelief system. One manifestation of isolation is the accentuation of differences and minimization of similarities between belief-disbelief systems. For example, some may insist that Jazz and Classical music have nothing in common or that oriental and occidental music are completely different. As pointed out by Rokeach (19), at one level, such accentuation of differences may be viewed as attempts to ward off threat to the validity of one's own system. From a structural standpoint, they

may be viewed in terms of an underlying isolation between belief and disbelief systems.

The belief-disbelief system is conceived to include the entirety of all beliefs about the physical world, ideological beliefs, and pre-ideological beliefs (i.e., highly personalized beliefs about the physical world, nature of self, etc.). The disbelief system is assumed to be arranged on a continuum of similarity with the belief system. In operational terms, this would mean that, were an individual to change from one belief system to another, he would be expected to change to a belief system which is more similar rather than less similar to his belief system. Parallel to and isomorphic with the belief-disbelief system is conceived to be a series of positive and negative authorities. As an example, an individual who believes strongly that only Beethoven wrote great music would see Schonberg, Stravinsky, Ravel, and Bartok as negative musical authorities.

The Central-Peripheral Dimension

The belief-disbelief system is conceived as organized along a central-peripheral dimension. The central region has to do with beliefs, the specific content of which pertains to the nature of physical reality and the nature of the social world--benign or hostile, i.e., whether parental authority figures are kindly or threatening.

The intermediate region has to do with the beliefs concerning the nature of authority. The interest here is in the formal, rather

than the specific, content of a belief. Important here are the formal similarities in thought and belief among persons adhering to different ideologies, i.e., the manner of believing rather than the content of the belief. By analogy, what arithmetic is to specific content, algebra is to formal content. Thus two persons may agree that there is such a thing as absolute authority, one true cause, one true Bible, only one kind of art. They may differ sharply as to who is the absolute authority, what is the true cause, the true Bible and the one kind of art. The style of believing is the same for both individuals, though the content of their beliefs may be quite opposed.

Beliefs about authority often color beliefs and feelings about people in general. People are sometimes evaluated according to the authorities they follow, so that the accepting and rejecting of people is tied to the accepting or rejecting of their ideas. This tie manifests itself in (1) opinionated rejection - which refers to the use of phrases which imply rejection of a belief and at the same time, rejection of persons who accept it. "You'd have to be stupid to believe that" (2) Opinionated acceptance - which refers to the acceptance of a belief and at the same time a qualified acceptance of those who agree with it. "Any well-informed person knows that"

The peripheral region represents beliefs and disbeliefs which derive from positive and negative authority, with or without awareness on the part of the individual believer.

The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text outlines various methods for organizing and storing data, including digital databases and physical filing systems.

In the second section, the author explores the challenges associated with data security and privacy. As technology advances, the risk of data breaches and unauthorized access increases. The document provides a comprehensive overview of best practices for securing sensitive information, such as implementing strong encryption protocols and regular security audits.

The third section focuses on the integration of data from multiple sources. This process is crucial for gaining a holistic view of an organization's performance and identifying trends. The text details the steps involved in data integration, from identifying data sources to ensuring data consistency and quality.

The fourth section discusses the role of data in decision-making. It highlights how data-driven insights can inform strategic planning and operational improvements. The author provides examples of how data analysis has been used to optimize business processes and increase efficiency.

The final section of the document addresses the future of data management. It discusses emerging technologies like artificial intelligence and machine learning, which are revolutionizing data analysis and processing. The text concludes by emphasizing the need for continuous learning and adaptation in the ever-evolving field of data management.

It may be said that it is the nature of the content of the central region of beliefs which leads to more generalized styles or forms of belief about authority (intermediate region) and the beliefs which derive from authority (peripheral region). As Rokeach (22) points out:

What is of major concern here is not so much the ideological content but rather the structural interconnections among peripheral beliefs and in turn, then the structural interconnections with those beliefs which have been represented as being within the intermediate and central region.

As stated at the outset, the entire model is reducible to one dimension, i.e., from open to closed. We quote below Rokeach's (23) definition of open and closed belief systems including only those aspects which are pertinent to the present research.

A belief-disbelief system is

OPEN

to the extent that, with respect to the organization along the disbelief continuum, there is communication of parts within and between the belief and disbelief system.

to the extent that, with respect to the organization along the central-peripheral dimension, the formal content of beliefs about authority and about people who hold to systems of authority is to the effect that authority is not absolute and that people are not to be evaluated (if they are to be evaluated at all) according to their agreement or disagreement with such authority or according to their agreement or disagreement with the beliefs such authority represents.

CLOSED

there is isolation of parts within and between the belief-disbelief system.

to the extent that, with respect to the organization along the central-peripheral dimension, the formal content of beliefs about authority and about people who hold to systems of authority is to the effect that authority is absolute and that people are to be accepted or rejected according to their agreement or disagreement with the beliefs such authority represents.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for ensuring transparency and accountability in financial operations. This section also highlights the role of internal controls in preventing fraud and errors.

2. The second part of the document focuses on the implementation of robust risk management strategies. It outlines various risk assessment techniques and provides guidance on how to identify, evaluate, and mitigate potential risks. The text stresses the need for a proactive approach to risk management to protect the organization's assets and reputation.

3. The third part of the document addresses the importance of effective communication and reporting. It discusses the need for clear and concise communication channels and the role of regular reporting in keeping stakeholders informed. This section also touches upon the importance of maintaining accurate financial statements and providing timely updates to management and investors.

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10. The tenth part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for ensuring transparency and accountability in financial operations. This section also highlights the role of internal controls in preventing fraud and errors.

Review of the Literature: Closed-to-Open Belief System

The Closed-to-Open dimension of the theoretical model has been reliably measured by the Dogmatism Scale (22) and empirically validated in several researches (23, 27). Typically the experimental strategy has been to invent, within the context of a problem, a fictitious world in which the laws are at variance with those of the every day world. The subject is required to break away from his present belief system and acquire a new belief system if he is to solve the problem. If his present belief-disbelief system is relatively closed, he would be expected to be slower in acquiring the new belief system.

That the Dogmatism Scale is a measure primarily of difficulty in acquiring systems of beliefs rather than individual beliefs has been shown in a study by Rokeach, McGovney and Denny (23). In a problem situation involving the overcoming of three separate sets or beliefs and the integration of these sets or beliefs into a new belief system, persons high in rigidity, as measured by the Sanford-Gough Rigidity Scale were found to be slower in overcoming each of the individual sets than persons low in rigidity. There was, however, no difference between individuals with relatively closed and relatively open belief systems, as measured by the Rokeach Dogmatism Scale, on the time taken to overcome the individual sets. By contrast, subjects scoring high on the Dogmatism Scale were found to be significantly slower than those with low scores in Dogmatism in integrating the three new sets once

they had overcome the three older sets. No differences were found between the high and low rigid groups with respect to the integration process. On the basis of these findings, the authors conclude that the greater difficulty shown by the subjects high in Dogmatism in integrating the new beliefs into a new system is a function of the stronger operation of systems of older beliefs which are organized into a relatively closed matrix. One of the theoretical implications drawn from these findings is that, while rigidity as a form of resistance to change, refers to the way a person solves or learns specific tasks, resistance to change as measured by the Dogmatism Scale refers to total cognitive organizations and systems of ideas and beliefs.

Vidulich (27) hypothesized that the greater difficulty in integration shown by subjects high in Dogmatism is a function of two factors: (a) greater rejection of the problem situation, and, consequently (b) poorer memory for the individual beliefs which must be integrated or brought into relevance to each other to solve the problem. Using the Dogmatism Scale and the same problem situation used by Rokeach, McGovney and Denny (23) the results indicate that those low in dogmatism accepted the problem and the beliefs significantly more than those high in dogmatism. Individuals low in dogmatism manifest at the end of the experiment a better incidental recall for the new beliefs than do individuals high in dogmatism.

The Problem

Theoretical Considerations Concerning the Use of Music

One of the basic assumptions guiding the formulation and conceptualization of the open-to-closed belief-disbelief system is the implied unity of style of believing, i.e., whether in a relatively open or closed manner, with a diversity of contents of belief. The belief-disbelief system is conceived as a form of belief organization which manifests itself regardless of the specific content of an ideology, whether religious, political or aesthetic. Thus, for example, the closedness aspect of two such diverse ideological contents as Catholicism and Communism were measurable with the same scale (21). It would appear that the greater the diversity among ideological contents, beliefs concerning which can be measured along the open-to-closed dimension by the same measuring scale, the more must the scale be tapping the style of believing rather than the specific content of a belief. Thus, music as different in content from any previously investigated within the present framework, allows a test of the basic assumption concerning the generality of the phenomena to which the notion of the closed or open belief system applies. Another way to state the basic assumption is that individuals with closed belief systems are assumed to render diverse belief contents as equivalent to the extent that the prerequisite for the acceptance of such beliefs is the shaking loose of previous patterns of belief.

Music affords an opportunity to expose subjects found to differ on the open-to-closed dimension of belief to a world of sound in which the laws governing its organization differ radically from those in the everyday world of music. The music of Arnold Schonberg written in the 'twelve tone technique'¹ seems particularly well-suited since the principles governing its construction differ radically from those involved in conventional music. For example, Schonberg's music is atonal, that is, written so that a key center² is avoided, while conventional music, as exemplified by the music of the nineteenth century has a definite key center and is therefore tonal. In Schonberg's music, the melodies are based upon the twelve tone row constructed according to certain rules³ while conventional melodies are based on major and minor scales. Schonberg's harmonies are based on the tone row, i.e., the tones of the row used not only in succession but simultaneously as well. In conventional music, the harmonies are based on the triad, i.e., chords built by

¹The twelve tone technique involves, among other things, the use of the twelve tones of the scale in a pre-determined succession called a 'row'.

²Key center refers to that tone which serves as a focus for the organization of a piece or a section. In twelve tone music, there are assumed to be twelve such foci of equal importance rather than a single one.

³An example of such a rule would be that the composer decides in advance in which order he will use the twelve tones. Should he decide, for his own aesthetic reasons that the order will be e.g., C, E flat, E, G#, B, D, C#, F#, F, G, A, B flat, this sequence of tones, called a tone row, is maintained either in its original form or is varied according to still other rules (e.g., played backward or inverted).

superimposing tones a fixed distance from each other, viz. the second tone adjacent on the staff.

The music of Bartok, though less rigorously systematized than some of Schonberg's music, differs in many respects from conventional music by virtue of the use of polytonality, i.e., the simultaneous use of two key centers as contrasted with the single key center of conventional music. Bartok's melodies are extremely angular (movement by leap) while conventional melodies are more linear (movement by step). Bartok's music is characterized by the frequent use of dissonance and rhythmic complexity, while the conventional music is relatively consonant and rhythmically less complex.

Because of its diversity as content from previously investigated contents of belief within the present framework, thereby allowing a test of the generality of the closed belief-disbelief system, and because it allows exposure of subjects to a new system of reality, music is chosen as the experimental medium with which to study the problem of this research, namely, the relationship between open and closed belief systems and acceptance of a new musical belief system on the one hand and acceptance of its innovator on the other hand. Having chosen music as the experimental medium, a review of the pertinent literature on the relationship between belief and music is in order before a definitive statement of the problem can be made.



Review of the Literature: Music and Belief

The literature here is extremely sparse. It appears that most experimenters in the area of music have dealt with the properties of the music itself rather than with individual differences in response to the music and the determinants or correlates of these differences. Thus, for example, the affective characteristics of the major and minor mode (10), the mood characteristics of speed (14), and of register and tonality (15) have been studied as have the pleasantness of musical intervals (26), and music as communication (18). Of the studies which have focused on individual differences in background, music preferences as a function of age and socio-economic groups in unstructured situations (6), and of age, intelligence and training in relation to classic and modern music (24) have been investigated.

Of the personality-centered studies, reaction to music as a function of personal insecurity (7), personality and behavior disorders (2), masculinity-femininity (5), and mood (25) have been investigated. Since none of the above treats the relationship between belief and musical preference, they would appear to only peripherally relevant to the present investigation.

Only one experiment could be found which deals with the relationship between belief and music preference. Rigg (16) found that when Wagnerian music was given an association with Hitler and German nationalism, it was preferred significantly less than when given either romantic or no associations. This experiment contrasts

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in the context of public administration and financial management.

2. The second part of the document outlines the various methods and tools used to collect, analyze, and report data. It highlights the need for standardized procedures and the use of modern technology to ensure the reliability and accuracy of the information gathered.

3. The third part of the document focuses on the role of the audit committee and the external auditors. It details the responsibilities of each party and the process of conducting an independent audit to verify the integrity of the financial statements and the compliance with applicable laws and regulations.

4. The fourth part of the document addresses the challenges and risks associated with the audit process. It identifies common areas of concern, such as the quality of internal controls, the availability of evidence, and the potential for bias or manipulation of data, and provides strategies to mitigate these risks.

5. The fifth part of the document discusses the importance of communication and reporting. It stresses the need for clear, concise, and timely communication of the audit findings to the relevant stakeholders, including the management, the board of directors, and the public.

6. The sixth part of the document provides a summary of the key findings and conclusions of the audit. It highlights the areas of strength and the areas that require improvement, and offers recommendations for enhancing the overall effectiveness and efficiency of the organization's operations.

7. The seventh part of the document discusses the implications of the audit findings for the future. It emphasizes the need for continuous improvement and the implementation of the recommended actions to address the identified weaknesses and ensure the long-term success and sustainability of the organization.

8. The eighth part of the document provides a final summary and conclusions. It reiterates the importance of the audit process and the commitment to transparency and accountability, and expresses confidence in the organization's ability to implement the necessary changes and improve its performance.

with the present research in two important ways: (1) Rigg dealt with a single belief, i.e., that Wagnerian music is associated with Hitler and German nationalism, while the present research is concerned with the organization of a belief network along the open-to-closed dimension, and (2) the belief was induced by the experimenter in Rigg's study while the present research is focused upon the organization of beliefs which the subjects bring with them to the experimental situation.

Though few experimenters have addressed themselves to the relevance of belief to musical preference, writers in the area of aesthetics and art criticism have been concerned with the problem of the aesthetic relevance of belief. Aiken (1) writes:

The sensory and imaginal content of a work of art does not establish its own unity as an aesthetic whole; nor does it fit together simply because they co-exist. What is required if the elements are to be composed into an aesthetic whole is the presence of an ordering system of beliefs and attitudes which make them mutually relevant to one another . . . beliefs thus have the effect of creating a sustaining, an aesthetic "world" in which an indefinite variety of elements may be held together without strain or confusion.

Meyer (12) states that individuals bring to music specifically musical experiences, associations and dispositions and important beliefs about the nature and significance of aesthetic experience in general and the expected experience in particular. Concert program notes aim to enhance belief thereby aiding appreciation by creating a willing attitude.

Williams (28) found experimentally that, given sufficient training, program notes aided significantly a groups' liking or enjoyment of a musical program. Riemann (13) asserts that "practice

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial reporting and compliance with regulatory requirements. The text notes that incomplete or inconsistent records can lead to significant legal and financial consequences for the organization.

2. The second section focuses on the role of internal controls in preventing fraud and errors. It outlines various control mechanisms, such as segregation of duties, regular audits, and the implementation of robust approval processes. The document stresses that these controls are not merely administrative tasks but are critical components of a strong organizational governance structure.

3. The third part of the document addresses the challenges of data security in the digital age. It highlights the increasing frequency of cyberattacks and the potential for data breaches, which can result in the loss of sensitive information and damage to the organization's reputation. The text provides recommendations for enhancing security measures, including the use of encryption, secure communication channels, and regular security updates.

4. The final section discusses the importance of employee training and awareness. It argues that a well-informed workforce is the first line of defense against many types of risks, including fraud and data breaches. The document suggests that organizations should invest in ongoing training programs to ensure that employees are up-to-date on the latest security protocols and best practices.

and good will are required for the understanding of a great and complicated musical work of art."

The observations of these writers seems to parallel the findings in the work of Vidulich (27). The "ordering system of beliefs and attitudes which make sensory and imaginal content relevant to each other" of which Aiken (1) speaks in the aesthetic situation is akin to the integration of beliefs in the problem used by Vidulich. The difficulty in integration was found to be a function of greater rejection of the problem situation and poorer memory for the individual beliefs. The "willing attitude" of which Meyer (12) speaks and the "good will" of which Riemann(13) speaks are considered to be essential in the aesthetic experience of a work of art, apparently no less than in the solution of a problem.

Statement of the Problem

It is assumed that individuals bring with them to the listening situation a set of beliefs concerning the nature of music, expectations of how music should sound, beliefs about good and bad music and beliefs about what is and what is not music. For example, in 1913, at the premiere of Stravinsky's Rites of Spring, an actual riot resulted, so strongly polarized were the beliefs concerning whether or not this could even be considered to be music. Forty-five years later there is little doubt as to the extreme importance of this work in the history of music. Is there a basis for making predictions as to how beliefs will

polarize in such situations, i.e., who will be receptive and who rejecting of such innovation? This is the problem of the present research.

From considerations of the theoretical model and its several properties, predictions concerning the reactions of individuals to music which is at variance with expectations and beliefs can be made. The closed belief-disbelief system is characterized by the property of isolation manifested by an over-emphasis of differences between the belief and the disbelief system. Applied to music, if there are individuals who have the same beliefs about conventional music, i.e., who are accepting of it to the same degree (the belief system), it would be expected that when exposed to music which is strange and unexpected and perhaps even somewhat unpleasant (the disbelief system) the individuals with closed belief systems would be more rejecting of the new music than those with relatively open belief systems. These expectations are in line with the findings of Rokeach, McGovney and Denny (23) and Vidulich (27).

From considerations concerning the central-peripheral dimensions of the model, i.e., the intermediate region, in which acceptance and rejection of people is tied to the acceptance and rejection of their beliefs, expectations are that the rejection of a composer's beliefs as exemplified in his music are tied to the rejection of him to the extent that the belief-disbelief system is closed.

Specific Hypotheses

From the above considerations, the following specific hypotheses are formulated for testing:

- (1) Given two groups equally accepting of conventional music, individuals with relatively closed belief-disbelief systems will be less accepting of new music than individuals with relatively open belief-disbelief systems.
- (2) Given two groups with equal acceptance of the composer of conventional music, individuals with relatively closed belief-disbelief systems will be less accepting of the composers of new music than individuals with relatively open belief-disbelief systems.

Overall Plan

The above hypotheses are tested in Experiment I, the first of the two experiments with music and open-closed belief systems described below. In Chapter II, the methodology common to both experiments is described. In Chapter III, the instructions, experimental sequence, and results of Experiment I are followed by the rationale, instructions, experimental sequence, and results of Experiment II. Chapter IV presents an experiment with music and problem solving. Chapter V is the summary and conclusions of

Experiments I, II, and III, with suggestions of an alternative hypothesis in future research.

CHAPTER II

METHOD

The Choice of Music

The choice of music was dictated by three considerations:

(1) The music selected should be equally unfamiliar to all subjects. Thus, previous experience would not be a contaminating variable requiring exclusion of the subject from the experiment. To help meet this requirement, chamber works, assumed to be less well known by the general listener, were chosen.

(2) Any conclusion that group differences in response to new music are mediated by open versus closed belief systems is warranted only if it can be shown that the groups do not differ in their response to conventional music of the same general type. Thus, a work constructed along the conventional lines of the Nineteenth Century was paired with an unconventional work of similar type written in the Twentieth Century.

(3) There should be no gross differences between the conventional and unconventional works in instrumentation or tempo. While pairs of works with the same instrumentation are easily located, tempo is less easily matched. We may state that whatever differences in tempo exist may be considered random error since conditions are the same for both groups.

With these considerations in mind, in Experiment I, the Brahms C Minor String Quartet, written in the Nineteenth Century,

was paired with the Schönberg Fourth Quartet, written in the Twentieth Century. The former is written within the conventional musical framework; the latter is in the unconventional twelve tone framework. In Experiment II, to the above are added the conventionally written Sonata for Piano and Violin in D Minor of Saint-Saens and the First Sonata for Piano and Violin of Bartok. The latter deviates from conventionality in several important aspects viz. use of polytonality, angularity of melodic line, and rhythmic complexity.

Measurement of Open-Closed Belief Systems

The Dogmatism Scale¹ consisting of 40 items, with 22 filler items was used to measure the degree to which belief systems are open or closed (Appendix A). For a discussion of the characteristics of this scale, the reader is referred to Rokeach who reports split-half reliabilities of .78 and .81 (21), while Vidulich (27) reports a split-half reliability of .78. On this basis, the scale was assumed to be sufficiently reliable for group research.

The Measurement of Acceptance of the Music and the Composer

In the two experiments to be reported here, two adjective checklists, one applicable to music and the other to composers, were

¹In Appendix A, the 22 filler items are numbered as follows: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 61, 62.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental procedures and the tools used for data collection.

3. The third part of the document presents the results of the study. It includes a series of tables and graphs that illustrate the findings. The data shows a clear trend in the relationship between the variables being studied.

4. The fourth part of the document discusses the implications of the findings. It highlights the potential applications of the research and the need for further investigation in this area.

5. The fifth part of the document concludes the study. It summarizes the key findings and provides a final statement on the overall results of the research.

used. Each list consisted of 15 pairs of adjectives, one of each pair assumed to be valid for positive and the other for negative feelings, in the case of the first list about music and in the case of the other, about composers. That the assumption of validity was not wholly warranted is indicated by the fact that unanimous agreement among judges as to the sign of the adjective, whether positive or negative, could be obtained in each of the two sets for only 10 of the 15 adjective pairs. Judges were six graduate students in psychology. Consequently, only responses to these two sets of 10 pairs were scored in both Experiments I and II.

For the music, the adjectives were: beautiful, ugly; melodious, noisy; refined, vulgar; graceful, clumsy; creative, gibberish; interesting, dull; imaginative, simple minded; profound, senseless; attractive, superficial; stimulating, repulsive.

For the composers, the adjectives were: genius, crackpot; brilliant, dull; sensitive, insensitive; inspired, disorganized; alert, apathetic; profound, shallow; playful, muddle headed; democratic, autocratic; tolerant, intolerant; witty, fearful.

The score was the difference between the number of positive and the number of negative adjectives, with a constant of 10 added to eliminate negative scores. Thus, a subject for any given excerpt or for any given composer might score between zero (low acceptance) to 20 (high acceptance).

Estimate of Formal Musical Background and Training

To determine the relationship between training in serious music and receptivity to new music, an information sheet was filled out by each subject giving the extent of instrumental or vocal study, time spent listening to music, the number of concerts attended in the last eighteen months and preference for types of music (Appendix B).

Estimate of Subject's Acquaintance with Serious Music

To gain an estimate of knowledge about serious music and its composers, the subjects were asked to match 25 composers with 29 musical compositions in the standard concert repertoire. The score was the number of correct matchings (Appendix B).

Subjects and Procedure

Experiments I and II were anonymous group experiments. The 133 subjects of Experiment I and the 147 subjects of Experiment II were mainly sophomores enrolled in the introductory psychology courses at Michigan State University in the spring of 1956. They were American born white students with the exception of one Negro in Experiment I and two foreign born and two Negro students in Experiment II. All of the subjects had already filled out the Dogmatism Scale on a previous occasion without giving their names. They were later identified by matching date and place of birth.

The general procedure for Experiments I and II, though similar in many respects, differ in several important aspects to be pointed out later. In both experiments, the subjects, after giving information on their formal musical background, listened to musical excerpts presented by a tape recorder. They then expressed how they felt about the music and the composer by checking adjectives from a checklist. After the presentation of the excerpts, the subjects completed the composer-composition matching test. The exact sequence for each experiment and the instructions are given in Chapter III.

CHAPTER III

EXPERIMENTS WITH MUSIC AND OPEN-CLOSED BELIEF SYSTEMS

EXPERIMENT I

Instructions and Sequence

The experiment was carried out under classroom conditions in groups of 30-50 students. The following instructions were given orally:

"This is a musical interest survey. We are sampling the musical likes and dislikes of college students and we would like to get your reactions to the music you are about to hear. It has been said that in matters of taste there is no dispute. This is certainly the rule here. We would like you to be perfectly free in expressing how you feel about the music.

A word about procedure. You are about to hear two excerpts of music. After each excerpt, write the name of the composition and the composer. If you don't know, write 'don't know'. If you have heard either of these compositions before, please indicate by circling the appropriate number. Any questions?"

Two excerpts, each of two and one-half minutes in length, the one from the opening of the Brahms C Minor Quartet and the other from the opening of the Schonberg quartet were played via tape recorder. The subjects were then asked to identify if they could the composer and composition. Then, the following additional instructions were given:

"You will now hear the same compositions again. This time I would like your reaction to the compositions, that is, the way you feel about them as music, whether you like or dislike them. Please be as frank as you can. Remember it is your personal opinion we want. Will you please check the adjectives which you feel apply to the first composition? Do not place a check if in your opinion the adjective doesn't apply."

Following the replaying of the Brahms, subjects were given about one minute to check the adjectives. They were then asked:

"Please check those adjectives which express your opinion about the first composer."

The same sequence was repeated for the replaying of the Schonberg. Following the playing of the excerpts, subjects were allowed up to ten minutes to complete the composer-composition matching test.

Treatment of the Data

In treating the data, the subjects were divided into two groups, those high in dogmatism called the Closed-Belief Group and those low in dogmatism, the Open-Belief Group. Whether a subject was high or low was determined by whether he fell within the top and bottom 15 percent of the distribution of subjects participating in each experiment. In this way, 40 subjects in Experiment I, 20 in each group, and 44 subjects in Experiment II, 22 in each group were obtained. Not one of those subjects reported having heard the music before nor were any of them able to identify either the composer or the composition. It was not necessary to discard any data on this account since all subjects were matched with respect to familiarity. Tests of significance for the main hypotheses were carried out by the use of t-tests for small samples (9). For our directional hypotheses, a one-tailed test of significance was used.

Results

Table 1 summarizes the main results of this experiment. In view of our directional hypotheses, a one-tailed test of significance has been utilized. As can be seen, there are no significant differences between the Open and Closed-Belief Groups in response to either the conventional music or the composer of the conventional music. On the new music, however, the groups differ significantly in the predicted direction. The Closed-Belief Group is significantly less accepting of the new music ($p < .025$) and is less accepting of the composer ($p < .005$) than the Open Belief Group.

The results of the analysis of the musical background variables are presented in Table 2. Because of the large number of zero scores implying a skewed distribution, the Chi-Square test was used. To avoid small theoretical frequencies, only two categories were used. As can be seen, the two groups do not differ significantly on years of study, frequency of attending concerts, number of courses taken in or preference for, Classical music. There is, however, a nearly significant difference between the Closed Belief and the Open Belief Groups with more subjects of the Closed Belief Group spending one or more hours per week listening to Classical music than those within the Open Belief Group. The meaningfulness of this difference is open to question for the following reasons:

(1) The difference is not a stable one. In Experiment II, Table 9, with similar data and similar subjects, the difference disappears.

QUESTION

- The following table shows the number of people who were employed in the manufacturing sector in the United Kingdom from 1970 to 2000.

| Year | Number of people employed (in millions) |
|------|---|
| 1970 | 10.5 |
| 1975 | 10.5 |
| 1980 | 10.0 |
| 1985 | 9.5 |
| 1990 | 9.0 |
| 1995 | 8.5 |
| 2000 | 8.0 |

- The number of people employed in the manufacturing sector in the United Kingdom has fallen from 10.5 million in 1970 to 8.0 million in 2000.
- The number of people employed in the manufacturing sector in the United Kingdom has fallen by 2.5 million over the 30-year period.
- The number of people employed in the manufacturing sector in the United Kingdom has fallen by 25% over the 30-year period.
- The following table shows the number of people who were employed in the service sector in the United Kingdom from 1970 to 2000.

| Year | Number of people employed (in millions) |
|------|---|
| 1970 | 10.5 |
| 1975 | 11.0 |
| 1980 | 11.5 |
| 1985 | 12.0 |
| 1990 | 12.5 |
| 1995 | 13.0 |
| 2000 | 13.5 |

- The number of people employed in the service sector in the United Kingdom has risen from 10.5 million in 1970 to 13.5 million in 2000.
- The number of people employed in the service sector in the United Kingdom has risen by 3.0 million over the 30-year period.
- The number of people employed in the service sector in the United Kingdom has risen by 28% over the 30-year period.
- The following table shows the number of people who were employed in the public sector in the United Kingdom from 1970 to 2000.

| Year | Number of people employed (in millions) |
|------|---|
| 1970 | 1.5 |
| 1975 | 1.5 |
| 1980 | 1.5 |
| 1985 | 1.5 |
| 1990 | 1.5 |
| 1995 | 1.5 |
| 2000 | 1.5 |

- The number of people employed in the public sector in the United Kingdom has remained constant at 1.5 million from 1970 to 2000.
- The number of people employed in the public sector in the United Kingdom has remained constant over the 30-year period.
- The number of people employed in the public sector in the United Kingdom has remained constant at 1.5 million over the 30-year period.

TABLE 1
RELATIVE ACCEPTANCE OF THE CLOSED-BELIEF (C-B) AND
OPEN-BELIEF (O-B) GROUPS OF MUSIC
AND THE COMPOSERS

| Variable | Group ¹ | N | Mean | S.D. | t ² | P | |
|----------|--------------------|-----|------|-------|----------------|------|------|
| Music | Brahms | C-B | 20 | 14.85 | 3.44 | .46 | NS |
| | | O-B | 20 | 14.35 | 3.20 | | |
| | Schonberg | C-B | 20 | 5.75 | 3.46 | 2.05 | .025 |
| | | O-B | 20 | 8.25 | 4.01 | | |
| Composer | Brahms | C-B | 20 | 12.65 | 2.17 | .14 | NS |
| | | O-B | 20 | 12.75 | 2.12 | | |
| | Schonberg | C-B | 20 | 7.45 | 2.62 | 2.86 | .005 |
| | | O-B | 20 | 9.80 | 2.48 | | |

¹The following abbreviations are used in subsequent tables:
C-B for Closed-Belief, and O-B for Open-Belief.

²In view of the directional hypotheses, a one-tailed test of
significance has been utilized.

The following table shows the results of the experiment. The first column is the number of trials, the second column is the number of correct responses, and the third column is the percentage of correct responses. The fourth column is the number of trials that were not completed.

| Number of trials | Number of correct responses | Percentage of correct responses | Number of trials not completed |
|------------------|-----------------------------|---------------------------------|--------------------------------|
| 10 | 8 | 80% | 2 |
| 20 | 15 | 75% | 5 |
| 30 | 22 | 73% | 8 |
| 40 | 28 | 70% | 12 |
| 50 | 35 | 70% | 15 |
| 60 | 42 | 70% | 18 |
| 70 | 48 | 68% | 22 |
| 80 | 55 | 68% | 25 |
| 90 | 62 | 68% | 28 |
| 100 | 70 | 70% | 30 |

The results show that the percentage of correct responses is generally high, ranging from 70% to 80%. The number of trials not completed increases as the number of trials increases, suggesting that the task becomes more difficult as the number of trials increases.

The following table shows the results of the experiment. The first column is the number of trials, the second column is the number of correct responses, and the third column is the percentage of correct responses. The fourth column is the number of trials that were not completed.

| Number of trials | Number of correct responses | Percentage of correct responses | Number of trials not completed |
|------------------|-----------------------------|---------------------------------|--------------------------------|
| 10 | 7 | 70% | 3 |
| 20 | 14 | 70% | 6 |
| 30 | 21 | 70% | 9 |
| 40 | 28 | 70% | 12 |
| 50 | 35 | 70% | 15 |
| 60 | 42 | 70% | 18 |
| 70 | 49 | 70% | 21 |
| 80 | 56 | 70% | 24 |
| 90 | 63 | 70% | 27 |
| 100 | 70 | 70% | 30 |

The results show that the percentage of correct responses is generally high, ranging from 70% to 80%. The number of trials not completed increases as the number of trials increases, suggesting that the task becomes more difficult as the number of trials increases.

TABLE 2
FORMAL MUSIC BACKGROUND OF THE TWO GROUPS

| | Years of Study Classical Music | | Hours per Week of Listening to Classical Music | | Concerts Attended Past Two Years of Classical Music | | Courses of Classical Music | | Preference | |
|----------|--------------------------------|--------|--|-------|---|-------|----------------------------|-------|------------------------------|------------------------|
| | 0 | 1 > 1* | 0 | 1 > 1 | 0 | 1 > 1 | 0 | 1 > 1 | Classical and Semi-Classical | Jazz and No Preference |
| C-B | 13 | 7 | 5 | 15 | 9 | 11 | 20 | 0 | 15 | 5 |
| O-B | 16 | 4 | 11 | 9 | 12 | 8 | 20 | 0 | 13 | 7 |
| χ^2 | .49 | | 3.75 | | 0.92 | | -- | | 0.47 | |
| p | NS | | .06 | .05 | NS | | NS | | NS | |

* > Signifies "more than"; < signifies "less than".

(2) If the Closed Belief Group does listen to classical music more than the Open Belief Group, it has no observable effect on their liking of conventional music. From Table I it can be seen that the group means for the Brahms are almost identical.

(3) Our obtained Chi-square of 3.75 falls short of the required value of 3.84 for significance at the .05 level.

In view of the above we believe it safe to interpret this as a chance difference.

The data for the composer-composition matching test, presented in Table 3, were found to be non-homogeneous with respect to variance. This suggests that the assumptions underlying the use of normal probability statistics are not being met. Consequently, a non-parametric test by White (4, pp. 417-22) was employed. This tests the Null hypothesis that the two sets of observations are from a common population, without making any assumptions concerning the distribution of measures in this population. As can be seen, the differences in knowledge about serious music as measured by this test is not significant.

In Table 4 are shown the data on age and intelligence as estimated from the American Council on Education Psychological Examination (ACE). As can be seen, neither of these differences is significant.

Summarizing, the differences between the two groups on acceptance of new music and acceptance of the composer are not accounted for by differences in the liking of conventional music,

TABLE 3
COMPOSER-COMPOSITION MATCHING TEST

| Group | N | Mean * | Sigma | Z | p |
|--------------|-----------|---------------|--------------|------------|-------------|
| C-B | 20 | 3.00 | 2.74 | | |
| | | | | .62 | N.S. |
| O-B | 20 | 4.70 | 5.09 | | |

***Means and S.D.'s are presented for illustrative purposes only. Significance was tested by non-parametric procedures in view of non-homogeneous variance.**

QUESTION 1

1. The following table shows the results of a survey of 100 people.

| Age Group | Gender | Number of People |
|-----------|--------|------------------|
| 18-24 | Male | 15 |
| | Female | 10 |
| 25-34 | Male | 20 |
| | Female | 15 |
| 35-44 | Male | 18 |
| | Female | 12 |
| 45-54 | Male | 10 |
| | Female | 8 |
| 55-64 | Male | 5 |
| | Female | 3 |
| 65+ | Male | 2 |
| | Female | 1 |
| Total | | 100 |

TABLE 4
AGE AND INTELLIGENCE OF THE CLOSED
AND OPEN BELIEF SUBJECTS

| | Age | | ACE | |
|-----|-------|-------|------|-------|
| | Mean | Sigma | Mean | Sigma |
| C-B | 21.70 | 2.41 | 5.37 | 1.60 |
| O-B | 22.30 | 2.92 | 5.89 | 1.76 |
| t | | .69 | | .75 |
| p | | N.S. | | N.S. |

by musical training and background, by knowledge about music, age, or intelligence as measured by the ACE. The fact that none of these variables seem to be related to the differential response to new music, lends additional weight to the results in substantiating our hypotheses relating open and closed-belief systems as measured by the Dogmatism Scale to new musical systems and acceptance of the composer as measured by reactions to Schonberg and his music.

EXPERIMENT II

Rationale and Hypotheses

The purpose of this experiment was to enlarge the scope of the previous one by increasing the number of musical samples, to retest the hypotheses of Experiment I, and to test two additional hypotheses. Added to the Brahms and Schonberg of the previous experiment are the Violin and Piano Sonata in D Minor by the Nineteenth Century composer Saint-Saens which was paired with the First Violin and Piano Sonata by the Twentieth Century composer Bartok.

The two additional hypotheses to be tested relate to the findings of Rokeach, McGovney, and Denny (23) and Vidulich (27). These investigators found that individuals with closed-belief systems were slower than those with open-belief systems in integrating sets into a new belief system. This finding suggested the following question: if two groups of individuals were presented with two successive samples of new music, would those with closed-belief systems change in receptivity at a slower rate than those with open-belief systems? Similarly, would acceptance of the composers of the new systems show the same differential rate of change? Theoretical considerations and previous research suggested an affirmative answer. Stated in the form of hypotheses:

(1) Given successive exposures to new music, those with open-belief systems will show a significantly larger gain in acceptance to the new music than those with closed-belief systems.

(2) Given successive exposures to new music, those with open-belief systems will show a significantly larger gain in acceptance of the composer than those with closed-belief systems.

Experimental Sequence

The experimental design, including instructions to subjects, is essentially the same as that of Experiment I with modifications in the length and number of excerpts. In Experiment I, it will be recalled, the subjects listened to the same two and a half minute excerpt twice prior to checking the adjectives. In Experiment II, each excerpt was two minutes in length and subjects' reactions were obtained after a single hearing.

The number of excerpts was increased from two to eight. Two excerpts, continuous 2-minute samples taken from the opening of each of four compositions were used. The subjects were informed of this procedure. The music, ascertained to be unfamiliar to all subjects by their unsuccessful attempts to identify either the music or the composer, was presented by tape recorder in the following sequence: Brahms (excerpts 1 and 2), Schonberg (excerpts 1 and 2), Saint-Saens (excerpts 1 and 2), and Bartek (excerpts 1 and 2). Following each excerpt two measures were obtained for a total of eight excerpts. All other details of this study, i.e., measures, scoring, and treatment of the data, are the same as in Experiment I.

Results

As can be seen from Table 5 the two groups do not differ on the Brahms' and Saint-Saens' compositions for either excerpt. It is noteworthy that the response of both groups to the initial 2-minute Schonberg sample is extremely similar. Only after the second exposure is there suggestion of a difference, the Open-Belief Group becoming more accepting, the Closed-Belief Group becoming less accepting of Schonberg's music. It will be recalled that in Experiment I, with 2-two and a half minute exposures as contrasted with 2-two minute exposures here, the differences for the Schonberg music were more definitive (Table 1). Apparently, the differences are sharpened as a function of exposure time. Even though the difference is not significant at the end of Schonberg Exposure 2, in the light of the results of Experiment I (Table 1) the difference and its direction appear to be stable. Edwards (4, pp. 391-3) describes a Chi-square test for the significance of a set of results which meet the assumption of independence, an assumption likely to be justified only when different samples of subjects are used in each experiment. The Chi-square test is based upon the fact that the natural logarithm (base e) of a probability p is equal to $-\frac{1}{2}$ Chi-square with 2 degrees of freedom, and that the sum of a number of independent values of Chi-square is also distributed as Chi-square with degrees of freedom equal to the sum of the degrees of freedom for the individual Chi-square values.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text states that records should be maintained in a clear, concise, and accessible manner, and that they should be subject to regular audits and reviews.

2. The second part of the document outlines the specific requirements for record-keeping. It states that all transactions must be recorded in a timely and accurate manner, and that the records must be maintained for a minimum of five years. The text also requires that records be maintained in a secure and confidential manner, and that they be subject to regular audits and reviews.

3. The third part of the document discusses the consequences of failing to maintain accurate records. It states that failure to maintain accurate records can result in the loss of the company's ability to detect and prevent fraud, and can also result in the loss of the company's ability to maintain accurate financial statements. The text also states that failure to maintain accurate records can result in the loss of the company's ability to comply with applicable laws and regulations.

4. The fourth part of the document discusses the role of management in ensuring that accurate records are maintained. It states that management is responsible for establishing and maintaining a system of internal controls that ensures the accuracy and integrity of the financial records. The text also states that management is responsible for ensuring that all employees are trained in the proper record-keeping procedures, and that they are held accountable for their actions.

5. The fifth part of the document discusses the role of the audit committee in ensuring that accurate records are maintained. It states that the audit committee is responsible for overseeing the company's internal control system, and for ensuring that the financial records are accurate and complete. The text also states that the audit committee is responsible for reviewing and approving the company's financial statements, and for reporting to the board of directors on the results of its audits.

6. The sixth part of the document discusses the role of the board of directors in ensuring that accurate records are maintained. It states that the board of directors is responsible for overseeing the company's overall financial performance, and for ensuring that the financial records are accurate and complete. The text also states that the board of directors is responsible for reviewing and approving the company's financial statements, and for reporting to the shareholders on the results of its audits.

7. The seventh part of the document discusses the role of the external auditors in ensuring that accurate records are maintained. It states that external auditors are responsible for conducting independent audits of the company's financial records, and for reporting to the board of directors on the results of their audits. The text also states that external auditors are responsible for ensuring that the company's financial records are accurate and complete, and for providing the board of directors with their findings and recommendations.

8. The eighth part of the document discusses the role of the internal auditors in ensuring that accurate records are maintained. It states that internal auditors are responsible for conducting independent audits of the company's internal control system, and for reporting to the audit committee on the results of their audits. The text also states that internal auditors are responsible for ensuring that the company's internal control system is effective, and for providing the audit committee with their findings and recommendations.

9. The ninth part of the document discusses the role of the external auditors in ensuring that accurate records are maintained. It states that external auditors are responsible for conducting independent audits of the company's financial records, and for reporting to the board of directors on the results of their audits. The text also states that external auditors are responsible for ensuring that the company's financial records are accurate and complete, and for providing the board of directors with their findings and recommendations.

10. The tenth part of the document discusses the role of the internal auditors in ensuring that accurate records are maintained. It states that internal auditors are responsible for conducting independent audits of the company's internal control system, and for reporting to the audit committee on the results of their audits. The text also states that internal auditors are responsible for ensuring that the company's internal control system is effective, and for providing the audit committee with their findings and recommendations.

TABLE 5
ACCEPTANCE OF CLOSED-BELIEF (C-B) AND
OPEN-BELIEF (O-B) GROUPS OF
CONVENTIONAL AND NEW MUSIC

| Composition | Group | N | Excerpt 1 | | | | Excerpt 2 | | | |
|-----------------------|-------|----|-----------|------|-----|------|-----------|------|------|------|
| | | | Mean | S.D. | t | p | Mean | S.D. | t | p |
| Brahms Quartet | C-B | 22 | 12.91 | 3.40 | .26 | N.S. | 12.73 | 2.82 | .37 | N.S. |
| | O-B | 22 | 13.14 | 2.47 | | | 13.04 | 3.14 | | |
| Schonberg Quartet | C-B | 22 | 8.40 | 2.71 | .15 | N.S. | 8.00 | 3.15 | 1.06 | .15 |
| | O-B | 22 | 8.27 | 3.09 | | | 9.09 | 3.55 | | |
| Saint-Saens Sonata | C-B | 22 | 14.95 | 2.53 | .11 | N.S. | 15.00 | 2.84 | .28 | N.S. |
| | O-B | 22 | 15.04 | 2.88 | | | 14.77 | 2.41 | | |
| Bartok Sonata | C-B | 22 | 9.04 | 3.50 | .74 | N.S. | 10.14 | 3.49 | .68 | N.S. |
| | O-B | 22 | 9.82 | 3.34 | | | 10.91 | 3.75 | | |

▲ one-tailed test has been used for those comparisons involving a directional hypothesis.

Pooling the probabilities from these two independent experiments, Experiment I, Table 1 ($p < .025$) and Experiment II, Excerpt 2, Table 5 ($p < .15$), the Chi-square value of 11.17 with 4 degrees of freedom is significant beyond the .03 level of confidence. The Closed-Belief Group is significantly less accepting of Schonberg's music than the Open-Belief Group.

From Table 5 it is seen that though the means for the Bartok are consistently in the hypothesized direction, an acceptable significance level is not attained. Thus, hypothesis 1, Experiment I, to the effect that those with closed belief systems will be less accepting of new music than those with open belief systems is not clearly confirmed when Bartok's music is regarded as an example of new music. When Schonberg's music is taken as an example, the results of Experiments I and II considered together clearly confirm hypothesis I.

From Table 6 it can be seen that, while there are no differences between the groups on the conventional composers, the tendency for the Closed-Belief Group to be less accepting of Schonberg becomes more pronounced after the second excerpt, at which point the difference approaches significance ($p < .075$). On the basis of significant findings in Experiment I on this variable, the difference may be considered a reliable, if not a significant, difference. Pooling the probabilities of both experiments (Experiment I, $p < .005$, Experiment II, $p < .075$), the Chi-square value of 15.78 with 4 degrees of freedom is significant beyond the .01 level

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TABLE 6
ACCEPTANCE OF COMPOSERS BY THE C-B AND O-B GROUPS

| Composer | Group | N | Excerpt 1 | | | | Excerpt 2 | | | |
|-------------|-------|----|-----------|------|------|------|-----------|------|------|------|
| | | | Mean | S.D. | t* | p | Mean | S.D. | t* | p |
| Brahms | C-B | 22 | 11.36 | 2.10 | 1.02 | N.S. | 11.68 | 1.94 | .22 | N.S. |
| | O-B | 22 | 11.95 | 1.66 | | | 11.82 | 2.04 | | |
| Schonberg | C-B | 22 | 9.09 | 1.95 | .28 | N.S. | 8.73 | 2.51 | 1.56 | .075 |
| | O-B | 22 | 9.27 | 2.16 | | | 9.86 | 2.16 | | |
| Saint-Saens | C-B | 22 | 12.86 | 1.49 | .33 | N.S. | 12.82 | 1.40 | .28 | N.S. |
| | O-B | 22 | 12.68 | 2.05 | | | 12.68 | 1.79 | | |
| Bartok | C-B | 22 | 9.04 | 2.28 | 1.03 | N.S. | 9.82 | 2.59 | .51 | N.S. |
| | O-B | 22 | 9.77 | 2.30 | | | 10.23 | 2.66 | | |

*The one-tailed test has been used for comparisons involving a directional hypothesis.

of confidence. Considering the results of both experiments together, the Closed-Belief Group is significantly less accepting of the composer Schonberg than the Open-Belief Group.

For composer Bartok, the difference is not significant. Thus, hypothesis 2 which states that those with closed belief systems will be less accepting of the composers of new music than those with open belief systems is confirmed only for the composer Schonberg.

To test the hypotheses concerning change in receptivity following successive exposures to new music, the mean gains from excerpt 1 to excerpt 2 were analyzed. As expected, no significant changes were found on the conventional compositions (Table 7). On the Schonberg, however, it can be seen from Table 8 that the Closed-Belief Group decreases in receptivity to Schonberg from excerpt 1 to excerpt 2 while the Open-Belief Group increases. The difference between the changes from excerpt 1 to excerpt 2 is significant ($p < .05$). On the Bartok, contrary to expectations, both groups became more receptive after a second exposure to almost an identical but not significant degree. Thus, the hypothesis which states that given two exposures to new music, those with open-belief systems will show a significantly larger gain in receptivity to the new music than those with closed belief systems is again confirmed only for the Schonberg music.

Concerning change in composer acceptance, no significant differences were found either for the conventional composers

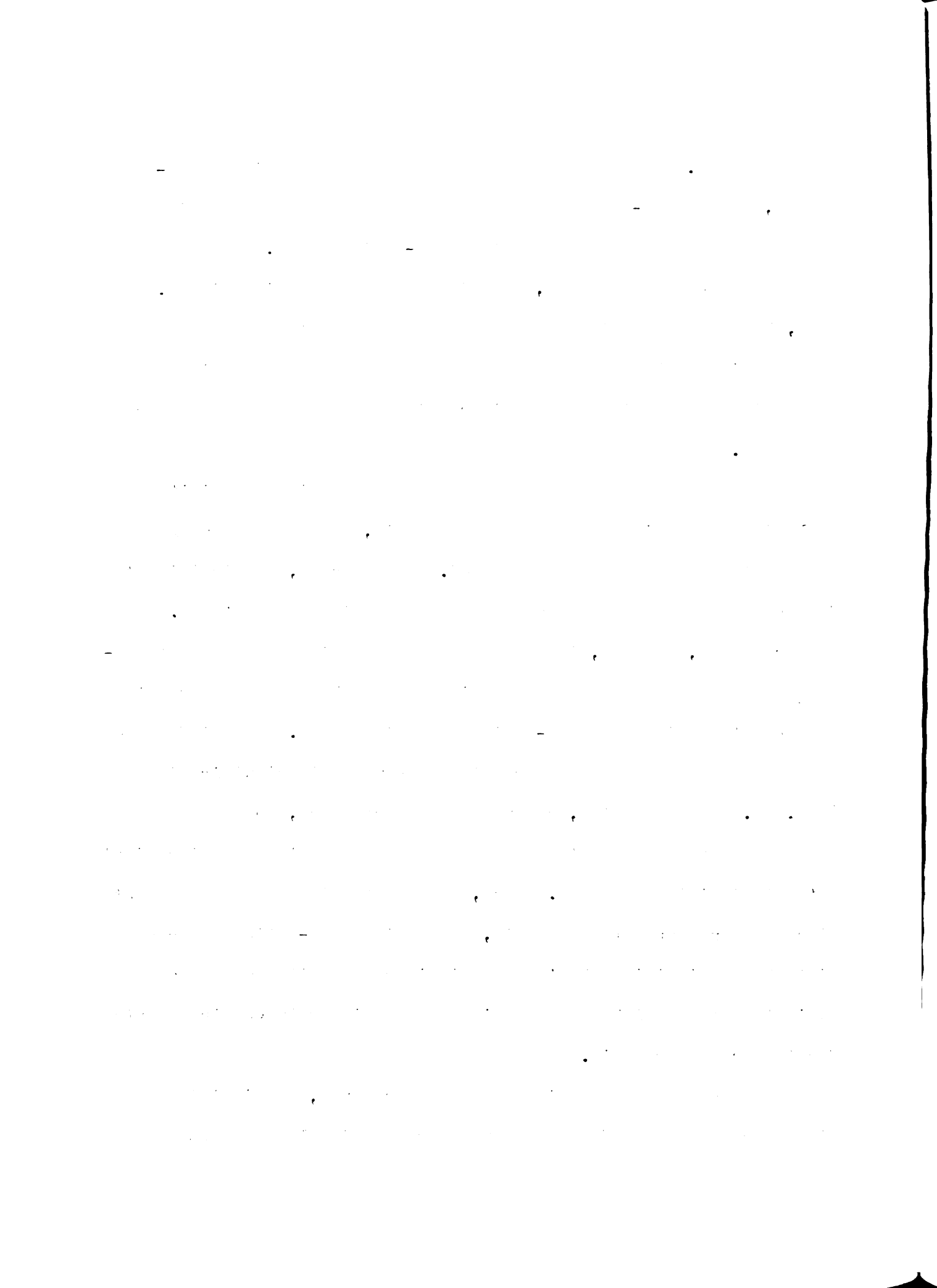


TABLE 7
 RELATIVE CHANGES IN ACCEPTANCE OF CONVENTIONAL MUSIC
 AFTER TWO EXPOSURES

| Composition | Group | N | Mean Gain | Sigma | t | p |
|--------------------|-------|----|-----------|-------|------|------|
| Brahms Quartet | C-B | 22 | -.18 | 2.075 | .015 | N.S. |
| | O-B | 22 | -.090 | 1.93 | | |
| Saint-Saens Sonata | C-B | 22 | +.045 | 1.97 | .54 | N.S. |
| | O-B | 22 | -.27 | 1.86 | | |

TABLE 8
RELATIVE CHANGE IN ACCEPTANCE OF NEW MUSIC
AFTER TWO EXPOSURES

| Composition | Group | N | Mean Gain | Sigma | t | p |
|------------------------------|--------------|-----------|------------------|--------------|-------------|-------------|
| Schonberg Quartet | C-B | 22 | -.40 | 1.87 | 1.89 | .05 |
| | O-B | 22 | +.82 | 2.30 | | |
| Bartok Sonata | C-B | 22 | +1.10 | 2.29 | .15 | N.S. |
| | O-B | 22 | +1.09 | 2.04 | | |

(Table 9) or for Bartok (Table 10). For Schonberg, however, (Table 10) the difference in gain in acceptance is significant ($p < .05$), the Closed-Belief Group becoming less accepting, the Open-Belief Group becoming more accepting of Schonberg.

Summarizing, the hypotheses are confirmed only to the extent that they bear on the reaction to Schonberg and his music. Neither for the conventional music or composer nor for the Bartok, were there any significant differences.

As in Experiment I, the several background variables seem to bear no relationship to the response to either the music or the composers, as seen in Table 11. No significant differences are found between the two groups on years of study, hours per week of listening, number of concerts attended in the past 18 months, number of courses in or preference for classical music.

The data for the composer-composition matching test (Table 10) were analyzed by a non-parametric test, White's T (4, pp. 417-22) in view of the non-homogeneity of the variance. The Open Belief Group knows significantly more about serious music and its composers ($p < .04$) than does the Closed Belief Group. In Experiment I the difference, though not significant, was in the same direction as that found here suggesting that this tends to be a stable trend even though it appears to have little differential effect on liking for conventional music. This advantage in knowledge seems, plausibly, a characteristic of greater openness to new ideas, and experiences of individuals with relatively open belief systems.

TABLE 9
RELATIVE CHANGE IN ACCEPTANCE OF THE CONVENTIONAL
COMPOSERS AFTER TWO EXPOSURES TO MUSIC

| Composer | Group | N | Mean Gain | Sigma | t | p |
|--------------------|--------------|-----------|------------------|--------------|------------|-------------|
| Brahms | C-B | 22 | +0.045 | 0.25 | .13 | N.S. |
| | O-B | 22 | 0.00 | 1.17 | | |
| Saint-Saens | C-B | 22 | + .32 | 1.66 | .82 | N.S. |
| | O-B | 22 | - .14 | 1.91 | | |

TABLE 10
RELATIVE CHANGE IN ACCEPTANCE OF THE NEW COMPOSERS
AFTER TWO EXPOSURES TO MUSIC

| Composer | Group | N | Mean Gain | Sigma | t | p |
|-----------|-------|----|-----------|-------|------|------|
| Schonberg | C-B | 22 | -.36 | 1.69 | 1.97 | .025 |
| | O-B | 22 | +.59 | 1.43 | | |
| Bartok | C-B | 22 | +.78 | 2.47 | .49 | N.S. |
| | O-B | 22 | +.46 | 1.73 | | |

TABLE 11
FORMAL MUSIC BACKGROUND OF THE TWO GROUPS

| | Years of Study of Classical Music | | Hours per Week of Listening | | Concerts Attended Past Two Years | | Courses of Classical Music | | Preference | |
|----------|-----------------------------------|-----|-----------------------------|-----|----------------------------------|-----|----------------------------|-----|------------------------------|------------------------|
| | 0 | 1>1 | 0 | 1>1 | 0 | 1>1 | 0 | 1>1 | Classical and Semi-Classical | Jazz and No Preference |
| C-B | 15 | 7 | 14 | 8 | 15 | 7 | 22 | 0 | 15 | 7 |
| O-B | 15 | 7 | 13 | 9 | 11 | 11 | 19 | 3 | 17 | 5 |
| χ^2 | 0.00 | | 0.15 | | 1.50 | | -- | | 0.46 | |
| p | N.S. | | N.S. | | N.S. | | N.S. | | N.S. | |

> means "more than"

TABLE 12
COMPOSER-COMPOSITION MATCHING TEST

| Group | N | Mean * | Sigma | Z | p |
|--------------|-----------|---------------|--------------|-------------|------------|
| C-B | 22 | 2.50 | 1.50 | 2.08 | .04 |
| O-B | 22 | 6.54 | 5.94 | | |

***Means and S.D.'s are presented for illustrative purposes only. Significance was tested by non-parametric procedures in view of the non-homogeneous variance.**

Table 13 presents the data on age and intelligence as measured by the ACE. Neither of these differences is significant, thus corroborating the findings of Experiment I. The p value of $<.20>.10$, however, favoring the Open-Belief Group in intelligence, and the significant difference in knowledge about music again favoring the Open-Belief Group raises some issues concerning the probable influence of these variables on music preference in addition to or independent of the effects of closed or open belief systems. The following points are clearly established by the two experiments:

(1) With or without significant differences in knowledge about music and with or without a slight "edge" on intelligence, there are no differential effects on preference for conventional music (Tables 1 and 5).

(2) Similarly, knowledge about music and a slight "edge" on intelligence has no differential effects on preference for Bartok (Table 5).

(3) In Experiment I, the findings with respect to Schonberg were more definitive (music $p < .025$, composer $p < .005$) in the absence of significant differences in knowledge and intelligence. In Experiment II, the findings with respect to Schonberg are less definitive (music $p < .15$, composer $p < .075$) in the presence of the differences in knowledge and the possibly slight "edge" on intelligence by the Open-Belief Group.

(4) The correlation between ACE and response to Schonberg for the group as a whole ($N = 124$ for whom ACE scores were available) is $+.056$ which is not significant.

1. The first step in the process of writing a research paper is to choose a topic. This should be a topic that interests you and one that you can find enough information about. It is also important to choose a topic that is not too broad or too narrow. A good topic should be specific enough to allow you to focus your research, but broad enough to allow you to find a variety of sources.

2. Once you have chosen a topic, the next step is to do some preliminary research. This will help you to get a sense of what is already known about your topic and will help you to identify the key issues and questions that you need to explore. This research should be done using a variety of sources, including books, articles, and websites.

3. After you have done your preliminary research, you should then choose a thesis statement. This is a statement that expresses your main argument or conclusion about your topic. It should be clear, concise, and debatable. Your thesis statement should also be supported by the evidence that you gather in your research.

4. The next step is to gather evidence to support your thesis statement. This should be done using a variety of sources, including books, articles, and websites. You should also keep track of the sources that you use, as you will need to cite them in your paper.

5. Once you have gathered your evidence, you should then organize your paper. This should be done by creating an outline that shows the main points of your paper and how they are supported by your evidence. Your outline should also show the order in which you will present your points.

6. After you have organized your paper, you should then write your paper. This should be done in a clear and concise style, using the evidence that you have gathered to support your thesis statement. You should also use proper citation format to cite the sources that you use.

7. The final step in the process of writing a research paper is to revise and edit your paper. This should be done to ensure that your paper is clear, concise, and free of errors. You should also proofread your paper carefully to catch any typos or other mistakes.

TABLE 13
AGE AND ACE OF THE OPEN AND
CLOSED BELIEF GROUPS

| Group | N | Age | | ACE | |
|-------|----|-------|------|--------|------|
| | | Mean | S.D. | Mean | S.D. |
| C-B | 22 | 21.27 | 2.32 | 5.47* | 1.68 |
| O-B | 22 | 21.73 | 2.42 | 6.39** | 1.74 |
| | t | | .62 | | 1.55 |
| | p | | .28 | .20 | .10 |

* 17/22 available scores
** 18/22 available scores

On the basis of these findings, it appears that intelligence as measured by ACE and knowledge about music as measured by the composer matching test do not function in any consistent way to determine the response to music and hence their influence is likely to be negligible. Additional weight is given to this conclusion in regard to intelligence by the work of Rubin-Rabson (24) who investigated the effects of intelligence and other variables on reactions to classical and modern music. This investigator found a non-significant average positive correlation ($r +.119$) between liking modern music and intelligence, with a range of correlations from $-.187$ to $+.726$ in which liking for Schonberg's music (written in his early creative period) was negatively correlated with intelligence. Rubin-Rabson concluded that the influence of intelligence is slight.

DISCUSSION OF EXPERIMENTS I AND II

The results of both experiments lend support to the hypothesis that those with closed belief systems are less accepting of new music and the composers of new music as exemplified by Schonberg but not as exemplified by Bartok. Thus, some limits are placed on the degree to which generalization is appropriate in relating closed belief systems to reactions to all new musical systems and their composers. The differences between the Open Belief and Closed Belief Groups on the Schonberg are considerably less sharp after the second exposure in Experiment II (Table 5) than after the second exposure in Experiment I (Table 1). The difference in methodology would appear to account for some of this difference. It will be recalled that in Experiment I, the groups listened to the same two and one half minute excerpts twice prior to responding. In Experiment II, the groups listened to two different excerpts from the same composition responding after each one. Here each excerpt was only two minutes in length. Rigg (16) found that, in general, repetition increased liking for music. It is striking that this held for only the Open Belief Group; for the Closed Belief Group repetition had the opposite effect.

From Table 5 it can be seen that both groups reacted more positively to the Bartok than to the Schonberg music. An examination of the musical score for the Bartok suggests some possible reasons. Although both the Schonberg and the Bartok music, as specific compositions, were equally unfamiliar to all of the subjects, there may well

1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It then outlines the various methods used to collect and analyze data, including surveys and interviews.

3. The next section describes the results of the study, showing a clear trend towards increased participation.

4. Finally, the document concludes with a series of recommendations for future research and implementation.

5. The overall findings suggest that the current approach is effective, but there are still areas for improvement.

6. The data indicates that the majority of participants are satisfied with the current process.

7. However, there are some concerns regarding the accuracy of the data collection process.

8. The study also highlights the need for more frequent communication and feedback loops.

9. In conclusion, the research provides valuable insights into the current state of affairs.

10. The results are consistent with previous studies, suggesting a stable and effective process.

11. The data shows a positive correlation between the number of participants and the quality of the data.

12. The study also identifies several key factors that influence the success of the process.

13. The findings are particularly relevant for organizations looking to improve their data collection methods.

14. The research suggests that a combination of surveys and interviews is the most effective approach.

15. The study also emphasizes the importance of transparency and accountability in the data collection process.

16. The results indicate that the current process is generally well-received by participants.

17. The data shows that the majority of participants are satisfied with the current process.

18. The study also highlights the need for more frequent communication and feedback loops.

19. In conclusion, the research provides valuable insights into the current state of affairs.

20. The results are consistent with previous studies, suggesting a stable and effective process.

21. The data shows a positive correlation between the number of participants and the quality of the data.

22. The study also identifies several key factors that influence the success of the process.

have been some familiar stylistic elements present in the Bartok which were not present in the Schonberg. Bartok uses tonal combinations reminiscent of the Nineteenth Century, i.e., conventional music albeit in new ways. These occurred in the music at a time when they would be likely to exert a strong influence on the response to the music, i.e., just prior to the end of the second excerpt. Bartok uses simultaneous major and minor thirds to introduce a new section in the music in measures 103-114 of the score. It should be pointed out that the third is one of the sounds most characteristic of the Nineteenth Century and hence conventional music. Even though most Nineteenth Century composers do not juxtapose major and minor thirds simultaneously, this use of thirds in Bartok's music may well have functioned as an element of familiarity and hence increased acceptance of the whole excerpt. Another likely aspect influencing general acceptance is the fact that the mood of the music changes from one of a stormy agitation to a quiet lyricism. That point in the music at which the subjects responded by checking adjectives may well have been experienced as a reduction in tension and hence pleasant. In general, it might be said that Bartok's music is less rigorously systematized than Schonberg's.

In Experiment II, the mean gain in receptivity to the Schonberg music by the Open Belief Group coincident with a mean loss by the Closed Belief Group lends empirical weight to the notion of resistance to change as an aspect of closed belief systems. Where

[The page contains extremely faint and illegible text, likely bleed-through from the reverse side of the document. The text is mostly centered and appears to be organized into several paragraphs or sections, but the individual words and sentences cannot be discerned.]

previous research established a relationship between closed belief systems and functioning integratively in a cognitive task (23, 27), the present research has extended the limits of the effects of closed belief systems to the sphere of affective responses to essentially non-cognitive stimuli, i.e., music. This may well have the implication that a closed belief system is a manifestation of a more global kind of closedness, i.e., a closedness to new experience generally--experience being both cognitive and affective.

As hypothesized, those with closed belief systems were less accepting of Schonberg than those with open belief systems. This finding has relevance to that aspect of the theoretical model known as the intermediate region. According to Rokeach (20) here are represented the beliefs one has about people who hold beliefs in agreement with one's own or disagreement with one's own. One aspect of closed belief systems is the binding together of acceptance and rejection of ideas with the acceptance and rejection of people. In the present context the music written by a composer may be said to be the embodiment of his beliefs about how music should sound. The Closed Belief Group, while less accepting of the new music was also less accepting of the composer Schonberg which is in line with theoretical expectations.

Though the two groups do not differ significantly in intelligence it is reasonable to assume that intelligence may have some effect, if not on reaction to music, then upon knowledge about music. Another factor which may contribute to the difference

The following table shows the results of the experiment. The first column is the number of trials, the second column is the number of correct responses, and the third column is the percentage of correct responses.

| Number of trials | Number of correct responses | Percentage of correct responses |
|------------------|-----------------------------|---------------------------------|
| 10 | 8 | 80% |
| 20 | 15 | 75% |
| 30 | 22 | 73% |
| 40 | 28 | 70% |
| 50 | 35 | 70% |
| 60 | 42 | 70% |
| 70 | 48 | 69% |
| 80 | 55 | 69% |
| 90 | 62 | 69% |
| 100 | 70 | 70% |

The results show that the percentage of correct responses increases as the number of trials increases, reaching a plateau of approximately 70% after 50 trials.

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between the groups in knowledge about music is higher aesthetic values generally, for the Open Belief than for the Closed Belief Group. If one thinks of aesthetic values as signifying an interest in the novel ways in which artists and writers order their unique experiences and of an openness to new experience and a desire to share these new ways of perceiving and experiencing--whether in art or problem solving--then plausibly, individuals with C-B systems would be less attracted to things aesthetic. This speculation is however a problem for future research.

CHAPTER IV

EXPERIMENT WITH MUSIC AND PROBLEM SOLVING

EXPERIMENT III

Rationale and General Hypotheses

In Experiments I and II support was found for the hypotheses that those with closed belief systems would be less accepting of new music as exemplified by Schonberg than those with open belief systems. Vidulich (27) found that individuals with closed belief systems were not only slower in solving a problem requiring the integration of multiple sets but that these subjects were more rejecting of the problem situation. This rejection of the problem situation was seen as mediating a failure to remember the several sets, with consequent greater difficulty with the problem. It appears that negative feelings about things new is an aspect of the closed belief system and as such, appears to be a common factor in determining both the response to new music and the response to a problem. Apparently, how one feels about a task influences how one thinks in it.

Since closed belief systems apparently have manifestations both in the affective sphere, i.e., making an affective response to music and in the cognitive sphere, i.e., solving a problem, questions concerning the relationship between cognition and affect were raised. Is a closed cognitive system iso-morphic with a closed affective-system? In what kind of a relationship do closed cognitive

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systems co-exist with affective systems? Does cognitive narrowing imply affective narrowing? Does the inability to relinquish pre-conceived ways of thinking stem from or derive from the inability to relinquish old ways of feeling? Put yet another way, is a cognitive resistance to change a concomitant of an emotional resistance to change?

The notion of a relationship between affect and cognition is now new. Frenkel-Brunswik (8) has posited a quasi-iso-morphic correspondence between emotional and cognitive behavior. Inability to tolerate emotional ambivalence in the emotional and social spheres is hypothesized to have its counterpart in an inability to tolerate ambiguity in cognitive tasks.

May (11, p. 224) has attempted to relate anxiety avoidance to cognitive behavior.

The avoidance of anxiety is the purpose of many behavior traits which could be called relatively "normal" and are "neurotic" only in their compulsive forms. For example rigidity of thinking which may be observed in religious or scientific dogmatism is a way of armoring one's values so that they are protected from threat. Avoidance of anxiety is temporarily achieved, but at the price of the possibilities of discovering new truth, the exclusion of new learning, and the stunting of capacities to adapt to new situations.

According to May, the special characteristics of anxiety are feelings of uncertainty and helplessness in the face of special danger. Apparently feelings of threat may be expected to result in "rigidity of thinking . . ."

Rogers (17) speaks of "openness to experience" as a prerequisite for creative thought, the essence of which is the entertaining of new ideas and the development of novel products.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities.

2. It also emphasizes the need for transparency and accountability in all financial dealings.

3. Furthermore, the document outlines the various methods and tools used to collect and analyze data.

4. The following section details the specific procedures and protocols followed during the data collection process.

5. This includes a thorough review of all relevant documents and records to ensure completeness and accuracy.

6. Additionally, the document describes the use of statistical techniques to analyze the collected data.

7. The results of these analyses are presented in the subsequent sections, highlighting key findings and trends.

8. Finally, the document concludes with a summary of the overall findings and recommendations for future research.

9. The authors express their appreciation to the funding agencies and participants who made this study possible.

10. The document is intended to provide a comprehensive overview of the research methodology and findings.

11. It is hoped that this work will contribute to the understanding of the complex issues under investigation.

12. The authors are available for further inquiries and discussions regarding the study.

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Rokeach (21) takes the view that:

The distinction between what is cognitive and what is emotional is a convenient one but by no means a necessary one. It is possible to conceive of all emotional states as having their representation in the cognitive belief-disbelief systems . . . for all the things a person feels (and wants) must surely be represented by what he believes and knows about the world he lives in.

In the literature cited, these investigators believe that a relationship exists between affect and cognition. The extent of the relationship and its manifestations are part of the problem of this study.

The basic assumption underlying this investigation is that feelings "spill over" into the cognitive sphere. Individuals with closed belief systems were found to be more rejecting of a new problem and in the present research, of new music. Negative feelings about things new appear to be a common denominator of both situations. To what extent can behavior in one situation, i.e., the music, predict behavior in the other, i.e., the problem situation?

The general hypothesis of the present study is that individuals who are most extremely negative in their feelings about a new musical system will find greater difficulty in a cognitive task requiring the integration of beliefs into a new belief system, than individuals who are relatively positive in their feelings about a new musical system.

The Cognitive Task

The cognitive task to be employed here is the same as that used by Rokeach, McGovney and Denny (23) and by Vidulich (27). It

The following text is a transcription of a document, possibly a handwritten letter or a typed document with significant noise and artifacts. The content is largely illegible due to the quality of the scan, but some fragments are discernible.

The document appears to contain several paragraphs of text, interspersed with what might be list items or section headers, though they are too faint to read accurately. There are also some isolated words or phrases that stand out, such as "I have" and "I am".

The overall structure suggests a formal or semi-formal communication, possibly a letter or a report, but the specific details and intent are completely obscured by the noise and low resolution of the image.

is called the Denny Doodlebug Problem, after M. Ray Denny, who devised it in 1945. The problem is presented to the subjects on a typed sheet of paper as follows:

THE CONDITIONS

Joe Doodlebug is a strange sort of imaginary bug.

He can and cannot do the following things:

1. He can jump in only four directions--north, south, east or west, not diagonally. (Not southeast, northwest, etc.)
2. Once he starts in any direction, that is, north, south, east or west, he must jump four times in that same direction before he can switch to another direction.
3. He can only jump, not crawl, fly or walk.
4. He can jump very large distances or very small distances but not less than one inch per jump.
5. Joe cannot turn around.

THE SITUATION

Joe has been jumping all over the place getting some exercise when his master places a pile of food three feet directly west of him. Joe notices that the pile of food is a little larger than he. As soon as Joe sees all this food he stops dead in his tracks facing north. After all his exercise Joe is very hungry and wants to get to the food as quickly as he possibly can. Joe examines the situation and then says, "Darn it, I'll have to jump four times to get the food!"

THE PROBLEM

Joe Doodlebug was a smart bug and he was dead right in his conclusion. Why do you suppose that Joe Doodlebug had to take four jumps, no more and no less, to reach the food?

The correct solution to the problem is that Joe had to take exactly four jumps because at the moment the food was presented he had already taken one jump to the east. Therefore, it was necessary for him to first take three more jumps to the east to meet the requirement of taking four jumps before changing direction. He then takes one jump to the west and lands on top of the food, thus making a total of four jumps.

The subject must first overcome three discrete sets or beliefs to solve the Doodlebug problem:

(1) the facing set: Joe does not have to face the food in order to eat it--he can land on top of it; (2) the direction set: Joe can jump sideways and backwards as well as forwards; and (3) the movement set: Joe could have been in the middle of a sequence of jumps as well as at the beginning of a sequence when the food was presented. But overcoming these three beliefs does not automatically lead to the solution. What the subject must do after overcoming the beliefs is to integrate them into a new system to gain a solution to the problem.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities.

2. It then outlines the various methods used to collect and analyze data, including surveys, interviews, and focus groups.

3. The next section describes the results of the data collection process, highlighting key findings and trends.

4. Finally, the document concludes with a summary of the overall findings and recommendations for future research.

5. The following table provides a detailed breakdown of the data collected during the study.

6. This section discusses the implications of the findings for the field of research and practice.

7. The next part of the document explores the limitations of the study and areas for further investigation.

8. It then provides a detailed description of the methodology used to conduct the research.

9. The following section discusses the results of the data analysis, including statistical tests and interpretations.

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12. Finally, the document concludes with a summary of the overall findings and recommendations for future research.

13. The following table provides a detailed breakdown of the data collected during the study.

14. This section discusses the implications of the findings for the field of research and practice.

15. The next part of the document explores the limitations of the study and areas for further investigation.

16. It then provides a detailed description of the methodology used to conduct the research.

17. The following section discusses the results of the data analysis, including statistical tests and interpretations.

18. This part of the document describes the various methods used to collect and analyze data, including surveys, interviews, and focus groups.

19. The next section discusses the results of the data collection process, highlighting key findings and trends.

20. Finally, the document concludes with a summary of the overall findings and recommendations for future research.

Specific Hypotheses

The following interrelated hypotheses were formulated:

A. Concerning total time taken to solve a problem which involves both the overcoming of sets and their integration:

Persons low in acceptance of new music should take longer to solve the problem than persons high in acceptance.

B. Concerning the integration of sets already overcome:

Persons low in the acceptance of new music should take more time in integrating the sets already overcome, than persons high in the acceptance of new music.

Subjects and Procedure

The main purpose of the initial part of this experiment was to provide a pool of subjects from which individuals would later be drawn to perform singly in the cognitive task. Two hundred and fifty-four MSU summer session students enrolled in Communication Skills and in various courses in psychology constituted this basic pool of subjects. Due, however, to the relative heterogeneity of the subjects with respect to age, and background in psychology, an arbitrary upper limit was set at age thirty-five and three courses in psychology. With this screening, the data for twenty-six individuals were discarded, leaving a pool of two hundred and twenty-nine subjects.

These subjects participated in an anonymous group experiment modeled after Experiment II and similar in most respects except for some substitutions in the music. The 19th century violin concerto of Sibelius was substituted for the 19th century Saint-Saens Sonata for piano and violin and the 20th century violin concerto of Berg was substituted for the 20th century sonata for piano and violin of Bartok. The music, as before was presented by tape recorder in two-minute excerpts in the following order: Brahms (excerpts 1 and 2), Schonberg (excerpts 1 and 2), Sibelius (excerpts 1 and 2), and Berg (excerpts 1 and 2). Subjects were asked to identify either the composer or the composition. Not one subject could. On this basis, the music was assumed to be equally unfamiliar to all. Since none of the subjects had had the dogmatism questionnaire, the same forty item measure (Appendix A) was administered.

From this pool of two hundred and twenty-nine subjects, two groups, thirty-four in each group, were chosen to perform in the individual cognitive task. The principle guiding the selection of individuals was that there should be two groups which were as equated as conditions would allow on conventional music and as different as possible on new music. In some cases it was not possible to use the subjects who were least accepting of new music. This was so because their conventional music scores were too low to be matched by the conventional music scores of individuals who were highly accepting of new music. The problem was approached by attempting to match in pairs. Though matching in pairs was not achieved, matching in groups

1. The first step in the process of identifying a problem is to recognize that a problem exists. This is often done by comparing current performance with a desired state or goal. For example, a manager might notice that sales are declining or that customer satisfaction is low. Once a problem is identified, the next step is to define it clearly and specifically. This involves determining the scope of the problem, its causes, and its effects. A clear definition of the problem is essential for developing an effective solution.

2. The second step in the process is to analyze the problem. This involves gathering information about the problem and its context. This information can be obtained through a variety of methods, including interviews, surveys, and data analysis. The goal of this step is to understand the underlying causes of the problem and to identify the factors that are contributing to it. This information is then used to develop a plan of action.

3. The third step in the process is to develop a solution. This involves identifying the most effective way to address the problem. This is often done by brainstorming ideas and evaluating them against a set of criteria. The criteria might include the cost of the solution, the time it takes to implement, and the likelihood of success. Once a solution has been identified, the next step is to implement it.

4. The fourth step in the process is to implement the solution. This involves putting the plan of action into effect. This is often done by assigning tasks to individuals or teams and providing them with the resources they need to complete the tasks. It is important to monitor the progress of the solution and to make adjustments as needed. This is often done through regular communication and reporting.

5. The fifth and final step in the process is to evaluate the results. This involves comparing the current performance with the desired state or goal. This is often done through a variety of methods, including surveys, interviews, and data analysis. The goal of this step is to determine whether the solution has been effective and to identify any areas for improvement. This information is then used to develop a new plan of action if necessary.

was, as can be seen from Table 18. In this way, two groups, a High Acceptance and a Low Acceptance group were obtained.

To avoid bias, the data made available to the experimenter to achieve this matching was a code number for each subject, his score on conventional music and his score on new music. All other identifying information, the name or the dogmatism score, were withheld. At no time prior to, or during, the individual experiment was the experimenter aware of the music group, high or low accepting, to which a given subject belonged.

From a list of subjects' names arranged by an acquaintance of the experimenter according to course and instructor, the subjects were contacted by the experimenter. They were told that their names had been chosen at random for further participation in the experiment, on an individual basis. As an inducement, they were told that they would be given a token payment of one dollar for less than an hour of their time to be spent in some pencil and paper work. All subjects contacted agreed to participate.

Each of the individual interviews was standardized. The subject was told:

"Today you are going to be given a newly devised test of general intelligence. The problem is not a simple one but the solution can be reached by good logical analysis. Here is the problem. Read it over carefully."

The mimeographed problem was handed to the subject. After he had read the problem the experimenter continued:

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text notes that without clear documentation, it becomes difficult to track expenses, revenues, and other critical data points.

2. The second section focuses on the role of technology in modern record-keeping. It highlights how digital tools and software solutions can significantly improve the efficiency and accuracy of data management. The author suggests that organizations should invest in reliable systems to ensure that their records are secure, accessible, and easy to update.

3. The third part of the document addresses the challenges associated with data security and privacy. It discusses the risks of data breaches and the importance of implementing robust security protocols. The text advises organizations to regularly update their security measures and to provide training to employees on best practices for handling sensitive information.

4. The fourth section explores the legal and regulatory requirements that govern record-keeping. It notes that different industries and jurisdictions have specific rules regarding the retention and disposal of records. Organizations must stay informed about these regulations to avoid potential legal consequences and ensure compliance.

5. The fifth part of the document discusses the importance of regular audits and reviews. It explains that periodic audits help identify discrepancies, errors, and areas for improvement in the record-keeping process. The text suggests that organizations should establish a clear schedule for audits and assign responsibility to qualified personnel.

6. The sixth section covers the topic of data backup and recovery. It emphasizes that having a reliable backup strategy is crucial to protect against data loss due to hardware failures, natural disasters, or cyberattacks. The author recommends using off-site storage solutions and testing recovery procedures to ensure that data can be restored quickly and accurately.

7. The seventh part of the document discusses the importance of clear communication and collaboration between different departments. It notes that record-keeping is often a cross-functional activity, and effective communication is key to ensuring that all relevant parties are involved and up-to-date.

8. The eighth section of the document discusses the importance of training and education for staff. It suggests that providing regular training on record-keeping procedures and best practices can help improve the overall quality and consistency of the data. The text also mentions the importance of staying current on industry trends and technological advancements.

9. The ninth part of the document discusses the importance of maintaining a clear and organized filing system. It suggests that using consistent naming conventions and folder structures can make it much easier to locate and retrieve information. The text also mentions the importance of regularly archiving old records to keep the active system manageable.

10. The final part of the document discusses the importance of staying up-to-date on industry news and trends. It suggests that organizations should regularly read industry publications, attend conferences, and participate in professional associations to stay informed about the latest developments in record-keeping and data management.

"I'd like to ask you to think out loud as you work the problem so I can let you know whether you are correct or not. You may ask questions as you go along and you may refer to the problem at any time. You may use the scratch paper in any way you wish. Now let's read the problem over together."

The total time allowed for the solution of the problem was forty minutes. For the first ten minutes the subject worked continuously regardless of whether he overcame any of the three sets by himself. If he did overcome any of the three sets by himself, the time taken to do so was recorded by the experimenter. At the end of the ten minutes the experimenter asked:

"Have you figured it out yet?"

If the subject had not, the experimenter gave a hint designed to overcome one of the three sets. Which hint was given depended on which set(s) the subject had already overcome by himself. If the subject had not overcome any of the three sets, the first hint was designed to overcome the facing set. The subject was then told that he would be given an additional five minutes. If no solution was forthcoming at the end of this time, the subject was given a second hint to overcome the direction set, and was given an additional five minutes. If there was still no solution at the end of this time, the subject was given a third hint designed to overcome the movement set.

In the cases where the subject overcame one set on his own within the first ten minutes, he was given the second set at the end of ten minutes, and the third set at the end of fifteen minutes.

In the cases where the subject overcame two sets within the first ten minutes by himself, he was given the third set at the end of ten minutes. This procedure was followed for all subjects without exception.

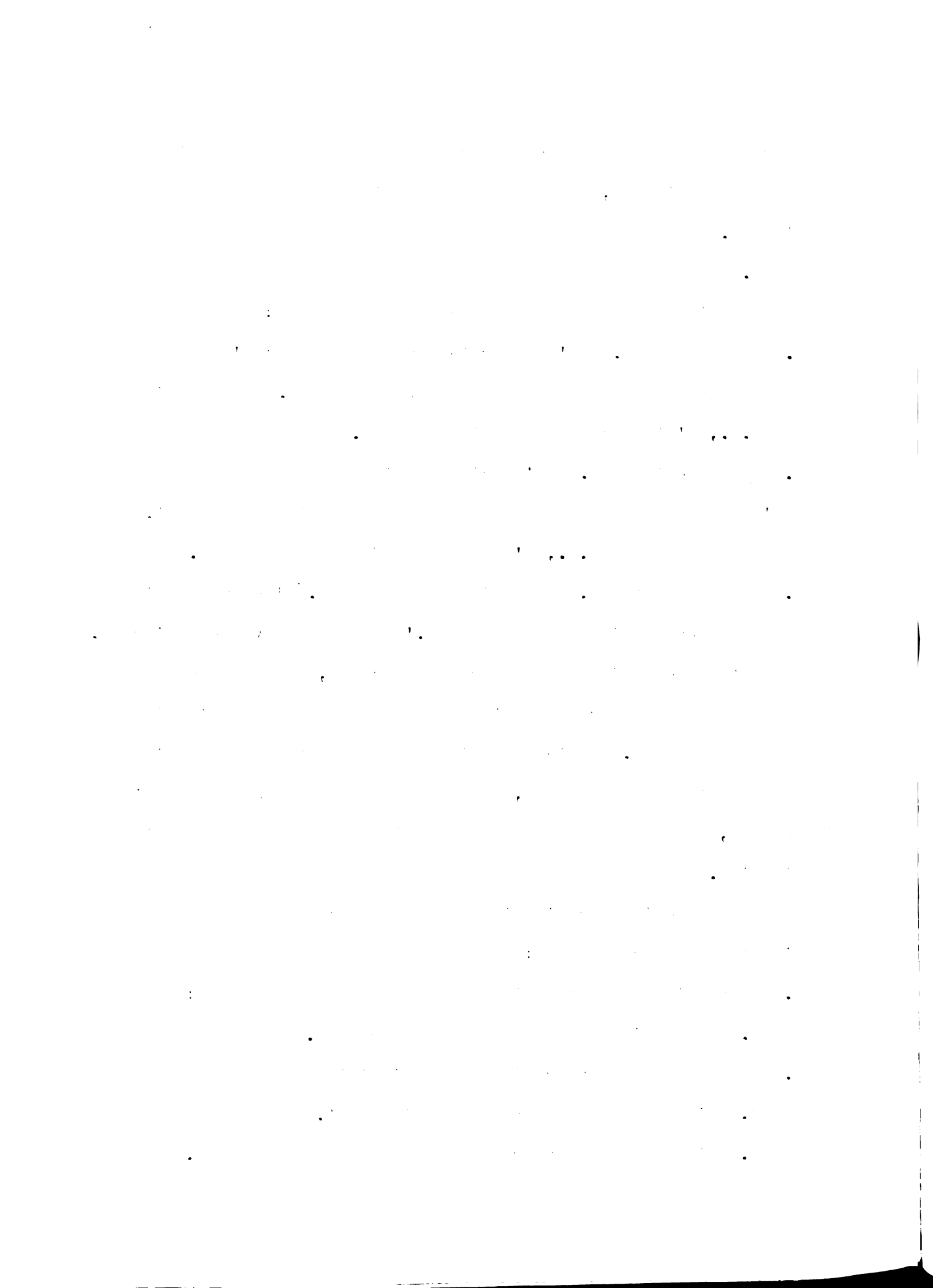
The hints were given as needed and as follows:

1. The facing set. "I'm going to give you a hint: 'Joe does not have to face the food in order to eat it'. (Repeat hint) "O.K., I'll give you five minutes more."
2. The direction set. "I'm going to give you another hint: 'Joe can jump sideways and backwards as well as forwards'." (Repeat hint) "O.K., I'll give you five minutes more."
3. The movement set. "Here is one more hint. 'Joe was moving east when the food was presented.' You have five more minutes."

After the subject had solved the problem, or at the end of forty minutes the subject was told the solution to the problem if he had not solved it. Following this he was told that the problem was not a test of intelligence, was asked not to discuss the problem with others, was thanked for his cooperation and was paid one dollar for his time.

The following quantitative measures were obtained by the experimenter for each subject:

- A. Concerning the total time taken to solve the problem:
 1. Total time taken to solve the problem.
- B. Concerning the overcoming of the individual sets:
 2. Time taken to overcome the first set.
 3. Time taken to overcome the first and second sets.



4. Time taken to overcome all three sets.
 5. Number of sets overcome in the first five minutes.
 6. Number of sets overcome in the first ten minutes.
- C. Concerning the integration of the new sets after the older sets had been overcome:
7. Time taken to solve the problem after the first set was overcome.
 8. Time taken to solve the problem after the first and second sets were overcome.
 9. Time taken to solve the problem after all three sets were overcome.

Treatment of the Data and Statistical Considerations

Three analyses of the data were performed:

Analysis I. For two groups, a High Acceptance group and a Low Acceptance group, 34 subjects in each, equated on acceptance of conventional music, analysis was based upon the relationship between the pooled new music scores, i.e., the sum of scores for both Schonberg and Berg, and performance on the cognitive task.

Analysis II. For two groups, a High Acceptance group and a Low Acceptance group, 34 subjects in each, equated on acceptance of conventional music, analysis was based upon the relationship between scores on Schonberg alone and performance on the cognitive task.

Analysis III. Within the groups of Analysis II were 9 females in the High Acceptance and 4 females in the Low Acceptance group

with respect to Schonberg's music. An exploratory analysis was undertaken for the males alone, 25 high and 30 low in acceptance of Schonberg, equated on their acceptance of conventional music.

In view of the time limits set on the various phases of the problem, i.e., ten minutes to overcome the first set, fifteen for the second, twenty for the third and forty for the solution of the problem, the distribution of measures cannot approximate the normal curve. Consequently a distribution-free statistic was used. A rank test, White's T (4), for the significance of the difference between groups was used. This statistic tests the null hypothesis that two sets of observations are from a common population, without any assumption being made concerning the distribution of the measures in this population. One-tailed tests of significance were utilized wherever directional hypotheses were made. For the measures of time taken to overcome the individual sets, however, chi-square was used because of the large number of tied scores and the extreme negative skew.

Results: Analysis I

Table 14 presents the results for time taken to solve the problem. The difference, though negligible statistically, is in the predicted direction with the High Acceptance group tending toward less time to solve the problem. Thus the hypothesis which states that persons low in acceptance of new music should take longer to solve the problem than persons high in acceptance of new music is not confirmed.

[The page contains extremely faint and illegible text, likely bleed-through from the reverse side of the document. The text is too light to transcribe accurately.]

TABLE 14

COMPARISON BETWEEN GROUPS HIGH AND LOW IN ACCEPTANCE
OF SCHONBERG AND BERG ON THE TOTAL TIME TAKEN
TO SOLVE THE DENNY DOODLEBUG PROBLEM

| Group | N | Mean Times* | Z | p |
|-----------------|----|-------------|------|-----|
| High Acceptance | 34 | 25.91 | | |
| | | | .245 | .42 |
| Low Acceptance | 34 | 26.39 | | |

*The mean times, presented for comparison purposes, do not enter into the computation of the non-parametric statistic utilized.

Concerning time taken to solve the problem after each of the sets is overcome, as seen in Table 15, none of the results is significant. While the direction of the results favors the Low Acceptance group after the first set is overcome, the direction shifts after the second and third sets. Thus the hypothesis that persons low in acceptance of new music should take more time integrating the sets already overcome than persons high in receptivity is not confirmed.

As indicated by Table 17, no significant differences were found on the number of sets overcome either within the first five or first ten minutes. Thus the null hypothesis that the High Acceptance group will not differ from the Low Acceptance group in the number of sets overcome is not rejected.

From Table 18 it is seen that the two groups were well matched on Age, ACE ((22 of the High Acceptance and 32 of the Low Acceptance scores available) and on Conventional Music. With respect to Dogmatism, the groups differ in the direction anticipated on the basis of the findings in Experiments I and II in which individuals who were high in dogmatism were relatively less accepting of Schonberg than individuals who were low in dogmatism.

In summary, although none of the hypotheses are confirmed, the direction of the differences on problem solving time (Table 14) and in two of the three integration times (Table 15) is toward lower time scores for those high in acceptance of the Schonberg and Berg music.



TABLE 15

COMPARISON BETWEEN GROUPS HIGH AND LOW IN ACCEPTANCE OF
SCHONBERG AND BERG ON MEAN INTEGRATION TIME AFTER
THE FIRST, SECOND AND THIRD SETS ARE OVERCOME

| Group | N | After First Set | | | After Second Set | | | After Third Set | | |
|--------------------|----|-----------------|------|-----|------------------|------|-----|-----------------|------|-----|
| | | Mean Time* | Z | P | Mean Time | Z | P | Mean Time | Z | P |
| High Acceptance | 34 | 19.76 | | | 14.04 | | | 9.75 | | |
| | | | .263 | .40 | | .215 | .42 | | .343 | .38 |
| Low Acceptance | 34 | 19.21 | | | 14.87 | | | 10.44 | | |

*The mean times presented for comparison purposes, do not enter into the computation of the non-parametric statistic utilized.

TABLE 16

COMPARISON BETWEEN GROUPS HIGH AND LOW IN ACCEPTANCE OF
SCHONBERG AND BERG ON THE MEAN TIME TAKEN TO
OVERCOME THE FIRST, SECOND AND THIRD SETS

| Group | N | First Set | Second Set | Third Set |
|-----------------|----|-----------|------------|-----------|
| High Acceptance | 34 | 6.31 | 11.72 | 16.30 |
| Low Acceptance | 34 | 7.46 | 11.80 | 16.21 |

Tests of significance of the differences presented here were not computed because of the extreme skewness of the data and the large number of tied scores present.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is crucial for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support effective decision-making.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and reporting, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides strategies to mitigate these risks and ensure that data is used responsibly and ethically.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of ongoing monitoring and evaluation to ensure that data management practices remain effective and up-to-date.

6. The sixth part of the document provides a detailed overview of the data collection process, including the identification of data sources, the design of data collection instruments, and the implementation of data collection procedures.

7. The seventh part of the document discusses the various methods used for data analysis, such as descriptive statistics, inferential statistics, and qualitative analysis. It explains how these methods are used to interpret the data and draw meaningful conclusions.

8. The eighth part of the document focuses on the presentation of data, including the use of tables, charts, and graphs. It provides guidelines for creating clear and concise reports that effectively communicate the results of the data analysis.

9. The ninth part of the document discusses the importance of data security and privacy. It outlines the measures that should be taken to protect sensitive data from unauthorized access and ensure compliance with relevant regulations.

10. The tenth part of the document concludes by emphasizing the value of data in driving organizational success. It encourages the organization to continue to invest in data management and analysis to gain a competitive edge in the market.

TABLE 17

NUMBER OF SETS OVERCOME WITHIN THE FIRST FIVE MINUTES
AND WITHIN THE FIRST TEN MINUTES BY GROUPS HIGH
AND LOW IN ACCEPTANCE OF SCHONBERG AND BERG

| Group | N | 0 | 1 | 2 | 3 | Chi ² | df* | p |
|--|----|----|----|---|---|------------------|-----|------|
| I. Number of sets overcome within first 5 minutes | | | | | | | | |
| High Acceptance | 34 | 20 | 12 | 2 | 0 | | | |
| Low Acceptance | 34 | 24 | 9 | 1 | 0 | 1.029 | 1 | N.S. |
| ----- | | | | | | | | |
| II. Number of sets overcome within first 10 minutes | | | | | | | | |
| High Acceptance | 34 | 17 | 13 | 4 | 0 | | | |
| Low Acceptance | 34 | 20 | 12 | 2 | 0 | .536 | 1 | N.S. |

*To avoid small cell frequencies, data for 1, 2 and 3 sets were combined.

TABLE 18

AGE, INTELLIGENCE, CONVENTIONAL MUSIC AND DOGMATISM
 SCORES OF THE HIGH AND LOW RECEPTIVE
 GROUPS (SCHONBERG AND BERG)

| Variable | Group | N | Mean | Sigma | t | p |
|--------------------|-----------------|----|--------|-------|-----|------|
| Age | High Acceptance | 34 | 22.94 | 3.20 | .69 | N.S. |
| | Low Acceptance | 34 | 22.35 | 3.76 | | |
| ACE* | High Acceptance | 22 | 5.36 | 2.46 | .18 | N.S. |
| | Low Acceptance | 32 | 5.47 | 1.90 | | |
| Conventional Music | High Acceptance | 34 | 17.32 | 7.72 | .84 | N.S. |
| | Low Acceptance | 34 | 15.70 | 7.91 | | |
| Dogmatism** | High Acceptance | 23 | 151.95 | 22.47 | .64 | N.S. |
| | Low Acceptance | 24 | 156.45 | 24.38 | | |

* 22 High and 32 Low Acceptance scores available.

** 23 High and 24 Low Acceptance scores available.

Results: Analyses II and III

In Experiments I and II, differences in dogmatism were found to be more closely related to Schonberg than to the other new music, i.e., Bartok. Consequently a second analysis based upon the scores on Schonberg alone rather than on the pooled scores of Schonberg and Berg was undertaken. A separate analysis was conducted for the two main groups of subjects, thirty-four in each of the groups High and Low in Acceptance of Schonberg. Another analysis was undertaken for the males alone, twenty-five and thirty in the High Acceptance and Low Acceptance groups.

Hypothesis I states that individuals low in acceptance of new music should take longer to solve the problem than individuals high in acceptance of new music. Table 19 summarizes the results on the total time taken to solve the problem. For the two main groups, though the difference is not significant ($p=.19$) it is in the predicted direction. The High Acceptance group tends to solve the problem in less time than the Low Acceptance group.

Analysis of the data for males alone seems to accentuate slightly these differences, the High Acceptance males tending toward a faster solution to the problem ($p=.14$) than the Low Acceptance males.

Turning now to a comparison between groups on time taken to solve the problem after the first, second and third sets are overcome, Table 20 summarizes the results. For the main groups,

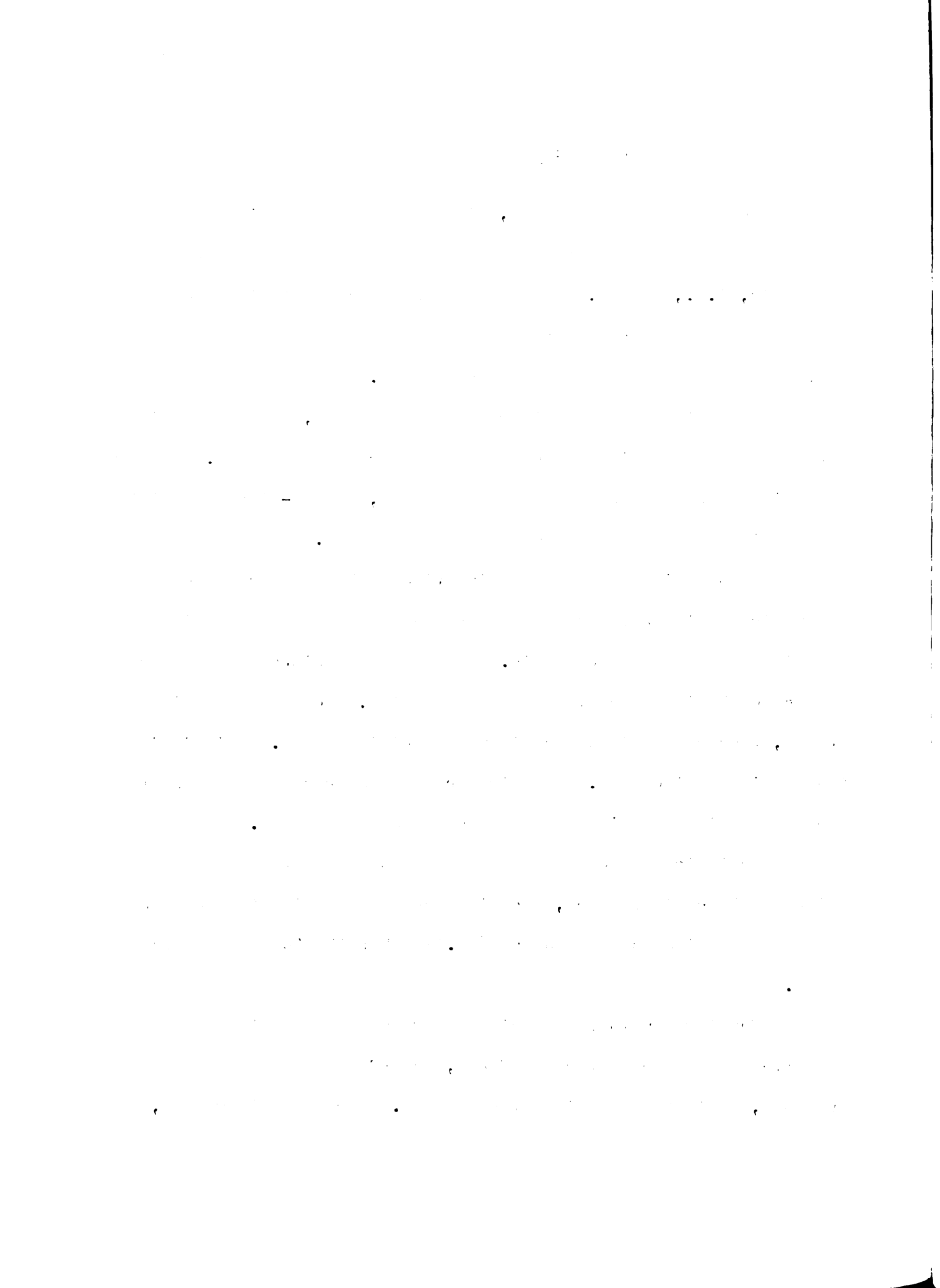


TABLE 19

COMPARISONS BETWEEN GROUPS HIGH AND LOW IN ACCEPTANCE
OF SCHONBERG ON THE TOTAL TIME TAKEN TO SOLVE
THE DENNY DOODLEBUG PROBLEM

| Main Groups | N | Mean Time* | Z | p |
|-----------------|----|------------|-------|-----|
| High Acceptance | 34 | 25.70 | .852 | .19 |
| Low Acceptance | 34 | 27.00 | | |
| ----- | | | | |
| Males | | | | |
| High Acceptance | 25 | 24.50 | 1.058 | .14 |
| Low Acceptance | 30 | 27.26 | | |

*The mean times, presented for comparison purposes, do not enter into the computation of the non-parametric statistic utilized.

TABLE 20

COMPARISON BETWEEN GROUPS HIGH AND LOW IN ACCEPTANCE
OF SCHONBERG ON TIME TAKEN TO SOLVE THE PROBLEM
AFTER THE FIRST, SECOND AND
THIRD SETS ARE OVERCOME

| Main Groups | N | After First Set | | | After Second Set | | | After Third Set | | |
|--------------------|----|-----------------|------|-----|------------------|--------|-----|-----------------|-------|-----|
| | | Mean Time* | Z | p | Mean Time | Z | p | Mean Time | Z | p |
| High Acceptance | 34 | 19.41 | | | 14.088 | | | 9.65 | | |
| | | | .325 | .38 | | .318 | .38 | | .503 | .30 |
| Low Acceptance | 34 | 19.57 | | | 15.11 | | | 10.54 | | |
| ----- | | | | | | | | | | |
| Males | | | | | | | | | | |
| High Acceptance | 25 | 18.08 | | | 12.81 | | | 8.41 | | |
| | | | .786 | .22 | | +1.115 | .14 | | 1.090 | .14 |
| Low Acceptance | 30 | 19.41 | | | 15.17 | | | 10.61 | | |

*Mean times, presented for comparison purposes, do not enter into the computation of the non-parametric statistic utilized.



the differences, though not significant, tend toward less time for the High Acceptance group in solving the problem after each of the sets is overcome.

Analysis of the data for males only slightly accentuates these differences. As can be seen, the High Acceptance males tend toward less time to solve the problem after the first set ($p=.22$), after the second set ($p=.15$), and after the third set ($p=.15$).

Summarizing, some support for Hypothesis II, which states that individuals who are low in acceptance of new music will take longer to solve the problem after the sets are overcome, is given by comparison of High and Low Acceptance males. When females are included, i.e., the main group, the differences are less sharp.

Tables 21 and 22 indicate that in none of the analyses of number of sets overcome in the first five or first ten minutes does the High Acceptance differ from the Low Acceptance group.

Table 24 presents the data on Age, intelligence as measured by the ACE, Conventional Music and Dogmatism, for the Main Group of subjects. None of the differences is significant. As anticipated, in the light of the findings in Experiments I and II, the difference in Dogmatism (21 High Acceptance and 26 Low Acceptance scores available) approaches significance, with the High Acceptance group lower in Dogmatism than the Low Acceptance group.

Table 25 presents Age, ACE, Conventional Music and Dogmatism data for males only. So far as can be determined from the incomplete

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for ensuring transparency and accountability in financial management. This section also highlights the role of internal controls in preventing fraud and errors.

2. The second part of the document focuses on the implementation of a robust risk management framework. It outlines the various risks that an organization may face, including financial, operational, and reputational risks. The document provides a detailed description of the risk assessment process, which involves identifying, analyzing, and evaluating risks to determine their potential impact on the organization's objectives.

3. The third part of the document addresses the importance of effective communication and reporting. It stresses that clear and concise communication is crucial for ensuring that all stakeholders are informed and aligned with the organization's goals and strategies. This section also discusses the role of regular reporting in monitoring progress and identifying areas for improvement.

4. The fourth part of the document discusses the importance of continuous improvement and innovation. It emphasizes that organizations must constantly evaluate their processes and procedures to identify areas for improvement and implement changes that enhance efficiency and effectiveness. This section also highlights the role of innovation in driving growth and competitive advantage.

5. The fifth part of the document discusses the importance of ethical conduct and corporate social responsibility. It emphasizes that organizations have a responsibility to act ethically and to contribute positively to society. This section also discusses the role of corporate social responsibility in enhancing the organization's reputation and long-term sustainability.

6. The sixth part of the document discusses the importance of talent management and organizational culture. It emphasizes that organizations must attract, develop, and retain top talent to ensure their success. This section also discusses the role of organizational culture in shaping the organization's values and behaviors.

7. The seventh part of the document discusses the importance of financial management and budgeting. It emphasizes that organizations must maintain a strong financial position to ensure their long-term viability. This section also discusses the role of budgeting in allocating resources and monitoring financial performance.

8. The eighth part of the document discusses the importance of legal and regulatory compliance. It emphasizes that organizations must adhere to all applicable laws and regulations to avoid legal penalties and reputational damage. This section also discusses the role of legal and regulatory compliance in ensuring the organization's integrity and trustworthiness.

9. The ninth part of the document discusses the importance of environmental sustainability and climate change. It emphasizes that organizations have a responsibility to minimize their environmental footprint and to contribute to a sustainable future. This section also discusses the role of environmental sustainability in enhancing the organization's reputation and long-term viability.

10. The tenth part of the document discusses the importance of digital transformation and technology. It emphasizes that organizations must embrace digital technologies to improve their operations and enhance their competitiveness. This section also discusses the role of digital transformation in driving innovation and growth.

TABLE 21
NUMBER OF SETS OVERCOME WITHIN THE FIRST FIVE
MINUTES BY GROUPS HIGH AND LOW IN
ACCEPTANCE OF SCHONBERG

| Main Groups | N | 0 | 1 | 2 | 3 | Chi ² | df* | p |
|--------------------|----|----|----|---|---|------------------|-----|------|
| High Acceptance | 34 | 20 | 12 | 2 | 0 | 1.029 | 1 | N.S. |
| Low Acceptance | 34 | 24 | 9 | 1 | 0 | | | |
| ----- | | | | | | | | |
| Males | | | | | | | | |
| High Acceptance | 25 | 15 | 8 | 2 | 0 | 1.77 | 1 | N.S. |
| Low Acceptance | 30 | 23 | 6 | 1 | 0 | | | |

*To avoid small cell frequencies, data for 1, 2 and 3 sets were combined.

TABLE 22
NUMBER OF SETS OVERCOME WITHIN THE FIRST TEN
MINUTES BY GROUPS HIGH AND LOW IN
ACCEPTANCE OF SCHONBERG

| Main Groups | N | 0 | 1 | 2 | 3 | Chi ² | df* | p |
|--------------------|----|----|----|---|---|------------------|-----|------|
| High Acceptance | 34 | 17 | 13 | 4 | 0 | .536 | 1 | N.S. |
| Low Acceptance | 34 | 20 | 12 | 2 | 0 | | | |
| ----- | | | | | | | | |
| Males | | | | | | | | |
| High Acceptance | 25 | 14 | 8 | 3 | 0 | .305 | 1 | N.S. |
| Low Acceptance | 30 | 19 | 10 | 1 | 0 | | | |

*To avoid small cell frequencies, data for 1, 2 and 3 sets were combined.

TABLE 23

COMPARISONS BETWEEN GROUPS HIGH AND LOW IN ACCEPTANCE
OF SCHONBERG ON THE MEAN TIME TAKEN TO OVERCOME
THE FIRST, SECOND AND THIRD SETS

| Main Groups | N | First Set | Second Set | Third Set |
|-----------------|----|-----------|------------|-----------|
| High Acceptance | 34 | 6.31 | 11.60 | 16.05 |
| Low Acceptance | 34 | 7.46 | 11.91 | 16.45 |
| ----- | | | | |
| Males | | | | |
| High Acceptance | 25 | 6.60 | 11.84 | 16.24 |
| Low Acceptance | 30 | 7.99 | 12.11 | 16.65 |

Tests of significance of the differences presented here were not computed because of the extreme skewness of the data and the large number of tied scores present.

The following table shows the results of the experiment. The first column shows the number of trials, the second column shows the number of correct responses, and the third column shows the percentage of correct responses. The fourth column shows the number of trials that were not completed.

| Number of trials | Number of correct responses | Percentage of correct responses | Number of trials not completed |
|------------------|-----------------------------|---------------------------------|--------------------------------|
| 10 | 8 | 80% | 2 |
| 20 | 15 | 75% | 5 |
| 30 | 22 | 73% | 8 |
| 40 | 28 | 70% | 12 |
| 50 | 35 | 70% | 15 |
| 60 | 42 | 70% | 18 |
| 70 | 48 | 69% | 22 |
| 80 | 55 | 69% | 25 |
| 90 | 62 | 69% | 28 |
| 100 | 70 | 70% | 30 |

The results of the experiment show that the number of correct responses increases as the number of trials increases. The percentage of correct responses remains relatively constant, around 70%. The number of trials not completed also increases as the number of trials increases.

The following table shows the results of the experiment. The first column shows the number of trials, the second column shows the number of correct responses, and the third column shows the percentage of correct responses. The fourth column shows the number of trials that were not completed.

| Number of trials | Number of correct responses | Percentage of correct responses | Number of trials not completed |
|------------------|-----------------------------|---------------------------------|--------------------------------|
| 10 | 8 | 80% | 2 |
| 20 | 15 | 75% | 5 |
| 30 | 22 | 73% | 8 |
| 40 | 28 | 70% | 12 |
| 50 | 35 | 70% | 15 |
| 60 | 42 | 70% | 18 |
| 70 | 48 | 69% | 22 |
| 80 | 55 | 69% | 25 |
| 90 | 62 | 69% | 28 |
| 100 | 70 | 70% | 30 |

The results of the experiment show that the number of correct responses increases as the number of trials increases. The percentage of correct responses remains relatively constant, around 70%. The number of trials not completed also increases as the number of trials increases.

TABLE 24

AGE, INTELLIGENCE, CONVENTIONAL MUSIC AND
 DOGMATISM SCORES OF THE GROUPS (MALES
 AND FEMALES) HIGH AND LOW IN
 ACCEPTANCE OF SCHONBERG

| Variable | Group | N | Mean | Sigma | t | p |
|-----------------------|--------------------|----|--------|-------|------|------|
| Age | High Acceptance | 34 | 22.44 | 3.71 | .48 | N.S. |
| | Low Acceptance | 34 | 22.85 | 3.26 | | |
| ACE* | High Acceptance | 22 | 5.77 | 2.31 | .30 | N.S. |
| | Low Acceptance | 32 | 5.18 | 2.10 | | |
| Conventional Music | High Acceptance | 34 | 17.17 | 7.88 | .69 | N.S. |
| | Low Acceptance | 34 | 15.85 | 7.48 | | |
| Dogmatism** | High Acceptance | 21 | 148.14 | 21.25 | 1.56 | .10 |
| | Low Acceptance | 26 | 159.19 | 25.27 | | |

* 22 High and 32 Low acceptance scores available

** 21 High and 26 Low acceptance scores available

TABLE 25

AGE, INTELLIGENCE, CONVENTIONAL MUSIC AND DOGMATISM SCORES
OF THE GROUPS (MALES ONLY) HIGH AND LOW IN
ACCEPTANCE OF SCHONBERG

| Variable | Group | N | Mean | Sigma | t | p |
|-----------------------|--------------------|----|--------|--------|------|------|
| Age | High Acceptance | 25 | 22.28 | 3.32 | .205 | N.S. |
| | Low Acceptance | 30 | 23.20 | 3.31 | | |
| ACE* | High Acceptance | 17 | 6.12 | 1.83 | .183 | N.S. |
| | Low Acceptance | 29 | 5.38 | 2.02 | | |
| Conventional Music | High Acceptance | 25 | 16.96 | 8.95 | .129 | N.S. |
| | Low Acceptance | 30 | 15.53 | 7.49 | | |
| Dogmatism** | High Acceptance | 15 | 149.33 | 16.077 | .201 | N.S. |
| | Low Acceptance | 25 | 157.88 | 24.88 | | |

* 17 High and 29 Low acceptance scores available

** 15 High and 25 Low acceptance scores available

ACE data, the groups do not differ significantly on intelligence. On Dogmatism, the High Acceptance group tends to have a lower mean score than the Low Acceptance group.

Discussion of Experiment III

The results, though not significant, are in the hypothesized direction and hence may be considered suggestive of a relationship between negative feelings about new music (Schonberg) and performance in a new problem situation. Reasons for failure to obtain clearly confirmatory results may be sought at three levels: (1) the nature of the two tasks, (2) statistical considerations, and (3) theoretical considerations.

(1) **The Nature of the Two Tasks** -- Though there is some similarity between listening to a new piece of music and working a new problem in that both situations are outside the realm of the individual's previous experience, there are also important differences. Checking adjectives is a relatively passive act while solving a problem involves initiative and activity. The problem solver has to "come to grips" with the problem so that he reaches a solution for which external criteria have been pre-determined. The music situation does not require the same degree of effort and personal involvement, nor are there external criteria for judging the correctness of the response. The tasks differ on the dimension of simplicity-complexity with a vast difference between checking adjectives and solving a problem too difficult for most individuals without help.

Thus, in addition to the cognitive-affective dimensions, the two tasks differ on the passivity-activity and simplicity-complexity dimensions so that different psychological processes would likely be invoked for the two tasks. In view of the differences in the tasks along these several dimensions, it seems surprising that any prediction, even as little as that which was achieved, was possible. A re-test of the hypotheses equating tasks on complexity as well as on the degree of coming to grips would perhaps yield more conclusive results.

(2) Statistical Considerations -- The amount of common variance between scores on the dogmatism scale and the response to new music is small, as suggested by the low relationship found in Experiment II, Excerpt 2 (Table 5). It follows that for any given score on the new music, the score on dogmatism may be high, middle low or any in between. Both Rokeach, McGovney and Denny (23) and Vidulich (27) found that performance on the problem was related to extreme scores on dogmatism, i.e., those high were slower and those low were faster in integrating sets and solving the problem. It would be expected that only that part of the response to new music which is correlated with dogmatism would affect problem solving in the same way that dogmatism does. In view of the low common variance, individuals selected on the basis of extreme music scores would include middle as well as high and low scorers on dogmatism. Given the results of Experiment II and its methodology, the results of the present experiment should have been predictable by the computation of a correlation coefficient.

1. Introduction

The purpose of this report is to provide a comprehensive overview of the current state of the global economy and the challenges it faces. This report will analyze the impact of the COVID-19 pandemic on the global economy and discuss the various measures that have been implemented to mitigate its effects. It will also explore the long-term implications of the pandemic and the potential for a global recovery.

The report is organized into several sections. The first section provides an overview of the global economy and the challenges it faces. The second section discusses the impact of the COVID-19 pandemic on the global economy. The third section explores the various measures that have been implemented to mitigate the effects of the pandemic. The fourth section discusses the long-term implications of the pandemic and the potential for a global recovery.

2. Global Economy

The global economy has experienced significant growth in recent years, driven by a combination of factors including technological innovation, globalization, and a strong recovery from the 2008 financial crisis. However, the global economy is currently facing a number of challenges, including the COVID-19 pandemic, which has led to a global recession and a sharp decline in economic activity.

The COVID-19 pandemic has had a profound impact on the global economy, leading to a global recession and a sharp decline in economic activity. The pandemic has caused a significant loss of jobs and income, and has led to a global health crisis. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

3. Impact of COVID-19

The COVID-19 pandemic has had a profound impact on the global economy, leading to a global recession and a sharp decline in economic activity. The pandemic has caused a significant loss of jobs and income, and has led to a global health crisis. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

The impact of the COVID-19 pandemic on the global economy has been significant. The pandemic has led to a global recession and a sharp decline in economic activity. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

4. Measures to Mitigate the Effects

Various measures have been implemented to mitigate the effects of the COVID-19 pandemic on the global economy. These measures include financial support, fiscal stimulus, and monetary policy. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

The measures implemented to mitigate the effects of the COVID-19 pandemic on the global economy include financial support, fiscal stimulus, and monetary policy. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

5. Long-term Implications

The COVID-19 pandemic has had long-term implications for the global economy. The pandemic has led to a global recession and a sharp decline in economic activity. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

The long-term implications of the COVID-19 pandemic on the global economy include a global recession and a sharp decline in economic activity. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

6. Conclusion

The COVID-19 pandemic has had a profound impact on the global economy, leading to a global recession and a sharp decline in economic activity. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

The COVID-19 pandemic has had a profound impact on the global economy, leading to a global recession and a sharp decline in economic activity. The global economy is currently in a state of uncertainty, and it is unclear when a full recovery will be achieved.

(3) Theoretical Considerations -- In searching for a relationship between feeling and cognition, only a single affective dimension viz. like-dislike was considered. Theoretical considerations from another framework, psychoanalytic, suggests an alternative view of this problem. The term Isolation in psychoanalytic theory refers to a fragmentation of conscious experience that (1) either keeps apart ideas that belong together emotionally, or (2) keeps apart ideas and the affects corresponding to them. Rokeach has been concerned mainly with the first manifestation of isolation in his use of the term. In the Doodlebug studies, individuals high in dogmatism were found to have difficulty putting "ideas" (sets) together which belong together. Is it the case that both (1) and (2) are part of the same syndrome? May we expect that fragmentation of idea, i.e., cognitive narrowing, co-exists with separating feeling from ideas, a kind of affective narrowing?

We should like to reformulate our hypotheses to take into account the notion of affective narrowing and its opposite, affective breadth. The general hypothesis is that there exists an iso-morphic correspondence between affective narrowing and constriction with cognitive narrowing and constriction. Expectations are that individuals who are limited in the range of affects which they can experience will exhibit a parallel limitation in the range of ideas they can entertain. The converse iso-morphism between degree of openness, breadth and intensity of affect with openness breadth and extensity of cognition is also expected. Operationally, it would be expected that

individuals who could or could not perform well in tasks requiring sensitivity to diverse types of affect would or would not perform well in tasks requiring openness to new ideas.

CHAPTER V

SUMMARY AND CONCLUSIONS

Three interrelated experiments were undertaken, all of which are in the conceptual framework of Rokeach on open and closed belief systems. The purpose of Experiment I was to investigate the relationship between open and closed belief systems and response to new music. From the theoretical model it was hypothesized that those with closed belief systems would be less accepting of new music than those with open belief systems. It was further hypothesized that those with closed belief systems would be less accepting of the composer than those with open belief systems.

One hundred and thirty-three subjects who had taken the dogmatism scale, the measure of open and closed belief systems, were exposed to two unfamiliar samples of music, one conventional, exemplified by Brahms, and the other extremely modern, exemplified by Schonberg. Using extreme groups, the results indicate that those with closed belief systems are less accepting of the new music and are also less accepting of the composer than those with open belief systems. No significant differences were found between these groups in age, intelligence as estimated from the ACE, acceptance of conventional music or knowledge about music.

Experiment II was designed to enlarge the scope of the previous experiment by increasing the number of musical examples and by testing two hypotheses in addition to the two tested previously. The additional hypotheses were to the effect that, given

successive exposures to new music, that those with relatively open belief systems would show a significantly larger gain in acceptance of the new music than those with closed belief systems. A parallel hypothesis was made concerning the acceptance of the composer.

As before, one hundred and forty-seven subjects who had taken the dogmatism scale were exposed to eight unfamiliar musical excerpts, two each from each of two conventional (Brahms and Saint-Saens) and two modern (Schonberg and Bartok) composers. Using extreme groups, the results lend support to the hypotheses for the Schonberg composition, interpreted as being more extremely new, but not for the Bartok, the less extreme sample. The findings concerning the composer parallels that of the music. One striking finding in this study is that the open belief group knows more about serious music in the absence of any observable difference in formal training. This difference in knowledge about music was assumed to be a manifestation of higher aesthetic values of individuals with open belief systems.

In Experiment III, the relationship between affect and cognition was explored. Using a cognitive task requiring both the overcoming and the integration of sets, hypotheses were formulated that: individuals most extremely negative in their feelings about a new musical system would be slower in solving the problem and would find greater difficulty in integrating the sets into a new belief system, than individuals extremely positive in their feelings about new music.

Two hundred and twenty-nine subjects participated in an anonymous group experiment modeled after Experiment II with some modifications in the music. From this pool, two groups, thirty-four in each group were chosen to perform in the individual cognitive task. They were chosen so that they were as equated as conditions would allow on conventional music but as different as possible on new music. Though no significant differences were found, the differences were in the direction predicted by the hypotheses suggesting that a low order relationship may exist between acceptance of new music and performance in a cognitive task.

Failure to confirm the hypotheses was explained in terms of the difference in the nature of the two tasks, i.e., reacting to music vs. solving a problem, and in terms of statistical considerations, given the results of the previous study. A reformulation of the hypotheses positing a parallelism between the range of affect and the range of cognitive functioning was suggested. The notion of affective narrowing is hypothesized as co-occurring with cognitive narrowing and conversely, affective openness with cognitive openness.

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text notes that without reliable records, it would be difficult to track the flow of funds and identify any irregularities.

2. The second part of the document outlines the various methods used to collect and analyze data. It describes how different types of information are gathered from various sources and how this data is then processed to identify trends and patterns. The text highlights the need for consistent and standardized data collection procedures to ensure the reliability of the results.

3. The third part of the document focuses on the analysis of the collected data. It discusses the various statistical techniques and models used to interpret the data and draw meaningful conclusions. The text notes that the analysis should take into account both the quantitative and qualitative aspects of the data to provide a comprehensive understanding of the situation.

4. The fourth part of the document discusses the implications of the findings and the steps that should be taken to address any issues identified. It emphasizes the importance of transparency and accountability in the reporting of results and the need for ongoing monitoring and evaluation to ensure that the system remains effective and secure.

5. The final part of the document provides a summary of the key points and offers recommendations for future research and development. It concludes by stating that the information presented here is intended to provide a clear and concise overview of the current state of the field and to guide the work of those who are interested in this area.

APPENDICES

APPENDIX A

THE DOGMATISM SCALE

 DO NOT SIGN YOUR NAME

The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many other people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

| | |
|--------------------------|-----------------------------|
| +1: I AGREE A LITTLE | -1: I DISAGREE A LITTLE |
| +2: I AGREE ON THE WHOLE | -2: I DISAGREE ON THE WHOLE |
| +3: I AGREE VERY MUCH | -3: I DISAGREE VERY MUCH |

- _____ 1. A person who thinks primarily of his own happiness is beneath contempt.
- _____ 2. The main thing in life is for a person to want to do something important.
- _____ 3.* I wish people would be more definite about things.
- _____ 4. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.
- _____ 5. Most people just don't know what's good for them.
- _____ 6.* I don't like to work on a problem unless there is the possibility of coming out with a clear-cut and unambiguous answer.
- _____ 7. In times like these, a person must be pretty selfish if he considers his own happiness primarily.
- _____ 8. A man who does not believe in some great cause has not really lived.

 *Filler items.

- +1: I AGREE A LITTLE -1: I DISAGREE A LITTLE
 +2: I AGREE ON THE WHOLE -2: I DISAGREE ON THE WHOLE
 +3: I AGREE VERY MUCH -3: I DISAGREE VERY MUCH

- _____ 9.* I am in favor of a very strict enforcement of all laws,
 no matter what the consequences.
- _____ 10. I'd like it if I should find someone who would tell me
 how to solve my personal problems.
- _____ 11. Of all the different philosophies which have existed in
 this world there is probably only one which is correct.
- _____ 12.* For most questions there is just one right answer once
 a person is able to get all the facts.
- _____ 13. It is when a person devotes himself to an ideal or
 cause that his life becomes meaningful.
- _____ 14. In this complicated world of ours the only way we can
 know what is going on is to rely upon leaders or experts
 who can be trusted.
- _____ 15.* The trouble with many people is that they don't take
 things seriously enough.
- _____ 16. There are a number of persons I have come to hate because
 of the things they stand for.
- _____ 17. There is so much to be done and so little time to do it in.
- _____ 18.* It bothers me when something unexpected interrupts my
 daily routine.
- _____ 19. It is better to be a dead hero than a live coward.
- _____ 20. A group which tolerates too much difference of opinion
 among its own members cannot exist for long.
- _____ 21.* I often start things I never finish.
- _____ 22. It is only natural that a person should have a much better
 acquaintance with ideas he believes in than with ideas
 he opposes.
- _____ 23. While I don't like to admit this even to myself, I some-
 times have the ambition to become a great man, like
 Einstein, or Beethoven, or Shakespeare.
- _____ 24.* I set a high standard for myself and feel others should
 do the same.

*Filler items.

- +1: I AGREE A LITTLE -1: I DISAGREE A LITTLE
 +2: I AGREE ON THE WHOLE -2: I DISAGREE ON THE WHOLE
 +3: I AGREE VERY MUCH -3: I DISAGREE VERY MUCH

- _____ 25. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary at times to restrict the freedom of certain political groups.
- _____ 26. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."
- _____ 27.* People who seem unsure and uncertain about things make me feel uncomfortable.
- _____ 28. Most people just don't give a "damn" about others.
- _____ 29. A person who gets enthusiastic about a number of causes is likely to be a pretty "wishy-washy" sort of person.
- _____ 30.* Most of the arguments or quarrels I get into are over matters of principle.
- _____ 31. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.
- _____ 32. If given the chance I would do something that would be of great benefit to the world.
- _____ 33.* I don't like things to be uncertain and unpredictable.
- _____ 34. In times like these it is often necessary to be more on guard against ideas put out by certain people or groups in one's own camp than by those in the opposing camp.
- _____ 35. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.
- _____ 36.* I think that I am stricter about right and wrong than most people.
- _____ 37. Once I get wound up in a heated discussion I just can't stop.
- _____ 38. There are two kinds of people in this world: those who are on the side of truth and those who are against it.
- _____ 39.* It is annoying to listen to a lecturer who cannot seem to make up his mind as to what he really believes.
- _____ 40. Man on his own is a helpless and miserable creature.

*Filler items.

- | | |
|--------------------------|-----------------------------|
| +1: I AGREE A LITTLE | -1: I DISAGREE A LITTLE |
| +2: I AGREE ON THE WHOLE | -2: I DISAGREE ON THE WHOLE |
| +3: I AGREE VERY MUCH | -3: I DISAGREE VERY MUCH |

- _____ 41. The United States and Russia have just about nothing in common.
- _____ 42.* Once I have my mind made up I seldom change it.
- _____ 43. In the history of mankind there have probably been just a handful of really great thinkers.
- _____ 44. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.
- _____ 45.* I always see to it that my work is carefully planned and organized.
- _____ 46. The present is all too often full of unhappiness. It is the future that counts.
- _____ 47. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what is going on.
- _____ 48.* Our thinking would be a lot better off if we would just forget about words like "probably", "approximately" and "perhaps".
- _____ 49. Fundamentally, the world we live in is a pretty lonely place.
- _____ 50. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.
- _____ 51.* I like to have a place for everything and everything in its place.
- _____ 52. The worst crime a person can commit is to attack publicly the people who believe in the same thing he does.
- _____ 53. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.
- _____ 54.* I never make judgments about people until I am sure of the facts.

*Filler items.

- | | |
|--------------------------|-----------------------------|
| +1: I AGREE A LITTLE | -1: I DISAGREE A LITTLE |
| +2: I AGREE ON THE WHOLE | -2: I DISAGREE ON THE WHOLE |
| +3: I AGREE VERY MUCH | -3: I DISAGREE VERY MUCH |

- _____ 55. Most of the ideas which get published nowadays aren't worth the paper they are printed on.
- _____ 56. It is only natural for a person to be rather fearful of the future.
- _____ 57.* I am known as a hard and steady worker.
- _____ 58. My blood boils whenever a person stubbornly refuses to admit he's wrong.
- _____ 59. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.
- _____ 60.* I find that a well-ordered mode of life, with regular hours and an established routine, is congenial to my temperament.
- _____ 61.* A strong person will be able to make up his mind even on the most difficult questions.
- _____ 62.* It is hard for me to sympathize with a person who is always doubting and unsure about things.

*Filler items.

APPENDIX B

Please fill in the following information. DO NOT SIGN YOUR NAME

Date _____ Sex _____ Date of Birth _____

City and State of Birth _____ Religious denomination _____

Race or national extraction _____.

The following is a musical interest survey. The answers you give will have no bearing whatever on your grade in this course. The information is for research purposes only.

Please fill in the blank.

1. I have studied classical music (instrumental or vocal) for _____ years.
2. I spend about _____ hours a week listening to classical music.
3. I attended _____ concerts of classical music since September 1954.
4. I have taken _____ courses pertaining to classical music while at MSU.
5. Of the following types of music, I get most enjoyment from (1) Classical, (2) Semi-classical, (3) Jazz, (4) None of these. (Please underline which one.)

The first part of the paper is devoted to the study of the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$. In the second part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$. In the third part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$ and $\nu \rightarrow 0$. In the fourth part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$ and $\nu \rightarrow 0$ and $\mu \rightarrow 0$. In the fifth part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$ and $\nu \rightarrow 0$ and $\mu \rightarrow 0$ and $\lambda \rightarrow 0$. In the sixth part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$ and $\nu \rightarrow 0$ and $\mu \rightarrow 0$ and $\lambda \rightarrow 0$ and $\kappa \rightarrow 0$. In the seventh part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$ and $\nu \rightarrow 0$ and $\mu \rightarrow 0$ and $\lambda \rightarrow 0$ and $\kappa \rightarrow 0$ and $\eta \rightarrow 0$. In the eighth part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$ and $\nu \rightarrow 0$ and $\mu \rightarrow 0$ and $\lambda \rightarrow 0$ and $\kappa \rightarrow 0$ and $\eta \rightarrow 0$ and $\theta \rightarrow 0$. In the ninth part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$ and $\nu \rightarrow 0$ and $\mu \rightarrow 0$ and $\lambda \rightarrow 0$ and $\kappa \rightarrow 0$ and $\eta \rightarrow 0$ and $\theta \rightarrow 0$ and $\phi \rightarrow 0$. In the tenth part, we study the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$ and $\tau \rightarrow \infty$ and $\nu \rightarrow 0$ and $\mu \rightarrow 0$ and $\lambda \rightarrow 0$ and $\kappa \rightarrow 0$ and $\eta \rightarrow 0$ and $\theta \rightarrow 0$ and $\phi \rightarrow 0$ and $\psi \rightarrow 0$.

You are about to hear two excerpts of music. After each excerpt, write the name of the composition and the composer. If you don't know, write D.K.

| Title of Composition | Composer |
|----------------------|----------|
| 1. _____ | _____ |
| 2. _____ | _____ |

If you have ever heard either of these compositions before, please circle the appropriate number above.

You will now hear the same compositions again. This time I would like your reaction to the compositions, that is, the way you feel about them as music, whether you like or dislike them. Please be as frank as you can. Remember it is your personal opinion we want. Will you please check the adjectives which you feel apply to the first composition. Do not place a check if, in your opinion, the adjective doesn't apply.

| Adjectives | First Composition |
|--------------------|-------------------|
| <u>Beautiful</u> | _____ |
| <u>Ugly</u> | _____ |
| <u>Melodious</u> | _____ |
| <u>Noisy</u> | _____ |
| <u>Refined</u> | _____ |
| <u>Vulgar</u> | _____ |
| <u>Graceful</u> | _____ |
| <u>Clumsy</u> | _____ |
| <u>Creative</u> | _____ |
| <u>Impulsive</u> | _____ |
| <u>Coherent</u> | _____ |
| <u>Gibberish</u> | _____ |
| <u>Interesting</u> | _____ |
| <u>Dull</u> | _____ |
| <u>Noble</u> | _____ |
| <u>Coarse</u> | _____ |

AdjectivesFirst CompositionNovelSenselessProfoundSuperficialAttractiveRepulsiveUnusualImpossibleCleverSimplemindedImaginativeFantasticStimulatingDepressing

Please check those adjectives which express your opinion about the first composer.

| <u>Adjectives</u> | <u>First Composer</u> |
|------------------------|-----------------------|
| <u>Genius</u> | _____ |
| <u>Crack-pot</u> | _____ |
| <u>Brilliant</u> | _____ |
| <u>Dull</u> | _____ |
| <u>Sensitive</u> | _____ |
| <u>Insensitive</u> | _____ |
| <u>Inspired</u> | _____ |
| <u>Weary</u> | _____ |
| <u>Individualistic</u> | _____ |
| <u>Peculiar</u> | _____ |
| <u>Logical</u> | _____ |
| <u>Disorganized</u> | _____ |
| <u>Alert</u> | _____ |
| <u>Apathetic</u> | _____ |
| <u>Profound</u> | _____ |
| <u>Shallow</u> | _____ |
| <u>Planful</u> | _____ |
| <u>Muddleheaded</u> | _____ |
| <u>Democratic</u> | _____ |
| <u>Autocratic</u> | _____ |
| <u>Tolerant</u> | _____ |
| <u>Intolerant</u> | _____ |
| <u>Mild</u> | _____ |
| <u>Hostile</u> | _____ |
| <u>Confident</u> | _____ |
| <u>Fearful</u> | _____ |

-5-

| <u>Adjectives</u> | <u>First Composer</u> |
|-------------------|-----------------------|
|-------------------|-----------------------|

| | |
|-----------------|-------|
| <u>Blustery</u> | _____ |
|-----------------|-------|

| | |
|-----------------|-------|
| <u>Reserved</u> | _____ |
|-----------------|-------|

| | |
|--------------|-------|
| <u>Witty</u> | _____ |
|--------------|-------|

| | |
|--------------|-------|
| <u>Silly</u> | _____ |
|--------------|-------|

Please check the adjectives which you feel apply to the second composition.

| <u>Adjectives</u> | <u>Second Composition</u> |
|-------------------|---------------------------|
| Beautiful | _____ |
| Ugly | _____ |
| Melodious | _____ |
| Noisy | _____ |
| Refined | _____ |
| Vulgar | _____ |
| Graceful | _____ |
| Clumsy | _____ |
| Creative | _____ |
| Impulsive | _____ |
| Coherent | _____ |
| Gibberish | _____ |
| Interesting | _____ |
| Dull | _____ |
| Noble | _____ |
| Coarse | _____ |
| Novel | _____ |
| Senseless | _____ |
| Profound | _____ |
| Superficial | _____ |
| Attractive | _____ |
| Repulsive | _____ |
| Unusual | _____ |
| Impossible | _____ |
| Clever | _____ |
| Simpleminded | _____ |

Adjectives Second CompositionImaginative _____Fantastic _____Stimulating _____Depressing _____

Please check the adjectives which express your opinion about the second composer.

Adjectives Second Composer

Genius _____

Crack-pot _____

Brilliant _____

Dull _____

Sensitive _____

Insensitive _____

Inspired _____

Weary _____

Individualistic _____

Peculiar _____

Logical _____

Disorganized _____

Alert _____

Apathetic _____

Profound _____

Shallow _____

Planful _____

Muddleheaded _____

Democratic _____

Autocratic _____

Tolerant _____

Intolerant _____

Mild _____

Hostile _____

Confident _____

Fearful _____

-2-

Adjectives Second ComposerBlustery _____Reserved _____Witty _____Silly _____

Below is an alphabetical list of composers and a list of compositions. Place the number of the composer in the appropriate blank next to the composition. You have about 10 minutes to complete it.

| <u>Composer</u> | <u>Composition</u> |
|-----------------|---|
| 1. Bach | Moonlight Sonata _____ |
| 2. Bartok | Afternoon of a Faun _____ |
| 3. Beethoven | Incidental Music to Midsummer Night's Dream _____ |
| 4. Berlioz | Bolero _____ |
| 5. Bizet | Aida _____ |
| 6. Chopin | Carmen _____ |
| 7. Debussy | Finlandia _____ |
| 8. Dukas | Rhapsody in Blue _____ |
| 9. Dvorak | Nutcracker Suite _____ |
| 10. Gershwin | La Mer _____ |
| 11. Hindemith | New World Symphony _____ |
| 12. Liszt | Italian Symphony _____ |
| 13. Mendelssohn | Tales of Hoffman _____ |
| 14. Mozart | Romeo and Juliet Overture _____ |
| 15. Offenbach | Till Eulenspiegel _____ |
| 16. Prokofieff | Mathis der Maler _____ |
| 17. Ravel | Roman Carnival Overture _____ |
| 18. Rossini | Sorcerer's Apprentice _____ |
| 19. Schonberg | Eroica Symphony _____ |
| 20. Schubert | Transfigured Night _____ |
| 21. Sibelius | Marche Slave _____ |
| 22. Strauss | Minute Waltz _____ |
| 23. Stravinsky | Rites of Spring _____ |
| 24. Tchaikowsky | Firebird Suite _____ |
| 25. Verdi | Emperor Concerto _____ |
| | Petrouchka _____ |
| | William Tell _____ |
| | Hungarian Rhapsody #2 _____ |
| | Appassionata Sonata _____ |

APPENDIX C

Please fill in the following information. DO NOT SIGN YOUR NAME

Date _____ Sex _____ Date of Birth _____

City and State of Birth _____ Religious denomination _____

Race or national extraction _____.

The following is a musical interest survey. The answers you give will have no bearing whatever on your grade in this course. The information is for research purposes only.

Please fill in the blank.

1. I have studied classical music (instrumental or vocal) for _____ years.
2. I spend about _____ hours a week listening to classical music.
3. I attended _____ concerts of classical music since September 1954.
4. I have taken _____ courses pertaining to classical music while at MSU.
5. Of the following types of music, I get most enjoyment from (1) Classical, (2) Semi-classical, (3) Jazz, (4) None of these. (Please underline which one.)

Title of Composition _____

Composer _____

Please check the adjectives which you feel apply to the composition.

Beautiful _____

Coarse _____

Ugly _____

Novel _____

Melodious _____

Senseless _____

Noisy _____

Profound _____

Refined _____

Superficial _____

Vulgar _____

Attractive _____

Graceful _____

Repulsive _____

Clumsy _____

Unusual _____

Creative _____

Impossible _____

Impulsive _____

Clever _____

Coherent _____

Simpleminded _____

Gibberish _____

Imaginative _____

Interesting _____

Fantastic _____

Dull _____

Stimulating _____

Noble _____

Depressing _____

Please check the adjectives which express your opinion about the composer.

Genius _____

Shallow _____

Crack-pot _____

Planful _____

Brilliant _____

Muddleheaded _____

Dull _____

Democratic _____

Sensitive _____

Autocratic _____

Insensitive _____

Tolerant _____

Inspired _____

Intolerant _____

Weary _____

Mild _____

Individualistic _____

Hostile _____

Peculiar _____

Confident _____

Logical _____

Fearful _____

Disorganized _____

Blustery _____

Alert _____

Reserved _____

Apathetic _____

Witty _____

Profound _____

Silly _____

.

.

Title of Composition

Composer

Please check the adjectives which you feel apply to the composition.

Beautiful _____

Coarse _____

Ugly _____

Novel _____

Melodious _____

Senseless _____

Noisy _____

Profound _____

Refined _____

Superficial _____

Vulgar _____

Attractive _____

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Depressing _____

Please check the adjectives which express your opinion about the composer.

Genius _____

Crack-pot _____

Brilliant _____

Dull _____

Sensitive _____

Insensitive _____

Inspired _____

Weary _____

Individualistic _____

Peculiar _____

Logical _____

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Intolerant _____

Mild _____

Hostile _____

Confident _____

Fearful _____

Blustery _____

Reserved _____

Witty _____

Silly _____

Title of Composition

Composer

Please check the adjectives which you feel apply to the composition.

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Coarse _____

Ugly _____

Novel _____

Melodious _____

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Noisy _____

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Confident _____

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Planful _____

Muddleheaded _____

Democratic _____

Autocratic _____

Tolerant _____

Intolerant _____

Mild _____

Hostile _____

Confident _____

Fearful _____

Blustery _____

Reserved _____

Witty _____

Silly _____

-10-

Below is an alphabetical list of composers and a list of compositions. Place the number of the composer in the appropriate blank next to the composition. You have about 10 minutes to complete it.

| <u>Composer</u> | <u>Composition</u> |
|-----------------|---|
| 1. Bach | Moonlight Sonata _____ |
| 2. Bartok | Afternoon of a Faun _____ |
| 3. Beethoven | Incidental Music to Midsummer Night's Dream _____ |
| 4. Berlioz | Bolero _____ |
| 5. Bizet | Aida _____ |
| 6. Chopin | Carmen _____ |
| 7. Debussy | Finlandia _____ |
| 8. Dukas | Rhapsody in Blue _____ |
| 9. Dvorak | Nutcracker Suite _____ |
| 10. Gershwin | La Mer _____ |
| 11. Hindemith | New World Symphony _____ |
| 12. Liszt | Italian Symphony _____ |
| 13. Mendelssohn | Tales of Hoffman _____ |
| 14. Mozart | Romeo and Juliet Overture _____ |
| 15. Offenbach | Till Eulenspiegel _____ |
| 16. Prokofieff | Mathis der Maler _____ |
| 17. Ravel | Roman Carnival Overture _____ |
| 18. Rossini | Sorcerer's Apprentice _____ |
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| 24. Tchaikowsky | Firebird Suite _____ |
| 25. Verdi | Emperor Concerto _____ |
| | Petrouchka _____ |
| | William Tell _____ |
| | Hungarian Rhapsody #2 _____ |
| | Appassionata Sonata _____ |

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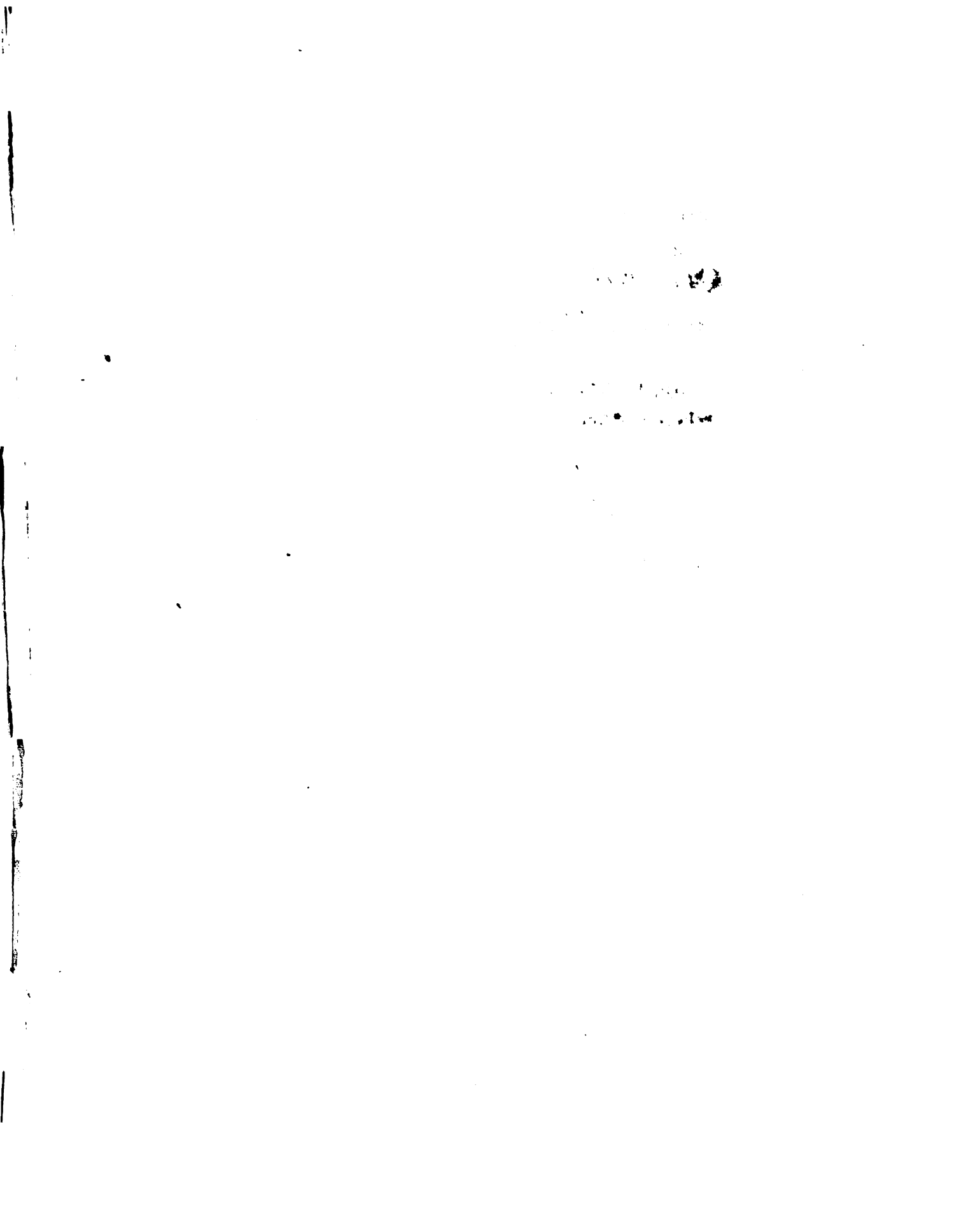
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