A Study of Personality Factors and Music Preference, Involvement, and Use among Youth

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A STUDY OF PERSONALITY FACTORS AND MUSIC PREFERENCE, INVOLVEMENT, AND USE AMONG YOUTH

by

Sheila Ann Smith

A Dissertation Submitted to the Faculty of The Graduate College in partial fulfillment of the requirements for the Degree of Doctor of Education Department of Counselor Education and Counseling Psychology

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A STUDY OF PERSONALITY FACTORS AND MUSIC PREFERENCE, INVOLVEMENT, AND USE AMONG YOUTH

Sheila Ann Smith, Ed.D.
Western Michigan University, 1989

The purpose of this study was to determine if a relationship exists between the music preferences, level of music involvement, and music uses among young people and the personality dimensions of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration as measured by the Structural scales of the California Psychological Inventory.

An investigator-developed instrument was used to assess subjects' music preferences, level of music involvement, and uses of music. One hundred and sixty-three females and 137 males attending various southwestern Michigan colleges volunteered to complete both instruments. Subjects ranged in age from 18 to 20 years.

A one-way MANOVA indicated that both males and females who are less involved in music tend to be more norm-accepting and more introverted than those who are highly involved in music. A one-way MANOVA indicated that females preferring soft rock music tend to be more norm-accepting than those preferring either hard rock or nonrock music. For both males and females, canonical correlation analysis revealed no significant relationship between the personality variables and the music uses variables.
Canonical correlation analysis revealed a significant relationship between the personality variables and the music enjoyment (preference) variables for males, as well as a significant relationship between the personality variables and the combined music variables for both males and females. Multiple regression analysis revealed a significant relationship between the music uses variables and the music involvement variable for females, as well as a significant relationship between the music preference variables and the music involvement variable for both males and females.

Subjects rank-ordered seven music use categories. Results indicated that young people use music primarily as an adjunct to other activities and, secondly, as a way of improving or altering their mood state. Gender-related differences were also observed regarding major uses of music.

Based on the population sampled, it was concluded that there appears to be a relationship between listener personality and music preferences, level of music involvement, and major uses of music among young people; but the relationship is a complex phenomenon.
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Sheila Ann Smith
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CHAPTER I

INTRODUCTION

The human response to music has traditionally been the subject of philosophical thought. More recently, the human response to music has been the subject of psychological investigation. Research on music and human responsiveness has been generated within an interdisciplinary field referred to as music psychology and has developed out of early psychological theories (Langer, 1953; Pratt, 1931; Rigg, 1942) suggesting that listening to music involves affect and cognition as well as auditory sensations (Brim, 1978).

The notion that music can and does affect people is more than mere conjecture, but the mechanisms involved in determining human response have not been clearly identified (Hahn, 1954). The basic problem centers on the question of whether human reaction to music is primarily explainable in terms of characteristic properties of the music itself or in terms of psychological responses in the listener. Earlier writers such as Watson (1942) and Schoen (1940) emphasized characteristics of the stimulus object to account for individual reaction to music. Present day theorists tend to view human response to music from a phenomenological point of view, based on the recognition that personality factors provide a basis for differential attention and perception of events from one person to another. Current psychological theories regarding human response to music have evolved
from the recognition that perception of stimuli and attribution of meaning of selected stimuli differ systematically from one person to another, according to the nature of an individual's personality (DeFleur, 1966). Attempts to identify structural components within the music to account for people's reaction to music have been complicated by psychological meditational processes which influence affective responses to music.

Lifton (1961) noted a transition in theories regarding human response to music, away from emphasis on the stimulus toward an emphasis on psychological processing and meaning attribution by the perceiver. This position is reflected in many contemporary phenomenological, cognitive constructive and cognitive theories (Beck, 1976; A. Ellis, 1962, 1973, 1979; Kegan, 1982; C. R. Rogers, 1951) which emphasize the person's unique meaning construction in response to stimulus patterns. Meyer (1956) noted that meaning is not a property of things and cannot be located in the stimulus alone. Sloboda (1985) noted that a musical event is merely a collection of sounds with various pitches, durations, and other measurable qualities, but that it is the individual who endows these sounds with significance and meaning. Seashore (1967) noted that the correspondence between the physical array of sounds and mental perception is not entirely direct or constant and that there is no one-to-one relationship between music as performed and music as experienced.
Personality and Music

Most of the research on human response to music has been conducted from a "psychoacoustical" paradigm where basic acoustical properties of musical elements were manipulated and affective responses assumed related to these manipulated stimuli were quantified by some type of mood and/or preference response measurement. McMullen (1980) suggested a need for an "interpretive" framework emphasizing the uniqueness of human beings as symbolizing, culture-bearing, historical individuals who act in a frame of past and future and who make sense to themselves. From this framework, music is seen as an internal event, resulting from the interaction of acoustical properties with human perception and experience. McMullen further suggested that this framework does not eliminate a functional connection between an arrangement of physical properties and what is interpreted as meaningful, but that meaning depends upon individual perception and experience. A music response is "created" by human consciousness (McMullen, 1980). Hamm, Nettle, and Byrnside (1975) noted that the meaning and effect of music on the listener is largely determined by the individual.

Research on how personality influences and predisposes the response of the listener to music has generally focused on individual preference for a type of music. Although the bulk of the literature suggests that personality is related to musical preferences, generalizations about the magnitude of the relationship are not possible, given differential assessment of both musical preference and
personality (Abeles, 1980). A number of studies investigated personality factors, which are determinants of musical preferences. Fisher and Fisher (1951) found that personal insecurities, anxieties, and fears influence musical preference. Intellectual introversion has been shown to be an influential personality factor in determining musical preferences (Keston & Pinto, 1955). Bartha (1982) found significant differences between musical category groups and needs for achievement, deference, exhibition, autonomy, surrorance, change, endurance, and heterosexuality. Self-concept was shown to be related to musical preferences (Blackburn, 1983). Other studies identified differences in personality characteristics reflected in musical preferences (Cattell & Anderson, 1953; Hahn, 1954; Mayeske, 1962; Payne, 1967). A representative review of the research on the relationship between musical preference and personality factors will be presented in Chapter II.

Level of Involvement With Music Listening

In addition to studies investigating the relationship between personality and musical preferences, several investigators examined the relationship between personality variables and level of involvement with music listening. Level of music listening involvement may be conceptualized as an index of the degree of importance music holds for an individual in daily living. Ridgeway (1976) found that individuals with manifest conflicts about interpersonal interactions tend to be more highly involved in music listening. Adolescents indicating greater psychological disturbance were found to be more highly
involved with music listening (Blackburn, 1983). The results of these studies suggest that the dimension of the level of involvement with music listening bears a relationship to personality factors and warrants further investigation as an important music listening behavior.

The Meaning of Music

Another important dimension of the human response to music is related to the meaning of music. The bulk of the literature addressing the issue of the meaning of music is presented in line with basic philosophical aesthetic positions regarding the affective response to music. A description of the various aesthetic positions will be presented in Chapter II. The various aesthetic positions are primarily concerned with nonlyrical "serious" or art music and have limited applicability to contemporary popular music enjoyed by the majority of young people. Although the various aesthetic positions regarding the meaning of music may lack sufficient validity when applied to popular music, the major theoretical issue regarding the source of variation in attributed meaning may have some relevance in attempting to clarify the meaning of popular music. Variables contributing to musical meaning can be classed under two broad categories: (a) those related to the structural characteristics of the musical stimulus and (b) those related to the listener. In terms of the second category, basic personality style, as well as state of motivation for interacting with music, have received recognition as potential variables affecting musical meaning (Radocy & Boyle, 1979).
Several studies (Greer, Dorrow, & Hanser, 1973; Greer, Dorrow, & Randall, 1974; Radocy & Boyle, 1979) have shown an increasing preference for rock music with advancing grade level, but little is known about why young people tend to prefer this musical style over others. Although music listening is a primary activity for young people (Coleman, 1961; Frith, 1981; Larson & Kubey, 1983), little is currently known about how adolescents use music and what functions music listening serves for them.

Insights into the role of music for individuals come from both philosophical and psychological theories regarding the function of music. Merriam (1964) recognized 10 major personal and social musical functions:

1. emotions, 2. aesthetic enjoyment, 3. entertainment, 4. communication, 5. symbolic representation, 6. physical response, 7. enforcing conformity to social norms, 8. validation of social institutions and religious trials, 9. contribution to the continuity and stability of culture, and 10. contributions to the integrity of society. (p. 218)

From a psychoanalytic perspective, Wang (1968) suggested that music can be arbitrarily classified into three groups: (a) id-dominated, (b) ego-dominated, and (c) superego-dominated. Id-dominated music serves the purpose of stimulating fantasies along the line of the id-drives, while ego-dominated music serves the purpose of reinforcing a sense of reality and strengthening ego-defenses. Superego-dominated music is characterized by music which strengthens moral commands and prohibitions. Wang further suggested that people can be categorized as predominantly id-directed, ego-directed, or superego-directed and that music can be used to facilitate
personality integration, based on the appropriate match of personality and music. Kehtonen (1985) also addressed the meaning and role of music from a psychodynamic reference frame and suggested that music can protect the ego from painful situations as well as enable unconscious needs and feelings to become conscious.

Noy (1966, 1967a, 1967b, 1967c, 1967d) presented a series of articles in the Journal of Music Therapy, which reviewed variations in psychoanalytic theory during the past 80 years regarding the meaning of music. According to psychoanalytic theory, music serves as a symbolic expression of unconscious contents. The psychoanalytic perspective holds that the emotional response to music depends upon the unconscious significance of the music and its effect on instinctual forces, as well as the transformation of music through ego functions. Noy noted that the psychoanalytic approach lacks a comprehensive theory to account for what music means to the "normal" person.

While the meaning of music has been the subject of considerable theoretical debate, little has been done in the way of empirical inquiry to determine how individuals actually use music. Many questions regarding the psychological role of music remain unanswered.

Preference for Types of Music

Some of the confusion regarding the meaning of music, as well as about the determinants of musical preference, results from the assumption that serious music and popular music can be reasonably compared. Serious music is characterized by the formally and artistically more
sophisticated and enduring types of music, as distinguished from popular, folk, and jazz. Serious music includes: symphonies, operas, sonatas, song cycles, and lieder. Serious music is usually deemed equivalent to what is inclusively referred to as "classical" music. Strictly, speaking, classical music refers to a musical form written and performed during the later half of the 18th and early 19th centuries. From a broader perspective, classical music has come to be viewed by the general public as a form of serious, sophisticated, and complex music, irrespective of specific music time periods. Popular music may be conceptualized as a readily available form of music geared toward mass consumption at a given time. It is characterized by relatively simple and repetitive melodies usually with lyrical content. Popular music is seen as an expression of contemporary popular culture and is a less enduring musical form than classical music.

The assumption that serious music and popular music can and should be liked or used in the same way has undermined a clearer understanding of the psychological role of music for the listener (Reimer, 1970). Another source of confusion regarding the psychological role of popular music results from the assumption that the meaning of popular music can be reduced to the analysis of lyrical content. While the individual's use of popular music most probably reflects the meanings they attribute to it, the meaning of music for the individual cannot be deduced from a one-dimensional analysis of its structural elements. In addition, the meaning of music reflected in its psychological uses cannot be studied in isolation from the
personality structure of the individual; as Riesman (1954) stated with the reference to "the plasticity of music for its variegated audiences" (p. 193), thereby suggesting that popular culture materials, such as music, are used by audiences in radically different ways and for radically different purposes. Reisman noted that it is impossible to understand the uses of music in a psychological sense without an understanding of the total character structure of a person.

Another reason for the lack of knowledge about preferences for popular music and its psychological role stems from the assumption that the popular music audience represents a homogeneous mass culture characterized by passive indiscrimination. Several authors (Denisoff, 1976, Levine & Harig, 1975; Vulliamy, 1975) have challenged the assumption of the massification of popular music and suggested that consumers of popular music have discriminating, specific, and individual tastes in music. Vulliamy (1975) noted that critics of mass culture have assumed a "stimulus-response" pattern for the popular music audience, while "serious" music is assumed to have an "interpretive" audience.

Popular Music and Meaning

Most studies on the meaning of popular music for young people have focused on the lyrical content of popular songs as a source of ideological or psychological orientation (Fox & Williams, 1974, Hayakawa, 1957; Horton, 1956; Marks, 1972; Mashkiv & Volgy, 1975). While much attention has been given to the symbolic content of
popular music, what has been neglected is how young people respond subjectively to music and how music engages them psychologically (Larson & Kubey, 1983). Most of the research interest on the role of popular music has focused on what music does to people, rather than on what people do with music as a reflection of their personalities. Although the meaning of music and its psychological uses are not determined entirely by subjective variables and cannot be separated from the structural aspects of musical stimulus, this study is primarily concerned with determining what uses are made of music by young people who have different underlying personality predispositions as a determinant of meaning. Current psychological theories suggest that part of the total variation between individuals' response to music can be accounted for by personality determinants which mediate perception and attributed meaning of musical stimuli.

Motivation for Listening to Music

As mentioned previously, most of the research on the influence of personality in relationship to listener response has focused on preferences for a type of music. Some studies (Blackburn, 1983; Ridgeway, 1976) have noted a relationship between personality variables and degree of involvement with music listening; and while the area of motivation for listening and/or uses of music has received some research interest, little has been done in the way of investigating this dimension in relation to personality pattern. In attempting to understand the psychodynamics of musical preference, it would seem important to understand the meaning or uses of a preferred
musical style as well as the level of involvement with music listening. In addition, it would seem important to study the combined music variables of preference, involvement, and uses in relation to personality to determine if personality factors differentiate to a significant degree between young people with different musical style preferences, involvements, and uses.

**Developmental Aspects of Music Listening**

This study addresses the problem of the role that music plays in the lives of young people. As noted earlier, music listening is a major activity among adolescents and a trend toward preference for rock music has been noted with increasing grade level. Rouner (1986) surveyed the music listening behaviors of 128 college students at Cleveland State University and reported that subjects spent an average of 3 hours a day listening to music on the radio. The average time spent listening to tapes and records was 2.17 hours a day. Although music listening is a major activity among young people, Greeson (1986) reported that less than half of the 25 textbooks surveyed on adolescent psychology discussed the social effects of popular music or other media on adolescents. While the social effects of popular music have been the subject of considerable debate and research interest, what has been neglected is an effort to consider rock music in relation to the dominate psychological agenda of the specific group that uses it with regularity in daily living.

As mentioned previously, several studies involving an analysis of lyrical content have been undertaken to identify themes salient to
adolescent developmental issues and concerns. Marks (1972) studied the relationship between preferred songs and three different stages of adolescent development and reported a weak trend among adolescents to prefer songs that related to their particular developmental stage. Smothers (1961) concluded that popular music functions for adolescents through portraying issues to them which are related to their developmental interests, hopes, and apprehensions. Popular music is used by adolescents as an aid in the process of self-definition.

Toohey (1970) suggested that rock music could function to interpret sexuality for the youthful listener, particularly in the absence of any formal education in sexuality and social responsibility. Schafer (1972) asserted that rock music provides an outlet for frustration and a medium for expressing ideas about society and the self. According to Schafer, rock music is used by adolescents as a tool for self-recognition and self-expression because of its ability to reflect lyrically and to factualize individual mood and emotion. Burke and Grinder (1966) studied the lyrical preferences of seventh, eighth, and ninth graders and reported a general trend among adolescents to prefer lyrical themes that provide solace, a guide for expressing feelings, and a means for articulating fantasies.

Horton (1956) analyzed the lyrical content of popular music during the mid-1950s and classified songs according to different aspects of the adolescent dating cycle. Horton found that at least 90% of the songs analyzed had to do with some aspect of love. Hayakawa (1957) analyzed the lyrical content of popular love songs of the 1950s and concluded that popular song lyrics promote an
unrealistic idealization of life making the attainment of maturity for adolescents more difficult than it need be. Hey (1974) also classified lyrics from popular songs in the 1950s and concluded that the majority of songs could be classified under the general categories of insecurity and generational conflict. While Carey (1969) and Cole (1971) reported an increase in the frequency of social protest themes and controversial issues in the lyrical content of popular songs during the 1960s, major changes in the content of popular music lyrics during the 1970s were noted by Mashkiv and Volgy (1975), as well as Fox and Williams (1974). The lyrical content of popular songs during the 1970s reflected fewer radical or controversial social themes and greater frequency of lyrical themes stressing adolescent problems and experiences. One of the major reasons that rock and popular music tends to stress adolescent concerns is that, unlike the music of past generations, rock music is primarily written by the performers themselves, many of whom are adolescents or not far removed from their own adolescent experience.

Although an analysis of the lyrical content of rock and popular music may reveal some of its attraction for young people, critics of the content analysis approach have questioned the view that there is a significant relationship between the message content of popular music and subjective response. Robinson and Hirsch (1969) found that only 10% to 30% of the 430 adolescents surveyed were able to provide a correct interpretation of the meaning of selected current hit songs. The authors defined a "correct interpretation" of the meaning of a song as one which corresponded with their understanding/analysis
of lyrical content. The authors reported that liking a song and understanding its lyrical content are two distinct phenomena. Over 70% of the students sampled indicated they were attracted more by the "sound" of a song than by its "meaning" in terms of lyrical content. In a related study, Denisoff and Levine (1971) reported that only 14% to 18% of sampled college students were able to interpret correctly the meaning of two popular protest songs according to the authors' understanding of lyrical content. Lull (1985) noted that music is used by adolescents to create meaning and excitement, but that the basic characteristic for young listeners appears to be the overall sound of the music rather than lyrical content. Roe (1985) reported that motivations for listening among adolescents are more physical and emotional than cerebral in terms of cognitive interpretation of content. Denisoff and Levine (1971) have suggested that an understanding of the appeal of popular music among young people cannot be gained through a monolithic analysis of lyrical content. Young peoples' attraction to popular music is also related to the sound of the music as well as to extramusical factors such as performer appearance and stage behavior.

The escapist function of rock music listening was noted by Schafer (1972), who suggested that adolescents may listen to rock music to gain a temporary recess or suspension from individual turmoil. Studies by Gantz, Gartenberg, Peterson, and Schiller (1978) and Blackburn (1983) suggested that adolescents listen to popular music because it frequently does something to them. The authors noted that most of the adolescents surveyed acknowledged frequent
affective shifts while listening to popular music. While Gantz et al. (1978) reported that the majority of subjects used popular music to relieve boredom or pass the time, also cited as frequently occurring were motivations related to tension reduction, escape from problems, and mood modification. The authors developed five major content categories in response to open-ended questions regarding the effects of music listening. Only the categories of "relaxes-calms" and "makes one feel happy, good, or excited" received substantial endorsement. It is important to note that the researchers' focus is on what music does to or for young people rather than what young people do with music as a reflection of their personality. The authors noted gender differences in terms of frequency of gratifications obtained by music listening and concluded that popular music listening appears to be more functional for adolescent girls than for boys. Blackburn (1983) developed eight major content categories based on adolescents' responses to open-ended questions regarding the importance and effects of rock music listening. The majority of subjects commented about the use of music as an aid to relaxation, although mood improvement and stimulation were also mentioned by a significant proportion of subjects. A relationship was noted between adolescents' level of involvement with music listening and the psychological effects of music listening, with a higher percentage of subjects rated as highly involved in music listening, indicating music effects related to relaxation and mood improvement.

Rock music's function for young people has been viewed as a case of what Freud called a "compromise formation," reflecting the
ambivalent aspirations of youth regarding advancement towards adulthood (Weinstein, 1983). From this perspective, rock music is seen as a response to and an enhancement of adolescents' awareness of the coexisting dependency and strive for independence, characteristic of the transition from childhood dependency to young adult responsibility. While thematic and stylistic changes in rock music reflect the differential social agenda encountered by youth in successive historical periods, its use by young people is seen as a psychological response to the tension between dependency and responsibility, characteristic of adolescent life stemming from social conditions in modern societies.

Weinstein (1983) further suggested that rock music functions as a "compromise formation" differentially for males and females and that different rock music genres make specific appeals to males and females by exemplifying gender-related ambivalence about assuming an adult position in society. Heavy metal music, with its extreme lyrical aggression and ear-shattering amplification, is seen as the rock genre that exemplifies the male youth, who must forfeit the aggressive qualities characteristic of this rock genre in order to become a member of society. Thus, "heavy metal" music serves to sublimate aggressive qualities for males by allowing them to both behave as an adult while expressing vicarious discontent and regression without social repercussions.

According to Weinstein (1983), soft rock music, characterized by lyrical themes concerned with romance, is the rock genre that exemplifies the female youth. The romantic lyrical themes characteristic
of "soft rock" music, sung mostly by nonthreatening male artists, are designed to ease tensions about sexual activity and fears about sexual exploitation for the female youth. According to Weinstein, female fears about sexual objectification and exploitation are reduced by musical content which stresses the primacy of romantic exchange between the sexes. The recent upsurge of female hard rock performers stressing the themes of independence, sexual expression, and love of pleasure may be seen as a reflection of the changing female role in society.

Smothers (1961) noted differential preferences and uses of popular music among adolescents based on gender and suggested that the basic function of popular music is to assure the female audience members that they are attractive and desirable to males. Accordingly, adolescent males who overemphasize their masculinity and sexual aggressiveness reject this popular music genre (soft rock) and its implied feminine expectations that men will be gentle and keep their aggressiveness under control.

In a review of the content and influence of popular music, White (1985) noted that popular music listening serves as a means of diversion from the stresses of daily living. While the "diversionary" function of adolescent music listening has received some research support (Blackburn, 1983; Gantz et al., 1978), adolescent music uses related to tension reduction and/or mood alteration were noted by these same authors.
Purpose of the Study

The body of literature on musical preferences, involvements, and uses suggests that these listening behaviors may be indicative of an individual's present inner state and basic personality predisposition. This study is intended to gain a greater understanding of personality and the concomitant role of music for young people. Specifically, this study seeks to determine if a relationship exists between the musical preferences, involvements, and music uses of young people and the personality dimensions of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration as measured by the Structural scales of the California Psychological Inventory (Gough, 1987).

Hypotheses

The hypothesized relationship between selected personality dimensions and musical preferences, involvements, and uses is operationalized below as a series of null hypotheses:

1. There is no significant difference between the personality centroids of those with high and low music listening involvement. A centroid is the multivariate equivalent of the center of gravity. In statistics it is used to define a point in multidimensional space, whose coordinates are the mean scores on each of the variables under study.

2. There is no significant multiple correlation between the set of personality variables and the involvement variable.
3. There are no significant differences among the personality centroids of those with different music style preferences.

4. There are no significant differences among the personality centroids of those who use music for different major purposes.

5. There is no significant canonical correlation between the set of personality variables and the set of music enjoyment variables.

6. There is no significant canonical correlation between the set of personality variables and the set of music uses variables.

7. There is no significant canonical correlation between the set of personality variables and the combined music variables.

8. There is no significant canonical correlation between the set of music enjoyment (preference) variables and the set of music uses variables.

9. There is no significant multiple correlation between the music uses variables and music involvement.

10. There is no significant multiple correlation between the music enjoyment (preference) variables and music involvement.

Significance of the Study

This study is concerned primarily with the relationship between young peoples' music listening behaviors and personality and state of personality integration. It has been noted that young people spend a considerable amount of time listening to rock and popular music, but little is currently known about the psychological role of music listening for young people. While the relationship between personality and music preferences has received considerable research
interest, little has been done in the areas of involvement and music uses. Although the social functions and effects of popular music listening have been the subject of considerable research inquiry, and much attention has been given to the symbolic content of rock and popular music, little research attention has been given to young people's subjective use of music as a function of personality.

This study used the vector scores of the Structural scales of the California Psychological Inventory (CPI) as a measure of basic personality predisposition and mental health to determine if these variables can differentiate to a significant degree between young people with different musical preferences, involvements, and major music uses.

The relationship between music listening behaviors and personality has implications for use by counselors, psychologists, and music therapists working with young people. White (1985) noted that music listening behaviors may be seen as a reflection of a client's current emotional makeup and may indicate a current state on which a counselor might be able to capitalize. Additionally, knowledge of a young person's music interests may be helpful in establishing an initial avenue of communication and rapport in a therapeutic relationship.

Definitions

1. Hard rock: For the purpose of this study, hard rock was operationalized in terms of subjects' rated preferences under "hard rock" and "heavy metal" categories on the Music Preference and
Interest Questionnaire.

2. Soft rock: For the purpose of this study, soft rock was operationalized in terms of subjects' rated preferences for "soft rock" on the Music Preference and Interest Questionnaire.

3. Nonrock: For the purpose of this study, nonrock was operationalized in terms of subjects' rated preferences for all other styles of music (classical, jazz, country, contemporary Christian/gospel, folk, soul/rhythm and blues, and other) on the Music Preference and Interest Questionnaire.

4. High involvement: For the purpose of this study, a group of subjects scoring above the median on the Music Involvement scale of the Music Preference and Interest Questionnaire.

5. Low involvement: For the purpose of this study, a group of subjects scoring at or below the median on the Music Involvement scale of the Music Preference and Interest Questionnaire.

6. Music uses: For the purpose of this study, music uses was operationalized both in terms of subjects' indicated music uses and subjects' primary ranked category of music use on the Music Use scale of the Music Preference and Interest Questionnaire.

Limitations of the Study

1. The study sample represents college students ranging in age from 18 to 20 years, who volunteered to participate in the study. The sample was not random and was not representative of all youth in the United States.
2. Subjects were volunteers and results cannot necessarily be
generalized to nonvolunteers.

3. The independent variables selected for this study did not
include all of the influences that might have been selected (e.g.,
the media, musical ability, racial membership, musical background,
social class).

4. The musical categories presented are not exhaustive and must
be viewed with temporal restriction as musical categories continue to
evolve and the descriptive titles of musical categories may change
over time.

5. The study data is self-report information and customary
cautions must be used when considering the findings.

6. The results of this study cannot necessarily be generalized
to all youth in the United States as regional differences in music
preference might be expected to influence the relationship between
personality and music preferences.

Methodological Assumptions of the Study

This study assumed that:

1. Young people can identify and select a general musical pref-
    erence.

2. The CPI Structural scales do measure certain personality
dimensions.

3. Individuals can and will report honestly on themselves.

4. Personality factors are related to music listening behaviors.
Organization of the Study

This chapter has introduced the problem of the psychological role of music, particularly in relation to young people. Research hypotheses have been formulated and important terms defined. Chapter II provides a review of the literature related to the areas of musical preference, music listening involvement, music uses, and physiological and mood responses to music. Chapter III describes the subjects, instrumentation, and data collection procedures, as well as the null hypotheses tested and a description of the analysis of the data for the study. Chapter IV contains an analysis of findings. Chapter V provides the summarized conclusions of the study.
This literature review will focus on studies generated within the field of music psychology, regarding the human response to music. More specifically, studies in the areas of musical preferences and affective responses to music are reviewed, in addition to studies related to degree of music listening involvement and uses of music.

Musical Preferences and Personality

LeBlanc (1982) suggested that personality characteristics can influence an individual to be more or less receptive to different musical styles as well as to the influence of music preference variables associated with the cultural environment. Although the bulk of the literature suggested that personality is related to musical preferences, conclusive statements about the strength of the relationship are not possible, given differential assessment of both musical preference and personality characteristics.

An early contribution in the hypothesized relationship between personality and musical preferences was made by Cattell and Anderson (1953) in the development of the Institute for Personality and Ability Testing Musical Preference Test of Personality. The instrument was developed to predict personality traits, based on the assumption that unconscious needs gain satisfaction through music and
that personality types should prefer a specific type of music. Subjects made preferential choices based on one hundred 30-second diverse musical excerpts, previously factorized (Cattell & Saunders, 1954) to produce 11 factors or choice patterns. Cattell and Anderson correlated scores on the 16 Personality Factor Questionnaire with the Music Preference Test of Personality for both normal and psychotic subjects. Although none of the correlations was large enough to demonstrate a one-to-one relationship, the authors reported moderate correlations between the 11 music factors and scores on the 16 Personality Factor Questionnaire with normal subjects. Compared to normal subjects, the authors noted psychotic subjects tended to prefer relatively slow, simple, and sad music; sweet melodies; and subordinate accompaniment. The exception to this preference pattern was the manic group, which preferred fast, exhilarating, stimulating music with textural complication, rhythmic variation, and less obvious melodic outlines.

Daniels (1934) measured the personality characteristics of 155 male college freshmen utilizing the Bernreuter Personality Inventory and related these personality traits to preference choices for popular or classical music. Daniels reported little relationship between personality traits and musical preference with a slight tendency for those preferring popular music to be less neurotic, less self-sufficient, more extroverted, and more dominant than those favoring classical music.

Deri (1947) investigated the relationship between the personality traits of musicians and preference for either romantic or
classical music utilizing the Szondi List of Personality Traits. Deri concluded that the musicians preferring classical music were less emotional and more intellectual, with a more rigid and detached ego, while those preferring romantic music showed greater interest in the outside world, less emotional restraint, and more fluid ego organization.

In contrast to music preference studies dealing with group measurement, Hahn (1954) studied the relationship between an individual's personality variables and that individual's musical preferences. Hahn's criticism of previous research relating personality and musical preferences focused on a lack of comprehensive personality data as well as the utilization of a single or spot measurement of musical preference. Hahn obtained detailed personality data on 12 subjects at a university counseling center via projective personality instruments and five measures of musical preference for each subject including: (a) daily log of musical listening, (b) a musical preference inventory consisting of 120 musical excerpts, (c) a 48-item musical excerpt test, (d) a musical background questionnaire, and (e) the "desert island" approach in which subjects were asked to rank order five recordings they would wish to take with them to a desert island. Hahn concluded that musical preferences are almost invariably directly related to personality. More specifically, Hahn concluded that music functions as an escape more often for withdrawn individuals than for outgoing individuals and that musical preferences are more stable, consistent, and well-defined among individuals with more well-integrated personalities than among those with
unintegrated personalities. Hahn further concluded that the need for sensual gratification is positively related to preferences for music characterized by much color and excitement and that individuals with weak libidinal drives prefer sedative music, which is usually repeti­tive, simple, and conventional in form. According to Hahn, the relationship between low libidinal drives and preferences for seda­tive music is particularly true among individuals who characteristi­cally repress and sublimate aggressive and sexual urges.

Fisher and Fisher (1951) investigated the effects of personal insecurity on preferences for unfamiliar music. Personal insecurity was measured by an analysis of subject descriptions to pictures depicting "loss of control" themes and an evaluation of a projective human figure drawing. The musical preferences of 97 subjects ranging in age from 12 to 18 years were measured by asking subjects to indicate a preference to eight 45-second, paired musical excerpts, each pair consisting of an exciting composition and a subdued compo­sition. The investigators used unfamiliar musical stimuli, based on the assumption that individual differences in personality would have greater opportunity to influence reactions by restricting opportunity for referring judgment to conventional frames of reference associated with social role. The investigators found that a larger percentage of subjects responding to unfamiliar dramatic music with either unusual favorableness or unusual unfavorableness showed more signs of marked personal insecurity than those expressing only a moderate number of preferences for exciting compositions. The authors con­cluded that musical preferences are not some abstracted aesthetic
response, but are reactions affected by personal needs and differences similar to other personal reactions. Fisher and Fisher noted that musical preference may be a personal expression, resulting from an attempt to deny and compensate for certain fears, anxieties, and insecurities.

Keston and Pinto (1955) related the musical preferences of 202 college students and eight variables: (a) introversion–extroversion, (b) masculinity–femininity, (c) age, (d) educational level, (e) sex, (f) formal musical training, (g) ability to recognize musical compositions, and (h) intelligence. Musical preference categories included: (a) serious classical, (b) serious popular classical, (c) light concert selections, and (d) popular music. The personality variables of introversion–extroversion and masculinity–femininity were assessed with the Heston Personal Adjustment Inventory. The investigators reported that intellectual introversion, music recognition, and musical training were the most important factors influencing music preference decisions; and intelligence, sex, age, and masculinity–femininity were negligible factors in determining musical preferences.

Payne (1967) tested the hypothesis that people with stable temperaments, as measured by the Maudsley Personality Inventory, would tend to prefer "classical" music (Bach, Vivaldi), and those with neurotic temperaments would more likely prefer music classified as "romantic" (Chopin, Liszt, Tchaikovsky). The classical/romantic dichotomy was based primarily on a distinction between form and feeling as opposed to music of a specific period. Romantic music was
conceptualized as music in which the emotional element was primary, as opposed to classical music in which form was considered more central. Payne's sample was restricted to adult and college-age individuals, relatively homogeneous with regard to aural ability and musical experience/interest, and considered discriminative, but not professional music listeners. Payne reported a positive relationship between the stable/neurotic dimension of personality and the classical/romantic dimension in music.

Mayeske (1962) investigated the relationship of music preference to personality structure utilizing the 16 Personality Factor Inventory and the Objective Analytic Test Battery, administered to 133 convicts at a penal institution and 67 college students enrolled in psychology courses at the University of Illinois. An investigator-developed Music Preference Test, consisting of 84 instrumental excerpts, served as a measure of musical preference. Results were factor-analyzed to extract factors involved with preference. The author found no personality measure showed a high enough correlation with music preference to warrant clear-cut associations, but reported that the findings suggest that personality is involved in music preference.

Butler (1968) examined the confluence of personality factors and receptivity to electronic music. Personality factors were measured employing the 16 Personality Factor Inventory and receptivity to electronic music was measured by an investigator-developed instrument employing a 7-point rating scale. The author reported significant positive correlations between receptivity to electronic music and the
Unconventionality and the Radicalism subscales of the 16 Personality Factor Inventory.

Inglefield (1968) investigated the relationship of personality factors and conformity behavior with musical preferences based on the assumption that conformity behavior is an important factor in the formulation and fluctuation of adolescent musical preferences. A relatively small sample of ninth-grade subjects were selected on the basis of extreme scores on personality tests of inner-other directedness, independence-dependence, and need for social approval, as measured by the Kassarjian Inner-Other Directedness Scale, the Barron Independence Scale, and the Crown-Marlowe Social Desirability Scale. Music preferences were measured by an investigator-developed inventory consisting of a variety of classical, folk, jazz, and rock-and-roll selections. Subjects assigned to the experimental conditions were readministered the music preference inventory after exposure to different social pressure situations similar to the Asch (1956) conformity experiments. Inglefield found that subjects tended to conform to acknowledged peer leaders by altering expressed musical preferences, regardless of personality type, although dependent subjects tended to conform more than subjects identified as independent.

Brim (1978) studied the relationship of dogmatism and repression-sensitization to musical preference, employing Rokeach's Dogmatism Scale, the Repression-Sensitization Scale, and the Crown-Marlowe Social Desirability Scale. Results indicated that dogmatism showed a curvilinear relationship with decreased individual variation in musical preferences, indicating more variance in preference as people are
more open-minded, while repression was positively related to increased preferences.

Bartha (1982) examined the relationship between the self-reported musical preferences of 150 graduate students at Ohio State University and personality variables measured by the Edwards Personal Preference Schedule. He reported significant differences between music category groups on 8 of the EPPS Scales (Achievement, Deference, Exhibition, Autonomy, Surrorance, Change, Endurance, and Heterosexuality).

Blackburn (1983) investigated the relationship of self-concept, as measured by five subscales of the Tennessee Self-Concept Scale (TSCS), to preference choices of 97 adolescents for various styles of music. He reported that males indicating a preference for hard rock music scored significantly higher on the Self-Satisfaction subscale of the TSCS than those preferring pop rock, while females favoring pop rock had significantly higher scores on the Total Positive Self-Concept and Self-Satisfaction subscales than females preferring hard rock. While the scores on the Tennessee Self-Concept Scale for the nonrock group were not statistically compared because of the small number of subjects in this category, the investigator noted that subjects indicating a preference for classical music scored favorably on the TSCS subscales compared to other music preference groups.

Musical Preferences and Other Listener Attributes

Studies involving the determinants of musical preferences have included a variety of other listener attributes. A review of studies
investigating the relationship between musical preferences and gender, age, socioeconomic status, race, musical training, peer and media influences, and other factors will be presented in this section. It is important to note that the current study is not concerned with such variables as racial membership, social class factors, musical ability/training, peer influences, or media effects, but it is limited to an examination of personality variables in conjunction with the variable of gender in relation to music listening behaviors.

**Gender**

The effects of gender have often been included in studies of music preference. Results from research examining the influence of gender on music preference are inconclusive. Some studies (Appleton, 1970; V. R. Rogers, 1956, Schuessler, 1948; Skipper, 1975) found significant differences between males and females in musical preferences for variety of musical styles. Other studies (Keston & Pinto, 1955; Payne, 1967; Sopchak, 1955) reported negligible difference by sex. LeBlanc (1982) suggested that gender may influence music preferences during adolescence due to differential rates of male/female maturation, predisposing some listeners to be particularly responsive toward attractive performers of the opposite sex. Abeles (1980) noted that gender may lose its predictive power in music preference decisions as the socialization process for males and females becomes less differentiated.
The factor of age in relation to music preference has also produced varying results. Baumann (1960) reported an increase in preference for classical music with increasing age from 12 years through 20 years, although all age groups preferred popular selections. V. R. Rogers (1956) found an increase in preference for popular music and a decrease in preference for classical music with increasing age from 9 through 18 years. Greer et al. (1974) studied the musical preferences of children in nursery school and Grades 1 through 6 for rock, nonrock music, and white noise, employing a behavioral assessment. The authors reported an increase in preference for rock music over nonrock music with a rise in grade level. Nursery and first grade listeners were found to equally prefer rock and nonrock selections, while second through sixth grade children preferred rock selections. The authors concluded that the transition from third to fourth grades represented a pivotal period in terms of students' proclivities for rock music and other musical styles. In contrast, LeBlanc (1979) found that "easylistening pop" was preferred over rock music among fifth graders. LeBlanc recommended further study due to the fact that only one excerpt of each generic type of music was employed in his study.

Socioeconomic Status

The effect of social status factors has also been examined in studies of music preference. Meadows (1970) studied the influence of
socioeconomic status on the music preferences of 982 junior high, senior high, and college-age listeners. He reported that socioeconomic status was influential in determining musical preferences, with middle and upper classes preferring classical, light classical, country and western, folk, and show music, while upper-middle and lower-lower socioeconomic classes preferred rock-and-roll music. Schuessler (1948) found that individuals in the higher socioeconomic status, as measured by occupational type, preferred classical and light classical music to a greater extent than those in lower socioeconomic groups. Schuessler's study involved the measurement of over 1,200 subjects' attitudes toward eight categories of music from classical to hillbilly. Schuessler attributed observed socioeconomic status differences in music preference to the interaction of socioeconomic background and other variables, such as differential exposure to certain musical styles, as well as the probability of receiving musical training. Baumann (1960) studied the relationship of socioeconomic status to the musical preferences of adolescents and found that subjects from high socioeconomic groups prefer classical music more than those from lower socioeconomic groups. Skipper (1975) reported socioeconomic status effects on music preference for American students with students from upper status preferring classical and folk music and students from lower status backgrounds preferring hard rock and rhythm and blues music styles. In comparison with American students, little socioeconomic status effect was observed among Canadian students. Williams (1972) found no socioeconomic effects on music preference ratings. Abeles (1980) noted that
differential measurement of musical preferences and socioeconomic status make it difficult to integrate results on the relationship between these two variables.

**Race**

Racial membership has been shown to influence music preferences. Robinson and Hirsch (1969) surveyed 430 high school students in Detroit and reported a .87 correlation between Blacks and preference for rhythm and blues selections. Musical preferences among white students showed more diversity. The investigators noted that the song style preferences of Blacks and Whites remains almost entirely segregated. Skipper (1975) reported a significant difference between the musical preferences of black and white college freshmen with Blacks indicating a greater liking for music in general and greater preference for favorite musical artists of their own race. Denisoff and Levine (1971) reported that race was the strongest predictor of musical preference among a number of "taste culture determinants," including race, age, father's occupation, and education. Nall (1978) studied the music preferences of high school students in relation to race and reported that Blacks overwhelmingly prefer soul music, whereas the preferences of Whites are confined almost exclusively to pop and rock. Nall concluded there are fundamental differences in the musical preferences of Blacks and Whites and noted the presence of two youth cultures— one black and one white— neither demonstrating much internal differentiation with regard to musical preference patterns. Appleton (1970) also reported considerable homogeneity of
musical preferences within racial groups, although the results suggest some overlap in popular music preference by race. Appleton found that Blacks preferred soul, jazz, and gospel music, while white students indicated a preference for rock and soul music.

**Training**

The effect of musical training and aptitude on music preferences has been studied extensively. Rubin-Rabson (1940) found musical training was positively correlated with preference for modern classical music, although the relationship was not maintained for music of earlier stylistic periods. Erneston (1961) reported significant differences in musical taste between subjects having some type of music experience. Birch (1963) reported college students with at least 3 years of high school music experience owned more records of "serious" music than other students. Kelly (1961) examined the influence of musical training on the musical preferences of a select group of 210 musically experienced adolescents and reported "higher" musical preferences among this group than the general public, primarily attributable to musical training. Meadows (1970) found that subjects with "high quality" music experiences showed greater variety in musical preferences than those with "low quality" musical experience. Although the results of these studies suggest a positive relationship between musical training and musical preferences, differential assessment of musical experience and musical preferences precludes conclusive statements.
Other Factors

Several studies have investigated the relationship between intelligence and musical preferences. Research by Keston and Pinto (1955) and Rubin-Rabson (1940) indicated no relationship between intelligence and musical preference. Intellectual ability may have some secondary effects of musical preference, but only in interaction with other more predictive variables (Abeles, 1980).

Several studies have examined the relationship between political orientation and musical preferences. Fox and Williams (1974) studied the musical preferences, musical involvements, and political orientations of 730 college students and concluded that musical style preference varies according to listener political orientation. Subjects rated as politically conservative indicated a greater preference for current popular hits and easylistening music, while politically liberal students preferred folk, blues, and protest music to a greater degree than conservatives. Rock music was found to be very appealing to students of all political orientations. The authors concluded that musical styles are associated with ideological orientations, but the mechanisms by which preferred music reflects or affects the listener's political orientation is not clear. Mashkiv and Volgy (1975) studied the relationship between sociopolitical attitudes and the music preferences of over 200 college-age students. The investigators reported folk music listeners were more politically alienated than rock or country-western listeners, and rock and folk listeners were more inclined to espouse a postbourgeois ideology than
country-western listeners.

Variations between individuals in musical preferences are also associated with variations of environment providing differential influences on musical preference. The opinions of significant others, as well as media-related factors, serve to influence musical preference choices. LeBlanc (1982) noted that these influences, as well as other determining factors, vary in intensity and direction at different stages of the listener's life.

The influence of teacher approval on musical preferences has been examined by Greer et al. (1973). The authors reported a change from a pretest preference for rock music to no posttest difference between rock and symphonic music among 29 second and third graders. In a similar study, Greer et al. (1974) reported 24 nursery school children changed to a posttest preference for symphonic music over rock music under teacher approval conditions. Dorrow (1977) reported that music presented by the teacher in a high-approval context influences listener preference behavior. Greer, Dorrow, Wachhaus, and White (1973) reported a posttest tendency for subjects to select music taught under conditions of adult high approval. In contrast, Pantle (1977) did not find evidence that teacher influence affected preferences for classical music. Alpert (1979) found that "respected adults" (teachers and disc jockeys), playing high-approval roles, had greater influence on fifth-grader's attitudes toward classical music than did peers playing similar roles. Radocy (1976) reported a tendency for college music majors to rate musical selections in accordance with false and biased information presented by a
teacher-authority figure.

Johnstone and Katz (1957) studied the role of peer influence on the musical preferences of adolescent girls. The authors reported that popular girls, as measured by self-reported dating frequency, conformed more closely to the prevailing neighborhood norms in popular music selections than less popular girls. A trend toward similar musical taste and song preferences among clique members suggested that personal relations play a role in musical preferences. Pera (1965) reported that peer influence on musical preference decisions was most notable at the seventh-grade level and declined with increasing age. Inglefield (1968) reported that ninth-grade subjects showed an overall tendency to conform to the expressed musical preferences of acknowledged peer leaders, regardless of subject personality type or type of music, although "dependent" personality subjects tended to be more conforming than "independent" personality subjects. The jazz category elicited the most conformity, followed by folk music, rock-and-roll music, while classical music elicited the least conformity. Radocy (1975) studied pressure to conform in musical judgments among college-level music majors, utilizing peer confederates instructed to respond incorrectly to pitch and loudness-matching tasks. Subjects tended to alter their own musical sense judgments to a considerable degree to conform to erroneous peer judgments.

LeBlanc (1982) has suggested that the media mediates the development of music preference and plays a major role in shaping the music preferences of adolescent listeners. The media selects from available musical stimuli and presents the selections in the context
of the cultural environment. The role of the media in shaping musical preferences may be somewhat less in large urban areas with more diversified radio programs offering more selection options than in rural areas more dependent upon "Top 40" radio programming. The effect of the media may also be somewhat lessened due to greater financial resources and music production equipment among today's young people (LeBlanc, 1982).

Weibe (1940) studied the effect of radio plugging on student attitude toward popular songs. While plugging (repeated hearings) did not increase liking for popular songs, songs not plugged were preferred less than plugged songs. Tanner (1976) reported that disc jockey approval of music positively influenced the musical preferences of college students. Booker (1968) reported 90% of almost 1,000 teenagers surveyed held a favorable attitude toward disc jockeys with most feeling the disc jockey understood them better than ministers or teachers. Most subjects listed the disc jockey as the major influence on their music listening behaviors.

Personality and Degree of Music Listening Involvement

A number of studies investigated the relationship between degree of music listening involvement and listener attributes. Ridgeway (1976) studied the relationship between music listening involvement and ambivalence about affective interaction, based on an assumed connection between the structure of social interaction and the structure of society's music. Ridgeway conceptualized music as an expressive system that provides the listener with an experience
symbolically analogous to participation in group processes of affective interaction, providing a greater sense of integration within the society. It was argued that highly involved listeners participate in music listening because it structurally represents some aspect of social behavior toward which they have strongly conflicting or ambivalent responses. Ridgeway utilized a music involvement measure containing three factors: (a) listening frequency, (b) degree of listening absorption, and (c) breadth of musical interest. Listening frequency consisted of a self-reported estimate of the hours per week engaged in no other activity than listening to music. Degree of listening absorption was measured with self-estimates of the level of absorption most frequently maintained during usual listening experiences (modal), as well as average absorption level, considering times of least and greatest concentration. Breadth of interest was measured by subjects' responses to a musical stimulus tape consisting of 30-second selections from 39 different pieces of music. The subjects were also rated on a "TAT-type" measure of interpersonal affective orientation. Results showed that high involvement listeners had more conflicting positive and negative affective associations with interaction than low or medium listeners. Subjects were further subdivided on the basis of music involvement scores and asked to participate in a role-played, experimental affective interaction task, rating their listening absorption to a musical tape before and after the task. The effect of role playing an affective interaction situation increased listening absorption for subjects rated as highly involved, but not for subjects rated as low involvement listeners.
High involvement listeners were also more likely to describe musical effects in terms of symbolic participation in group processes. Results suggest that high involvement listeners use music as a "readily available, socially acceptable means of dealing with their ambivalent associations with social interaction" (Ridgeway, 1976, p. 427).

Roberts and Ridgeway (1969) investigated the relationship between attitudes toward talking, public speaking, and music involvement among 97 subjects. The authors contended that music represented an expressive system similar to speech and that individuals with conflicting attitudes toward talking would be more highly involved in music as a means of resolving conflicting or ambivalent attitudes toward talking. Music involvement was measured utilizing Ridgeway's (1976) three-factor index of music involvement which included: (a) listening frequency, (b) degree of listening absorption, and (c) breadth of musical interest. Attitudes toward talking and public speaking were measured by an instrument developed by the investigators for the study. The authors reported that high music involvement listeners reported more conflicting attitudes toward speaking in social situations than low involvement listeners.

Franklin (1982) investigated the relationship between completed and interrupted musical selections, high and low music involvement, and state and trait levels of anxiety among 263 community college students. The author utilized Ridgeway's (1976) three factor index of music involvement as a measure of music involvement and the Spielberger State Trait Anxiety Inventory as a measure of state and trait levels of anxiety. Subjects identified as high and low music
involvement listeners listened to a completed or interrupted version of a popular music selection after completing the Spielberger State Trait Anxiety Inventory. After listening to the completed or interrupted version of a popular music selection, subjects were then readministered the Spielberger State Trait Anxiety Inventory. The author did not find significant differences between high and low music involvement listeners in terms of either state or trait anxiety levels, but reported significant interactive effects in terms of level of music listening involvement and interrupted music listening on state anxiety levels. The author concluded that the impact of music is greater on state than trait anxiety.

Blackburn (1983) measured the listening involvement of 97 adolescents based on responses to three questions: (a) How "in-to" your favorite music would you say you are? (b) How important to you is listening to music every day? (c) How important to your life in general is your favorite music? The subjects were evaluated on the basis of five subscales on the Tennessee Self-Concept Scale. Subjects rated as highly involved in music listening were found to have significantly higher scores on the Number of Deviant Signs subscale of the Tennessee Self-Concept Scale, suggesting greater psychological disturbance.

Fox and Williams (1974) studied the relationship between political orientation and degree of music listening involvement among 730 college students. Music involvement was measured by listening frequency, rock concert attendance, and record purchases. Results indicated that political orientation is associated with amount of music
listening involvement. Liberal students were found to attend rock and popular music concerts more frequently, buy more record albums and tapes, and spend more time listening to records and tapes than students rated as politically conservative. On the other hand, conservative students were shown to spend more time listening to the radio than students rated as politically liberal.

The Uses of Music

As noted previously in Chapter I, theories regarding the meaning or use of music reflect increased recognition of listener determinants in attributed meaning. The work of several theorists and researchers suggests that people listen in different ways and that experience influences reaction patterns. Gaston (1958) noted:

To each musical experience is brought the sum of an individual's attitudes, beliefs, prejudices, conditionings in terms of time and place in which he has lived. To each response, also, he brings his own physiological needs, unique neurological and endocrinological systems with their distinctive attributes. He brings, in all of this, his total entity as a unique individual. (p. 26)

Several theorists and researchers have developed categories to include different types of music listeners. Ortmann (1927) classified listeners on the basis of response and recognized three main types of listeners: (a) the sensorial type, (b) the perceptual type, and (c) the imaginal type. The sensorial type response is characterized as the most rudimentary form of response and is typical of children and musically untrained adults, who react primarily to the raw sensory material of music. Ortmann deemed that the sensorial response is the predominant factor in popular music. Ortmann
recognized the perceptual type response as a more highly developed form of response, characterized by the interpretation of the sensоrial effect and active or voluntary attention to the stimulus. The perceptual response to music is seen as characteristic of the musician and the talented layman. The imaginal type response is seen as the highest form of listener response and is characteristic of trained musicians and highly talented laymen who react to music primarily in terms of the tonal relationships inherent in the music.

Myers (1927) identified four types of music listeners: (a) the intrasubjective type, (b) the associative type, (c) the objective type, and (d) the character type. The intrasubjective type listener responds to music in terms of the sensory, emotional, or cognitive experience which it arouses. The associative type listener responds to music primarily in terms of nonmusical, associative thoughts suggested by the music. The objective type response is characterized by formal, analytic involvement with music. The character type listener responds primarily in terms of personality and/or mood characteristics as suggested by the music.

Meyer (1956) recognized three types of listeners: (a) formalists, (b) absolute expressionists, and (c) referential expressionists. For formalists, meaning resides in the intrinsic musical relationships of the specific musical stimuli. The absolute expressionist derives expressive meaning from the music without reference to extramusical thoughts. The perception of referential aspects of the music gives expressive meaning to the referential expressionists.
Heddon (1973) investigated the reaction profiles of 184 subjects and identified five principle factors involved in reaction to music: (a) associative, (b) cognitive, (3) physical, (d) involvement, and (e) enjoyment. The associative factor involved items relating to the forming of mental pictures/associations in response to music. The cognitive factor involved items reflecting an awareness and focus on the formal organization/structure of the music. The physical factor reflected items pertaining to physical or sensual response to music. The involvement factor reflected items pertaining to lack of concentration/attention and passivity in response to music. The enjoyment factor involved items reflecting emotional response to music. Heddon (1973) further examined the relationship between reaction profiles and several independent variables: (a) the 16 Personality Factor (16 PF) Questionnaire, (b) the Meyers-Briggs Type Indicator (MBTI), (c) the Two Factor Index of Social Position, (d) Gaston's A Test of Musicality, and (e) an investigator-developed Musical Background Survey. Discriminant function analysis was used to differentiate among the score profiles of groups with different reactions to music. Heddon reported that Factors E, H, N, Q2, and Q4 from the 16 PF; the Thinking-Feeling (TF) index of the MBTI, and the Musical Background Survey were among the more important variables in the differentiation of score profiles.

Each of the typologies of reactions to music presented reflect the belief that there are similarities in reactions to music and that it is possible to identify groups of persons who respond similarly to music. One aspect of musical reactions has to do with the way people
use or employ music. Several studies indicate that individuals use music for different major purposes.

Gantz et al. (1978) investigated "gratifications" and expectations associated with popular music among 468 adolescents in junior high, high school, and college. A list of possible gratifications was generated on the basis of a pilot study and researcher perception of the "possible ramifications of selected gratifications." Subjects were asked to indicate the frequency with which music listening provided the following gratifications:

1. It relieves my tension or takes my mind off things bothering me.
2. It gets me in the mood I want to be in.
3. It helps me pass the time or relieves boredom when I'm doing other things (like homework, cleaning, driving).
4. It makes me feel less alone when I'm with myself.
5. I think about the meaning of the lyrics.
6. It fills the silence when I'm with other people and no one is talking.
7. It sets a mood when I'm with others.

The investigators reported that the majority of subjects (91%) were motivated to listen to popular music to relieve boredom or pass the time. Also cited as frequently occurring, were motivations related to tension reduction, escape from problems, and mood alteration. Gantz et al. (1978) reported a direct and positive relationship between the amount of exposure to popular music and the frequency with which gratifications were obtained. While this study did not
relate personality factors to musical uses or motivations for listening, it does furnish evidence that there are certain distinguishable types of music uses and motivations for listening.

Lyle and Hoffman (1972) studied the media uses of 1st grade, 6th grade, and 10th grade children and found that music listening was the preferred media among 6th graders when they wanted to relax, be entertained, or when they felt lonely. The authors reported that 10th grade respondents used music for these same reasons, but also overwhelmingly chose music listening over other media as a recourse in situations when someone had hurt their feelings or made them angry.

Blackburn (1983) developed eight major content categories based on responses to open-ended questions regarding the importance and use of rock music among 97 adolescents. Blackburn reported the following results:

1. Fifty-one percent made comments about how music was used as an aid to relaxation.

2. Forty-eight percent made comments about how music can improve a person's mood.

3. Forty-six percent made comments about music making one feel "good" or "happy."

4. Forty-five percent responded that music was of value in terms of stimulation.

5. Forty-one percent made comments about music's ability to bring about affective responses.
6. Thirty-nine percent made comments indicating that lyrics aid self-understanding.

7. Thirty percent indicated that interest in music can improve friendships and peer relations.

8. Twenty percent indicated that they used music with homework, usually as an aid.

The author noted a relationship between subjects' level of involvement with music listening and the uses of music, with a higher percentage of subjects rated as highly involved in music listening, indicating music uses related to relaxation and mood improvement. The author did not relate personality factors to music uses or motivations for listening.

Smothers (1961) studied the social and private uses of music among a small number of adolescents and concluded that music is used by adolescents as an aid in their movement towards mature masculinity and femininity. Smothers indicated that the meanings of music were largely inferred from subjects' responses to open-ended questions about their general use of music. As such, many of the inferential conclusions regarding adolescents' use of music may be criticized as having been imposed on the data rather than being assembled from the data.

Affective Responses to Music

In addition to preference responses to music, other forms of affective response to music are relevant to this study. A representative review of the literature related to physiological and mood
responses to music will be presented. It should be noted that some authors (Hevner, 1935; Meyer, 1956; Reimer, 1970; Schoen, 1940; Seashore, 1967) have made a distinction at the conceptual level between aesthetic and affective responses to music. According to these authors, the aesthetic response is viewed as an intense, subjective experience providing insight into the nature of life, while the affective response is seen as a more superficial response (Abeles, 1980). Radocy and Boyle (1979) noted that aesthetic feeling is a particular type of affective behavior and is the outcome of aesthetic experience. Although the aesthetic experience and affective response to music has been conceptually differentiated, Abeles (1980) noted that these two constructs have not been distinguished empirically and have been similarly operationalized.

A brief overview of the major philosophical and theoretical positions regarding emotion and music will be presented to clarify various differences. The various positions regarding human response to music have centered on the association of meaning with music (Abeles, 1980). The terms "absolutism" and "referentialism" are used to refer to major aesthetic theoretical positions. The absolutists view musical meaning as lying exclusively within the music itself. According to absolutists, the sounds and what they do are inherently meaningful (Reimer, 1970). For the absolutists, musical meaning is conceived in terms of only the elements of sound and time and is not describable in nonmusical terms. Differences in meaning or value are seen as attributable to differences in musical structure because meanings are derived exclusively from the inherent musical materials.
of composition (Schwadron, 1967).

In contrast, the referentialists have suggested that the meaning of music exists outside of the work itself by making reference to the extramusical world of behaviors, actions, and emotions. Accordingly, musical sounds have meaning because they serve as a reminder, clue, or sign of meanings outside themselves.

Two other aesthetic theoretical positions exist with regard to musical meaning. Formalists have asserted that the meaning of music is primarily intellectual and that definite feelings and emotions are unsusceptible of being embodied in music (Hanslick, 1957). For the formalist, the experience of art resides in the recognition and appreciation of form for its own sake. Formalists have referred to the "aesthetic emotion" to account for a unique appreciation of music that has no counterpart in other emotional experiences (Reimer, 1970). The expressionists view the meaning of music as primarily emotional and reject the formalist view of the intellectual, removed from life nature of aesthetic experience (Reimer, 1970). A theorist's positions may represent a combination of these major aesthetic theoretical perspectives.

In addition to philosophical inquiry, physiological and mood responses to music represent other approaches to the study of affective response to music.

Physiological Responses to Music

Several authors (Abeles, 1980; Dainow, 1977; Hodges, 1980; Radocy & Boyle, 1979) have reviewed the literature on physiological
responses to music. These authors concluded that music does effect changes in the rate of some physiological reactions, but the nature and direction of these changes in relation to affective response is not clear. While changes in the rate of bodily processes evoked by music have been noted by numerous investigators, there is little agreement regarding the degree to which physiological changes are reflective of affective responses to music (Radocy & Boyle, 1979). Hodges (1980) noted that few investigators have made an attempt to correlate physiological and affective responses. While music may evoke changes in physiological processes, it is not known what this means in terms of affective response. It is not known whether physiological rate changes occur because an individual likes/enjoys a particular musical selection or experiences excitement or anxiety because of it, or because he or she was made anxious because of the listening environment (Hodges, 1980). Additional confusion in relation to physiological indices of affective behavior stems from the fact that music listening involves cognitive processes, which mediate sensory input influencing autonomic responses (Dainow, 1977). Radocy and Boyle (1979) suggested that most of the studies on physiological responses to musical stimuli are mere descriptions of physiological reactions indicative of physiological concomitants of affective responses, but provide no direct assessment of true affective responses.

Several physiological measures have been employed by researchers in an attempt to determine the effects of music on bodily processes. Researchers have focused primarily on heart rate, respiration rate
and amplitude, skin responses, and muscle tension. Some researchers have sought to determine if physiological changes are a function of kinds of musical selections such as stimulative versus sedative music or vocal versus instrumental music. Gaston (1951) defined stimulative music as that which emphasizes rhythm and utilizes staccato (short, detached, percussive) notes and sedative music as that which emphasizes melody and harmony and utilizes legato (longer, sustained, smoother) notes. Other investigators have sought to determine if physiological changes are a function of listener attitude toward music, while others have examined physiological changes as a function of listener types in terms of musical experience/training.

Several reviewers (Abeles, 1980; Dainow, 1977; Hodges, 1980; Lundin, 1970) of the literature on physiological responses to music noted marked inconsistency in the results of studies examining the effects of music on heart rate. Landreth and Landreth (1974), as well as Hincke (1970), reported that stimulative music tends to increase heart rate, while sedative music tends to decrease heart rate. Conversely, Zimmy and Weidenfeller (1963) examined the heart rates of 18 college students in relation to music designated as exciting, neutral, and calming and reported that music had no effect on heart rate. D. S. Ellis and Brighouse (1952), as well as Shatin (1957), reported that any type of music will increase heart rate.

While less research attention has been given to the effects of music on respiration rate or amplitude, results are generally inconsistent and preclude conclusive statements. Several investigators (D. S. Ellis & Brighouse, 1952; Wilson & Aiken, 1977) reported
respiration increase in relation to stimulative music and respiration
decrease in relation to sedative music, while Binet and Courtier
(1895/1972) reported respiration increases accompanying any type of
music.

The galvanic skin response (GSR) is defined as a temporary,
primarily negative fluctuation in the electrical resistance of the
skin (Hodges, 1980) and is due to the depolarization of the cell
membranes of the skin through the action of sweat glands which are
mediated by the sympathetic division of the autonomic nervous system
(Lundin, 1970). Michel (1952) and Shrift (1955) reported stimulative
music produced more GSR deflections than sedative music, while Zimmy
and Weidenfeller (1963) reported a decrease in GSR readings during
stimulative music. Differential measurement of GSR readings have
contributed to the confusion of GSR research in relation to music and
preclude conclusive statements on the effect of music on GSR. Some
investigators have measured magnitude and direction of response,
while others have measured rising period or latency.

Several investigators have examined the effects of music on
muscle tension and motor responses. Sears (1958) found that stimula­
tive music tends to increase muscular activity, while Lord (1968)
reported no significant differences in muscular activity in relation
to stimulative or sedative music. Reardon and Bell (1971) examined
the effect of sedative and stimulative music on the activity levels
of retarded boys and reported a decrease in activity level with any
type of musical stimulation. Shatin (1957) reported an increase in
general activity among schizophrenics with any type of music.
Dainow (1977) and Hodges (1980) noted several methodological problems relevant to the study of musical effects on physiological reactions which have contributed to the marked inconsistencies found in this area of research. Differential classification of musical stimuli, as well as differential volume intensity of musical stimulation, accounts for a proportion of inconsistent findings. Inconsistencies in a testing environment and lack of standardized measures of physiological responses have also contributed to contradictory findings in this area. Radocy and Boyle (1979) and Hodges (1980) concluded that while music listening influences physiological responses, the present state of physiological research precludes predictions or generalizations about the affective response to music.

Mood Responses to Music

Haack (1980), as well as Radocy and Boyle (1979), noted that there is sufficient evidence to indicate that music affects physiological responses. Haack (1980) further suggested that music can produce physiological effects, which, in turn, affect human emotions and mood responses. While there is a lack of agreement among investigators regarding the nature of the relationship between music and mood responses, there is a general consensus among psychologists and musicians that music can influence mood responses in listeners.

Most investigators studying mood responses to music have utilized some type of verbal description/report of mood such as an adjective checklist, semantic differential, or other type of rating scale. Some investigators (Capruso, 1952; Hevner, 1935) have studied
the ability of subjects to describe the mood of the music, while others (Eagle, 1971; Shatin, 1970; Sopchak, 1955) have examined the existing mood of listeners as an influence on mood responses to music.

A pioneering study on mood responses to music was conducted by Hevner (1935), who developed an adjective checklist of 67 adjectives arranged in 8 clusters. The adjectives within each cluster were deemed almost identical. Subjects listened to various musical selections and were asked to check the adjectives descriptive of the music. Results indicated strong agreement among subjects in describing the mood of various musical selections.

In a similar study, Capruso (1952) found high listener agreement among 1,075 "nonmusical" subjects in terms of matching musical selections to six mood categories.

The results of these studies correspond with Lundin's (1970) assertion that mood responses involve learning in that individuals within a specific cultural group learn that music with certain characteristics reflect certain moods. While individuals within a specific cultural group may be able to identify a general mood descriptive of a particular musical selection, Farnsworth (1969) suggested that more discriminative mood responses to music are dependent upon extramusical variables such as personal history and personality.

The existing mood of the listener as an influential variable affecting mood response to music has been investigated by Eagle (1971), who measured the existing mood of 274 college music majors prior to presenting subjects with 20 musical excerpts. Subjects were
asked to record their mood responses to both vocal and instrumental musical selections. Eagle concluded that existing listener mood influences mood responses to music and that mood responses differ for vocal and instrumental selections.

Sopchak (1955) also examined the effects of existing listener mood on mood responses to music. Sopchak developed an adjective checklist with 12 categories, which 553 college students utilized in responding to 15 compositions. Subjects were also asked to indicate their present mood on a 3-point scale as either "cheerful," "neutral," or "gloomy." Sopchak reported a definite relationship between listener mood and responses to music. A higher percentage of gloomy subjects responded to sorrow, joy, calm, low, eroticism, jealousy, wonder, and cruelty. Sopchak concluded that gloomy individuals experience more tensions and are more likely to project inner tensions onto the music.

Shatin (1970) examined the mood altering ability of music based on the "iso-moodic principle" employed in music therapy. The iso-moodic principle maintains that listener's mood can be influenced most effectively by first matching musical stimuli to the listener's existing mood and then gradually changing the mood of the music in the desired direction. Shatin asked 74 male college students to rate their moods while listening to 10 two-minute excerpts representing an affective continuum between two contrasting antipodes of mood. Shatin reported significant alternation of subjective mood responses in relation to music selected on the basis of the iso-moodic principle.
The effect of music on anxiety has been examined by several investigators. Smith and Morris (1976) studied the effects of stimulative, sedative, or no-music conditions on test anxiety. Sixty-six college students enrolled in a psychology class responded to a five-item questionnaire designed to assess anxiety before and after each of five sections of a psychology examination. The authors reported that while test performance was not affected by music, stimulative music significantly increased anxiety, while sedative music and the no-music condition had no effect on anxiety.

Rohner and Miller (1980) tested the hypothesis that music would have an anxiety-reducing effect on high anxiety subjects and that sedative music would reduce state anxiety in high anxiety subjects more than stimulating music. One hundred and fifty-six high state anxiety college students were selected from introductory psychology classes on the basis of responses to the Eight State Questionnaire. Subjects were readministered the Eight State Questionnaire following the music or no-music treatment. Rohner and Miller reported nonsignificant differences in state anxiety as a result of music treatments, but reported a trend for sedative music to have some anxiety-reducing effects upon high state anxiety subjects.

Jellison (1973) examined the effect of stimulative and sedative music, white noise, and no sound on the physiological and verbal responses of college-age males put in a stress situation by being administered an electrical shock. Jellison reported no differences in physiological differences between the four groups, but reported subjects in both the stimulative and sedative music groups showed
significantly less anxiety than those in the white noise group. Jellison reported no significant differences in verbally reported anxiety between the sedative and exciting music conditions.

While there is ample evidence to suggest that many listeners experience mood enhancement or alteration in relation to music, Farnsworth (1969) noted that it must not be assumed that the tonal forms of music invariably arouse the moods and emotions whose names they share. It is erroneous to assume that music's effects on mood states are invariant. The mood elicited by music depends not only on the sounds a listener hears, but upon factors external to the music, such as listener personality, existing mood, meaning of lyrics, and listener attitudes toward music in general as well as the specific selection in particular (Farnsworth, 1969).
CHAPTER III

METHODOLOGY

This study was designed to determine if, among young people, a relationship exists between music style preference, level of music listening involvement, and major uses of music and the personality dimensions of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration. Major groups of music preference, music involvement, and music uses were identified by the subjects' responses to a Music Preference and Interest Questionnaire developed by the investigator for this study. The Structural scales of the California Psychological Inventory were used as a measure of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration.

This chapter will provide a description of the subjects, followed by the method of data collection, description of the instruments used, the hypotheses tested, and statistical methods used in the study.

Subjects

The subjects for this research were 300 young people enrolled during the Winter and Spring semesters 1988 in several southwest Michigan educational institutions. Subjects were all volunteers who agreed to participate in the study. The study sample consisted of
137 males and 163 females ranging in age from 18 to 20 years. The research sample does not represent all young people in the United States, but represents only midwestern college students that voluntarily participated in the study.

Procedure

During Winter and Spring semesters, 1988, the investigator contacted the academic dean or chairperson of the psychology and sociology departments at each institution to request assistance in identifying classroom instructors willing to participate in the study by providing classroom time for the investigator to introduce the study to students and to solicit volunteers. Fifteen classroom instructors were identified as willing to assist this way. Volunteers from 34 classes in psychology or sociology and 5 general education classes provided the subject population.

It proved impossible to make provision for group testing of volunteers either during class time or out of class time. Volunteers from each class were asked to take the two instruments with them and return them to their classroom instructor in 1 week. All subjects were given verbal instructions for taking both instruments prior to their distribution. (Instructions to subjects may be found in Appendix A.)

The instruments utilized in the study were deemed readily understandable by the investigator and test administration did not require supervision. Subjects were instructed not to place their name on either instrument and were requested to provide only their age and
gender. Each subject received an envelope containing the two instruments. Each pair of instruments was assigned an identification number to ensure that the instruments did not get separated. All subjects were provided both verbal and written informed consent.

**Instruments**

Two instruments were used for the collection of data in this study. The Structural scales of the California Psychological Inventory were utilized as a measure of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration. An investigator-developed instrument, the Music Preference and Interest Questionnaire, was used to classify subjects in terms of musical preference, level of music listening involvement, and major music uses.

**The California Psychological Inventory**

The California Psychological Inventory (CPI) was developed by Gough (1987). The purpose of the inventory is to assess the kind of everyday variables, referred to as "folk concepts," that individuals use in their daily lives to understand, classify, and predict their own behavior and that of others (Gough, 1987). The focus of the CPI scales is interpersonal behavior or social interaction and the purpose of the present set of 20 folk concept scales is to permit explication and prediction of a broad range of interpersonal behavior (Gough, 1987). The CPI is a multipurpose instrument for assessing normal personality characteristics that are important in everyday
life. The CPI is designed to predict what people will say or do in defined contexts and what others will say about them. The CPI has been used by clinicians and researchers for over 30 years and a search of Psychological Abstracts indicated that the CPI was the second most frequently used personality inventory in research with adolescents from 1969 to 1973 (LeUnes, Evans, Karnei, & Lowry, 1980). Many of the 462 items were taken from the Minnesota Multiphasic Personality Inventory (MMPI). The CPI was revised in 1987 and two new scales (Independence and Empathy) have been added, bringing the total on the revised profile to 20 (Gough, 1987). The 20 revised scales include: (a) Dominance, (b) Capacity for Status, (c) Sociability, (d) Social Presence, (e) Self-Acceptance, (f) Independence, (g) Empathy, (h) Responsibility, (i) Socialization, (j) Self-Control, (k) Good Impression, (l) Communality, (m) Well-Being, (n) Tolerance, (o) Achievement via Conformance, (p) Achievement via Independence, (q) Intellectual Efficiency, (r) Psychological-Mindedness, (s) Flexibility, and (t) Femininity/Masculinity. In updating the CPI, 18 items were eliminated, 12 of which were repeated items, and 29 other items were changed in wording to reflect current usage, simplify wording, and reduce sexist or other bias.

In addition, three Structural scales have been added to the CPI to reflect a new structural model of personality. The new structural model of personality specifies three major vectors, which taken in combination allows for the assessment of personality type and level of personality integration. The Structural scales of the revised CPI are based on three relatively uncorrelated vector scales developed to
assess the underlying themes of interpersonal orientation (from externality to internality), normative orientation (from norm-favoring to norm-questioning), and realization (from lower to higher). The combination of v.1 (interpersonal orientation) and v.2 (normative orientation) yields four types of psychological organization of personality. The degree to which the potentials associated with these four types have been realized is indicated by the score on v.3 as a measure of personality integration.

In the present study, the three Structural scales of the revised CPI were selected as personality measures, employing the vector scores. The development of the CPI Structural scales resulted from factorial findings, indicating that the folk concept scales could be reduced to specification of principle themes assessing interpersonal interactive disposition and normative or social conformity. The three structural scales were developed out of the three themes or vectors identified through factor and smallest space analysis.

Descriptive information concerning the meaning of higher and lower scores on the three scales resulted from correlations of scores on the scales with adjectival and Q-sort descriptions by observers (spouses, peers, and assessment staff). The v.1 scale serves as a measure of the introversion-internality versus extroversion-externality axis. Persons scoring higher on v.1 tend to be viewed as reticent, shy, reserved, moderate, modest, and reluctant to initiate or take decisive social action. Persons scoring lower tend to be seen as outgoing, confident, talkative, and as having social poise and presence. The v.1 scale contains 34 items.
The v.2 scale contains 36 items and is conceptualized as a measure of normative orientation, with higher scores related to norm-favoring and lower scores to norm-questioning dispositions. Persons scoring high on v.2 tend to be seen as well-organized, conscientious, conventional, dependable, and controlled. Persons scoring low tend to be seen as rebellious, restless, pleasure-seeking, and self-indulgent.

The v.3 contains 58 items and is conceptualized as a measure of self-realization and psychological integration. The scale measures self-realization in terms of seven levels. Persons scoring higher on the v.3 scale tend to be viewed as relatively free of neurotic trends and conflicts, moderate, mature, insightful, optimistic, and as having a wide range of interests. High scorers believe themselves to be capable, able to cope with the stresses of life, and reasonably fulfilled or actualized. Persons scoring low on the v.3 scale tend to be viewed by others as unsure of self, dissatisfied, uncomfortable with uncertainty and complexity, and as having a narrow range or reduced range of interests. Low scorers believe themselves to be lacking in resolve, vulnerable to life's traumas, and not at all fulfilled or actualized.

Gough (1987) has presented reliability and validity data for the CPI. The internal consistency correlations were computed on samples of 200 college males and 200 college females, randomly drawn from archival samples of college students. Coefficients were also computed on the combined sample of 400 students. The alpha coefficients for males range from a low of .45 on Femininity/Masculinity to a high...
of .85 for v.3. The reported median for males is .72. For females, the range was from a low of .39 for Femininity/Masculinity to a high of .83 for v.3, with a median of .73. Gough reported that these figures correspond to typical findings for self-report inventories. Gough reported test-retest correlations for high school students tested in the 11th grade and then 1 year later. The correlations for males ranged from .61 for v.2 to .75 for v.3. Test-retest correlations for females ranged from .71 for v.3 to .76 for v.1.

While the CPI has been criticized because the folk concept scales are correlated with each other, Gough (1987) reported that the Structural scales, based on the metathemes of the inventory, are relatively independent of each other. Gough reported correlations of -.07 between v.1 and v.2 for males and .03 between v.1 and v.2 for females. The coefficients for v.1 and v.3 were reported as -.17 for males and -.18 for females. The coefficients for v.2 and v.3 were reported as .12 for males and .17 for females. Factor analysis of the scales provides evidence of the construct validity of the scales. Although research to date with the CPI Structural scales has been limited due to the fact that the scales have only been recently published, Gough reported moderate relationships between the Structural scales with certain variables on the Omnibus Personality Inventory, the Guilford-Zimmerman Temperament Survey, the Eysenck Maudsley Personality Inventory, the Cattell 16 Personality Factor Inventory, the Comrey Personality Scales, the Myers-Briggs Type Indicator, and the MMPI subscales. In a review of the CPI in the Ninth Mental Measurements Yearbook, Baucom (1985) reported that numerous
construct validational studies of the CPI scales indicate that the scales generally measure what their titles suggest and that many of the correlations between individual CPI scales and relevant external criteria fall in the .2 to .5 range. Baucom noted that such relationships are typical in personality research.

Baucom (1985) noted that research with the CPI has been extremely diverse and includes such varied topics as predicting successful job performance, school performance, Type A coronary-prone behavior, and alcohol and drug abuse.

The Music Preference and Interest Questionnaire

An investigator-developed questionnaire was used in the study to determine the musical preferences of respondents, as well as degree of music listening involvement and major uses of music.

To develop the music preference scale, a list of major music categories was submitted to several local area record store personnel who were asked to indicate prominent exemplary artists for each music category to verify the distinctness of each category. The list of music categories was then submitted to three local experts within the field of music (one professional musician and two professors of music) for review and approval.

To determine the respondent's musical preference, subjects were asked to indicate the degree of enjoyment derived from listening to the following music preference categories: (a) classical, (b) jazz, (c) hard rock, (d) country, (e) contemporary Christian/gospel, (f) soft rock, (g) heavy metal, (h) soul/rhythm and blues, (i) folk, and
Response categories ranged from "no enjoyment at all" to "great enjoyment." These data were used to establish a set of music enjoyment variables which were correlated with the personality variables, music use variables, and the music involvement variable. Subjects were asked to indicate the category of music they generally prefer to listen to from among the same music preference categories to determine if there was significant variation in the personality variables between those with preferences for hard rock, soft rock, and nonrock music. Subjects were asked to list an example of their preferred musical style to ensure correspondence with music industry categorizations. Subjects indicating a preference for classical, jazz, country, contemporary Christian/gospel, folk, soul/rhythm and blues, or other were categorized in the nonrock group. Subjects indicating a preference for hard rock or heavy metal were categorized in the hard rock group. Subjects indicating a preference for soft rock music were categorized in the soft rock group.

Subjects were classified into a "high involvement" group or a "low involvement" group, based on responses to questions relating to music listening frequency, concert attendance, music-related purchases, music material ownership, and level of listening absorption. Item selection for the involvement scale was based on previous research (Blackburn, 1983; Fox & Williams, 1974; Ridgeway, 1976) which indicated that music listening frequency, concert attendance, music-related purchases, music material ownership, and level of listening absorption were relevant dimensions for the measurement of music
An interval scale was developed for each item on the involvement scale. The arrangement of intervals on the involvement scale was based on an item analysis of the scale conducted after a pilot study consisting of 32 subjects' responses to the involvement scale. Scaling of the involvement scale was selected in such a way to reflect the responses of the pilot study sample. The point multiserial coefficient was used to indicate how consistently each item on the music involvement scale correlated with the scale as a whole. The internal consistency of the music involvement scale, measured by coefficient alpha, was .74. The sample median was used as the point of reference in differentiating between high and low music involvement listeners. Scores on the music involvement scale were used to determine if there was significant variation in the personality variables between those with high and low music involvement and to determine if there was a significant relationship between music involvement, music uses, and music preference. The music involvement scale was submitted to two professors of music and one professional musician for review and approval.

The third purpose of the Music Preference and Interest Questionnaire was to establish music use groups. Major music uses were identified as part of a pilot study in which 32 college subjects ranging in age from 18 to 20 years were asked to respond to an open-ended question regarding their use of music in daily living. Responses to this open-ended question given by pilot study subjects were analyzed by several judges including the investigator, a psychologist, a
professional musician, and a doctoral student in counseling psych­ology. A total of seven categories of music were developed by the judges to include the majority of responses. The identified cate­gories of music use were as follows:

1. I use music to help me temporarily escape from my problems or things that are bothering me.
2. I use music to relieve boredom.
3. I use music as a way of understanding myself and the world better by thinking about the meaning of the lyrics.
4. I use music as a way of improving or changing my mood.
5. I use music to help me relax.
6. I use music as a way of expressing my thoughts and feelings.
7. I use music to keep me company when traveling or studying.

Subjects in the study sample were first asked to rank order all of the music use categories in terms of their primary use of music, providing descriptive information regarding the relative importance of the music use categories, as well as subject classification into music use groups. Subjects were classified into music use groups on the basis of the use receiving the highest rank to determine if there was significant variation in the personality variables between those who use music for different major purposes. Subjects were then asked to indicate all uses that applied to their use of music to establish a set of music use variables which were correlated with the person­ality variables, music enjoyment (preference) variables, and the music involvement variable.
Null Hypotheses

1. There is no significant difference between the personality centroids of those with high and low music listening involvement. A centroid is the multivariate equivalent of the center of gravity. In statistics it is used to define a point in multidimensional space, whose coordinates are the mean scores on each of the variables under study.

2. There is no significant multiple correlation between the set of personality variables and the involvement variable.

3. There are no significant differences among the personality centroids of those with different music style preferences.

4. There are no significant differences among the personality centroids of those who use music for different major purposes.

5. There is no significant canonical correlation between the set of personality variables and the set of music enjoyment variables.

6. There is no significant canonical correlation between the set of personality variables and the set of music uses variables.

7. There is no significant canonical correlation between the set of personality variables and the combined music variables.

8. There is no significant canonical correlation between the set of music enjoyment (preference) variables and the set of music uses variables.

9. There is no significant multiple correlation between the music uses variables and music involvement.
10. There is no significant multiple correlation between the music enjoyment (preference) variables and music involvement.

Analysis

Hypotheses 1, 3, and 4 represent the main effects and were tested separately for males and females by 3 one-way multivariate analyses of variance using the three personality variables as the dependent variables. Discriminant analysis was applied in the event of a significant $F$ ratio to further study the directions along which the major differences occurred.

Each of Hypotheses 5, 6, 7, and 8 was tested separately for males and females by canonical correlation analysis. Each of Hypotheses 2, 9, and 10 was tested separately for males and females by multiple linear regression analysis.

For each hypothesis test, alpha was set at .05.
CHAPTER IV

ANALYSIS OF DATA

The present study was designed to study the relationship between young peoples' music listening behaviors and the personality dimensions of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration.

The subjects for this study were 300 college students ranging in age from 18-20 years enrolled during the Winter and Spring semesters, 1988, at various midwestern educational institutions. The sample consisted of 163 females and 137 males who volunteered to complete the California Psychological Inventory and an investigator-developed questionnaire, the Music Preference and Interest Questionnaire. Mean age for the total sample was 19.46 years. The mean age for females was 19.52 years and the mean age for males was 19.39 years.

Testing of the Hypotheses

Each of the null hypothesis presented in Chapter I is now examined. They are stated in the null form so that a determination can be made whether or not they should be retained or rejected from a statistical standpoint.
Hypothesis 1

There is no significant difference between the personality centroids of those with high and low music listening involvement. A centroid is the multivariate equivalent of the center of gravity. In statistics it is used to define a point in multidimensional space, whose coordinates are the mean scores on each of the variables under study.

Hypothesis Test for Males

The null hypothesis of no significant difference between the personality centroids of those with high and low music listening involvement was tested for males by a one-way multivariate analysis of variance. This yielded an F ratio of 9.2519 with 3 and 133 degrees of freedom and a probability of .0001. Hence, the null hypothesis is rejected. There is a significant difference between the personality centroids of the male high and low music listening involvement groups.

The male high and low involvement group means are presented in Table 1.

To understand the nature of these differences, discriminant analysis was undertaken in constructing a linear combination of the three personality variables to maximally discriminate between the two groups. Discriminant analysis yields a discriminant function which is a combination of the personality variables as related to a classification variable that represents group membership. The number of
discriminant functions yielded will be the smaller of the number of variables and one less than the number of groups.

Table 1
CPI Structural Scales Means for Male High Involvement and Low Involvement Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Self-realization mean</th>
<th>Norm-acceptance mean</th>
<th>Introversion mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low involvement</td>
<td>69</td>
<td>30.6377</td>
<td>22.1594</td>
<td>15.7971</td>
</tr>
<tr>
<td>High involvement</td>
<td>68</td>
<td>30.4706</td>
<td>17.8970</td>
<td>14.0882</td>
</tr>
</tbody>
</table>

The first discriminant function was found to be significant with an approximate chi square of 25.30 with 3 degrees of freedom and a probability of .0001. Table 2 presents the group means on this first discriminant function.

Table 2
Group Means: Discriminant Function—Hypothesis 1—Males

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low involvement</td>
<td>26.456</td>
</tr>
<tr>
<td>High involvement</td>
<td>21.867</td>
</tr>
</tbody>
</table>

The standard coefficients for Discriminant Function I are shown in Table 3.
Table 3

Discriminant Analysis Function I--Hypothesis 1--Males

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard discriminant function coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>0.9439</td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>56.2162</td>
</tr>
<tr>
<td>Internality (introversion)</td>
<td>23.7415</td>
</tr>
</tbody>
</table>

It is common practice to consider as making a meaningful contribution those variables with discriminant function coefficients which are at least half (or close to half) of the highest (absolute) coefficient. The personality variables that contributed the most in discriminating among the male high involvement and low involvement groups are norm-acceptance and introversion.

Figure 1 places the high and low music involvement group means on the function. The arrows pointing to the right indicate increasing scores on the labeled variables.

The discriminant function indicates that the males with low music involvement scored higher on the norm-acceptance and the introversion scales than those with high music involvement.

Hypothesis Test for Females

The null hypothesis of no significant difference between the personality centroids of those with high and low music listening involvement was tested for females by a one-way multivariate analysis.
Figure 1. Discrimination Among Male High Involvement and Low Involvement Groups.

of variance. This yielded an F ratio of 4.9588 with 3 and 159 degrees of freedom and a probability of .0029. Hence, the null hypothesis is rejected. There is a significant difference between the personality centroids of the female high and low music listening involvement groups. The female high and low music involvement group means are presented in Table 4.

Table 4
CPI Structural Scales Means for Female High Involvement and Low Involvement Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Self-realization mean</th>
<th>Norm-acceptance mean</th>
<th>Introversion mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low involvement</td>
<td>88</td>
<td>30.9659</td>
<td>21.3523</td>
<td>17.6250</td>
</tr>
<tr>
<td>High involvement</td>
<td>75</td>
<td>31.0000</td>
<td>19.5467</td>
<td>14.8267</td>
</tr>
</tbody>
</table>
To understand the nature of the differences, discriminant analysis was undertaken in constructing a linear combination of the three personality variables to maximally discriminate between the two groups. The first discriminant function was found to be significant with an approximate chi square of 14.2659 with 3 degrees of freedom and a probability of .0026. Table 5 presents the group means on this first discriminant function.

Table 5

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low involvement</td>
<td>26.469</td>
</tr>
<tr>
<td>High involvement</td>
<td>23.201</td>
</tr>
</tbody>
</table>

The standard coefficients for Discriminant Function I are shown in Table 6.

The personality variables that contributed the most in discriminating between the female high involvement and low involvement groups are introversion and norm-acceptance. Figure 2 places the high and low music involvement group means on the function. Again, the arrows pointing to the right indicate increasing scores on the labeled variables.

The discriminant function indicates that those females with low music involvement scored higher on the introversion and norm-acceptance scales than those with high music involvement.
Table 6

Discriminant Analysis Function I—
Hypothesis 1—Females

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard discriminant function coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>-3.3755</td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>42.7242</td>
</tr>
<tr>
<td>Introversion</td>
<td>53.6095</td>
</tr>
</tbody>
</table>

Introversion

- - - - - - - - - - - - - -

Norm-acceptance

- - - - - - - - - - - - - -

<table>
<thead>
<tr>
<th>High involvement</th>
<th>Low involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.0</td>
<td>21.0</td>
</tr>
<tr>
<td>22.0</td>
<td>23.0</td>
</tr>
<tr>
<td>24.0</td>
<td>25.0</td>
</tr>
<tr>
<td>26.0</td>
<td>27.0</td>
</tr>
<tr>
<td>28.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Discrimination Among Female High Involvement and Low Involvement Groups.

Hypothesis 2

There is no significant multiple correlation between the set of personality variables and the involvement variable.
Hypothesis Test for Males

The null hypothesis of no significant multiple correlation between the set of personality variables and the music involvement variable was tested for males by multiple linear regression.

A critical function of the multiple regression program is to predict a score for each respondent on the dependent variable (music involvement) based on a combination of his or her scores on the independent variables (personality variables). Each predictor score is multiplied by an appropriate weight, and the linear combination of the resulting products yields the predicted score. The weights are determined by the principle of least squares, meaning that the sum of squared errors of prediction are minimized for the particular data being considered.

Once a predicted score has been obtained for each subject, the predicted scores for all subjects are correlated with the actual scores received on the dependent variable. The resulting statistic is called the coefficient of multiple correlation.

For Hypothesis 2 (males) the coefficient of multiple correlation between music involvement and a linear combination of the three personality variables was .4771. An analysis of variance for the multiple linear regression yielded an $F$ value of 13.066 with 3 and 133 degrees of freedom and a probability of .000005. Hence, the null hypothesis is rejected and it can be concluded that there is a significant multiple correlation between the three personality variables and music involvement for males.

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The square of the coefficient of multiple correlation is called the coefficient of determination. For Hypothesis 2 (males), the coefficient of determination was .2276, indicating that approximately 23% of the variance in the music involvement scores is being accounted for by a combination of the three personality variables.

Each predictor score must be multiplied by an appropriate weight to determine its influence in the regression equation which predicts the score on the dependent variable. These weights are called standardized regression coefficients. Each weight indicates the change in the dependent variable with each change of one standard deviation in the independent variable with which it is associated when the other independent variables in the regression are held constant.

Table 7 presents the regression coefficients for each variable and their computed $t$ and probability values. A significant $t$ denotes that the regression coefficient is truly different from zero in the population and that the variable with which it is associated contributes significantly to the regression after the influence of the other predictors is taken into account.

Two of the $t$ values presented in the third column of Table 7 are significant beyond the .05 level. They indicate that the corresponding variable contributes significantly to the regression once the influence of the other independent variable has been taken into account. In this case, the variables of norm-acceptance and introversion are making a significant contribution to the obtained correlation. This indicates that males who are less norm-accepting and less introverted tend to be more involved in music. Results of
testing Hypothesis 2 are noted as in complete agreement with those indicated in testing Hypothesis 1 for males.

Table 7

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized regression coefficient</th>
<th>Computed t value</th>
<th>Probability value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>.024</td>
<td>0.311</td>
<td>.756</td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>-.422</td>
<td>-5.520</td>
<td>.000*</td>
</tr>
<tr>
<td>Introversion</td>
<td>-.238</td>
<td>-3.099</td>
<td>.002*</td>
</tr>
</tbody>
</table>

*p < .05.

Stepwise regression was performed to identify the specific contribution of each variable. Stepwise regression makes possible the addition of the predictors one by one, computing the partial regression coefficient and predicted variance at each step. In stepwise regression the predictor with the highest zero-order correlation with the dependent variables was entered first into the regression equation. In this case, norm-acceptance with a correlation of .41 was selected. Calculations were then performed on the remaining variables to determine their partial correlations with music involvement after removing the influence already accounted for by the norm-acceptance variable. Also, an F value was calculated for each variable to find whether or not it would add significantly to the prediction of music involvement if added to the equation.
The stepwise program provides for a prespecified \( F \) level to be set and no variable can be entered into the equation unless it exceeded this level. At each step all values were recalculated, and one variable was added to the regression equation. The variable added was the one which had the highest partial correlation with the dependent variable partialed on the variables which had already been added. This was the variable which, if added, would have the highest \( F \) value, providing it exceeded the prespecified \( F \) to enter.

At each step the program also examined the variables that were already in the equation, calculating the \( F \) value that each would have if it were entered last. The program provided for a prespecified level below which a variable would be removed from the regression equation.

After the norm-acceptance variable was selected at Step 1 and the recalculation were made, the introversion variable had the highest partial correlation and the highest \( F \) to enter (10.09). Consequently, the introversion variable was selected in Step 2. No further steps were added because no variable exceeded the \( F \) for entry. Taken together, the norm-acceptance and the introversion variables accounted for 23% of the variance in music involvement.

Table 8 summarizes the stepwise regression program for males.

The analysis of variance at Step 2 yielded an \( F \) value of 19.68 with 2 and 134 degrees of freedom and a probability of less than .0005.
Table 8

Summary of Stepwise Regression Program—
Hypothesis 2—Males

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable entered</th>
<th>Multiple correlation coefficient</th>
<th>Proportion of variance explained</th>
<th>Increase in $R^2$</th>
<th>$F$ to enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Norm-acceptance</td>
<td>.4109</td>
<td>.1689</td>
<td>.1689</td>
<td>27.4286</td>
</tr>
<tr>
<td>2</td>
<td>Introversion</td>
<td>.4765</td>
<td>.2271</td>
<td>.0582</td>
<td>10.0911</td>
</tr>
</tbody>
</table>

Table 9 shows the stepwise regression equation at Step 2. The data in Table 9 indicate that males who are less norm-accepting and less introverted tend to be more involved in music.

Table 9

Stepwise Regression Equation at Step 2—Hypothesis 2—Males
(Y-Intercept 41.224)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard error of Coefficient</th>
<th>Standard regression coefficient</th>
<th>Tolerance</th>
<th>$F$ to remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norm-acceptance</td>
<td>-.502</td>
<td>-.420</td>
<td>.99849</td>
<td>30.58</td>
</tr>
<tr>
<td>Introversion</td>
<td>-.257</td>
<td>-.241</td>
<td>.99849</td>
<td>10.09</td>
</tr>
</tbody>
</table>

Hypothesis Test for Females

The null hypothesis of no significant multiple correlation between the set of personality variables and the music involvement variable was tested for females by multiple linear regression.
The multiple correlation coefficient between the linear combination of the personality variables and the music involvement variable is .2845, and the variance explained by the personality variables is 8%. An analysis of variance for the multiple linear regression yielded an $F$ value of 4.669 with 3 and 159 degrees of freedom and a probability of .00373. Hence, the null hypothesis is rejected. There is a significant multiple correlation between the three personality variables and music involvement for females.

Table 10 presents the standard regression coefficients for each variable and their computed $t$ and probability values. A significant $t$ value denotes that the regression coefficient is truly different from zero in the population and the variable with which it is associated contributes significantly to the regression after the influence of the other predictors is taken into account.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized regression coefficient</th>
<th>Computed $t$ value</th>
<th>Probability value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>-.040</td>
<td>-.519</td>
<td>.604</td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>-.222</td>
<td>-2.887</td>
<td>.004*</td>
</tr>
<tr>
<td>Introversion</td>
<td>-.162</td>
<td>-2.132</td>
<td>.035*</td>
</tr>
</tbody>
</table>

*p < .05.

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Two of the $t$ values presented in the third column of Table 10 are significant beyond the .05 level. They indicate that the corresponding variable contributes significantly to the regression once the influence of the other independent variable has been taken into account. In this case, the variables of norm-acceptance and introversion are making a significant contribution to the obtained correlation. This indicates that females who are less norm-accepting and less introverted tend to be more involved in music. Results of testing Hypothesis 2 are noted as in complete agreement with those indicated in testing Hypothesis 1 for females.

Stepwise regression was performed to identify the specific contribution of each variable. The personality variable of norm-acceptance, with a correlation of .23, was entered into the regression equation first. Calculations were then performed on the remaining variables to determine their partial correlations with music involvement after removing the influence already accounted for by the norm-acceptance variable. The introversion personality variable had the highest partial correlation and $F$ to enter (4.44) and was selected in Step 2. No further steps were added because no other variable exceeded the $F$ for entry. Taken together, the norm-acceptance and introversion variables accounted for 7.94% of the variance in music involvement for females.

Table 11 summarizes the stepwise regression program for females.

The analysis of variance at Step 2 yielded an $F$ value of 6.90 with 2 and 160 degrees of freedom and a probability of .002.
Table 11
Summary of Stepwise Regression Program—Hypothesis 2—Females

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable entered</th>
<th>Multiple correlation coefficient</th>
<th>Proportion of variance explained</th>
<th>Increase in R squared</th>
<th>F to enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Norm-acceptance</td>
<td>.2320</td>
<td>.0538</td>
<td>.0538</td>
<td>9.1596</td>
</tr>
<tr>
<td>2</td>
<td>Introversion</td>
<td>.2818</td>
<td>.0794</td>
<td>.0256</td>
<td>4.4433</td>
</tr>
</tbody>
</table>

Table 12 shows the stepwise regression equation at Step 2. The data in Table 12 indicate that females who are less norm-accepting and less introverted tend to be more involved in music.

Table 12
Stepwise Regression Equation at Step 2—Hypothesis 2—Females
(Y-Intercept 32.027)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard error of coefficient</th>
<th>Standard regression coefficient</th>
<th>Tolerance</th>
<th>F to remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norm-acceptance</td>
<td>-.257</td>
<td>-.228</td>
<td>.99922</td>
<td>8.99</td>
</tr>
<tr>
<td>Introversion</td>
<td>-.148</td>
<td>-.160</td>
<td>.99922</td>
<td>4.44</td>
</tr>
</tbody>
</table>

Hypothesis 3

There are no significant differences among the personality centroids of those with different music style preferences.
Hypothesis Test for Males

The null hypothesis of no significant differences among the personality centroids of those with different music style preferences was tested for males by a one-way multivariate analysis of variance. This yielded an $F$ ratio of 1.5230 with 6 and 264 degrees of freedom and a probability of .1699. Hence, the null hypothesis was retained. There is no significant difference among the personality centroids of the male music style preference groups. The male music style preference group means are presented in Table 13.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Self-realization mean</th>
<th>Norm-acceptance mean</th>
<th>Introversion mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonrock</td>
<td>35</td>
<td>30.8000</td>
<td>21.7714</td>
<td>14.7714</td>
</tr>
<tr>
<td>Soft rock</td>
<td>41</td>
<td>31.4390</td>
<td>20.7073</td>
<td>14.7561</td>
</tr>
<tr>
<td>Hard rock</td>
<td>61</td>
<td>29.8197</td>
<td>18.6066</td>
<td>15.1803</td>
</tr>
</tbody>
</table>

Hypothesis Test for Females

The null hypothesis of no significant differences among the personality centroids of those with different music style preferences was tested for females by a one-way multivariate analysis of variance. This yielded an $F$ ratio of 3.2552 with 6 and 316 degrees of freedom and a probability of .0044. Hence, the null hypothesis is
rejected. There is a significant difference among the personality centroids of the female music style preference groups. The female music style preference group means are presented in Table 14.

Table 14
CPI Structural Scales Means for Female Music Style Preference Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Self-realization mean</th>
<th>Norm-acceptance mean</th>
<th>Introversion mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonrock</td>
<td>40</td>
<td>31.3250</td>
<td>20.5750</td>
<td>15.6750</td>
</tr>
<tr>
<td>Soft rock</td>
<td>83</td>
<td>31.6626</td>
<td>21.7470</td>
<td>16.8072</td>
</tr>
<tr>
<td>Hard rock</td>
<td>40</td>
<td>29.2250</td>
<td>17.9250</td>
<td>16.0250</td>
</tr>
</tbody>
</table>

Because the null hypothesis was rejected, discriminant analysis was added to further study the differences. Only the first discriminant function was found to be significant with an approximate chi square of 19.0707 with 6 degrees of freedom and a probability of .0040. Table 15 presents the group means on this first discriminant function.

The standard discriminant coefficients for discriminant Function I are shown in Table 16.

The personality variable that contributed the most in discriminating among the female music style preference groups is norm-acceptance. Figure 3 places the music style preference group means on the function. Again, the arrows pointing to the right indicate increasing scores on the labeled variables.
Table 15
Group Means: Discriminant Function—Hypothesis 3—Females

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonrock</td>
<td>27.342</td>
</tr>
<tr>
<td>Soft rock</td>
<td>28.691</td>
</tr>
<tr>
<td>Hard rock</td>
<td>24.449</td>
</tr>
</tbody>
</table>

Table 16
Discriminant Analysis Function I—Hypothesis 3—Females

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard discriminant function coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>16.8423</td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>58.1501</td>
</tr>
<tr>
<td>Introversion</td>
<td>9.8867</td>
</tr>
</tbody>
</table>

Figure 3. Discrimination Among Female Music Style Preference Groups.
The discriminant function indicates that the further to the right on this function, the more norm-accepting the female subjects tend to be. That is, there is a tendency for females with a preference for hard rock to be less norm-accepting than those preferring nonrock or soft rock.

**Hypothesis 4**

There are no significant differences among the personality centroids of those who use music for different major purposes.

**Hypothesis Test for Males**

The null hypothesis of no significant differences among the personality centroids of those who use music for different major purposes was tested for males by a one-way multivariate analysis of variance. This yielded an $F$ ratio of 1.1232 with 18 and 359.6953 degrees of freedom and a probability of .3266. Hence, the null hypothesis is retained. There is no significant difference among the personality centroids of the males who use music for different major purposes.

The male music uses group means are presented in Table 17.

**Hypothesis Test for Females**

The null hypothesis of no significant difference among the personality centroids of those who use music for different major purposes was tested for females by a one-way multivariate analysis of variance. This yielded an $F$ ratio of 1.4478 with 18 and 436 degrees
Table 17
CPI Structural Scales Means for Male Music Use Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Self-realization mean</th>
<th>Norm-acceptance mean</th>
<th>Introversion mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>11</td>
<td>25.1818</td>
<td>19.2727</td>
<td>16.5454</td>
</tr>
<tr>
<td>Boredom</td>
<td>9</td>
<td>31.5555</td>
<td>22.2222</td>
<td>17.0000</td>
</tr>
<tr>
<td>Lyrics</td>
<td>11</td>
<td>34.0909</td>
<td>17.7273</td>
<td>14.0000</td>
</tr>
<tr>
<td>Mood</td>
<td>26</td>
<td>31.3846</td>
<td>21.4231</td>
<td>13.4615</td>
</tr>
<tr>
<td>Relaxation</td>
<td>22</td>
<td>29.5000</td>
<td>19.5454</td>
<td>14.5909</td>
</tr>
<tr>
<td>Expression</td>
<td>18</td>
<td>31.5000</td>
<td>18.0000</td>
<td>15.2222</td>
</tr>
<tr>
<td>Company</td>
<td>39</td>
<td>30.6410</td>
<td>20.7692</td>
<td>15.2564</td>
</tr>
</tbody>
</table>

of freedom and a probability of .1049. Hence, the null hypothesis is retained. There is no significant difference among the personality centroids of the females who use music for different major purposes.

The female music uses group means are presented in Table 18.

Hypothesis 5

There is no significant canonical correlation between the set of personality variables and the set of music enjoyment variables.

Hypothesis Test for Males

The null hypothesis of no significant canonical correlation between the set of personality variables (self-realization, norm-acceptance, introversion) and the set of music enjoyment (preference)
Table 18

CPI Structural Scales Means for Female Music Use Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Self-realization mean</th>
<th>Norm-acceptance mean</th>
<th>Introversion mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>18</td>
<td>28.7778</td>
<td>19.8333</td>
<td>15.4444</td>
</tr>
<tr>
<td>Boredom</td>
<td>7</td>
<td>30.7143</td>
<td>17.5714</td>
<td>16.4286</td>
</tr>
<tr>
<td>Lyrics</td>
<td>15</td>
<td>27.6667</td>
<td>17.6667</td>
<td>15.2667</td>
</tr>
<tr>
<td>Mood</td>
<td>28</td>
<td>34.3929</td>
<td>19.8214</td>
<td>15.8929</td>
</tr>
<tr>
<td>Relaxation</td>
<td>17</td>
<td>30.7059</td>
<td>23.1765</td>
<td>16.8823</td>
</tr>
<tr>
<td>Expression</td>
<td>23</td>
<td>31.0869</td>
<td>21.7826</td>
<td>16.6956</td>
</tr>
<tr>
<td>Company</td>
<td>55</td>
<td>30.9454</td>
<td>20.9091</td>
<td>16.8182</td>
</tr>
</tbody>
</table>

variables (classical, jazz, hard rock, country, contemporary Christian/gospel, soft rock, heavy metal, soul/rhythm and blues, and folk) was tested for males by canonical correlation analysis.

Canonical correlation is a statistical analysis to find the linear combination of the variables of Set 1 and the linear combination of the variables of Set 2 such that the correlation between these two combinations of variables is maximized. Canonical correlation analysis yields a correlation $R_c$ and also a set of regression weights for each group of variables. These weights are used to determine which of the two sets of variables are more closely associated. The square of the canonical correlation coefficient is an estimate of the variance shared by the two composites.
In canonical correlation analysis there can be more than one set of equations. The method extracts the first and largest source of variance, yielding the canonical correlation coefficient which is an index of the relation between the two composites based on this largest source of variance. Then the next greatest source of variance, left in the data after the first source is extracted and independent of the first source, is analyzed. This second canonical correlation is smaller than the first and indicates the relation between the two sets of variables due to the second source of variance. This process continues for as many sets of equations as there are variables in the smaller set.

Table 19 presents the significance tests for the three canonical functions.

Table 19

<p>| Canonical Correlation Between the Personality Variables and the Music Enjoyment Variables--Males |
|---------------------------------------------------------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical correlation coefficient</th>
<th>Approximate chi square</th>
<th>df</th>
<th>Probability values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.46431</td>
<td>60.10</td>
<td>27</td>
<td>.00026*</td>
</tr>
<tr>
<td>2</td>
<td>.38423</td>
<td>28.66</td>
<td>16</td>
<td>.02636*</td>
</tr>
<tr>
<td>3</td>
<td>.24431</td>
<td>7.97</td>
<td>7</td>
<td>.33527</td>
</tr>
</tbody>
</table>

*p < .05.

The data in Table 19 indicate that there are two canonical correlations significant at the .05 level. The null hypothesis is,
therefore, rejected. These findings indicate that personality is significantly related to music enjoyment (preference) for males. The correlation between the two sets on the first canonical function is .4643.

As mentioned previously, canonical correlation analysis also yields the weights associated with each of the variables constituting the pair of equations for each function. Table 20 presents the first function weights associated with the set of personality variables and the set of music enjoyment (preference) variables. A plus (+) or a minus (−) in the table indicates a positive or negative weight in the canonical function.

As with discriminate analysis, it is common practice to note those variables in each set whose weights are approximately one half of the maximum weight in that set.

The weights presented in Table 20 indicate that males who are more norm-accepting and more introverted tend to have greater preference for contemporary Christian/gospel music, less preference for hard rock music, more preference for country music, less preference for heavy metal and soul music, and more preference for folk music.

Table 21 presents the second function weights associated with the set of personality variables and the set of music enjoyment (preference) variables.

The weights presented in Table 21 indicate that males who are more introverted and less self-realized tend to have less preference for jazz music, classical music, folk music, soft rock music; more
Table 20

First Canonical Function Weights Associated With the Set of Personality Variables and the Set of Music Enjoyment (Preference) Variables—Males

<table>
<thead>
<tr>
<th>Personality variables</th>
<th>Weight</th>
<th>Rank</th>
<th>Music enjoyment variables</th>
<th>Weight</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>+.232</td>
<td></td>
<td>Classical</td>
<td>+.139</td>
<td></td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>+.882</td>
<td>1</td>
<td>Jazz</td>
<td>-.247</td>
<td></td>
</tr>
<tr>
<td>Introversion</td>
<td>+.376</td>
<td>2</td>
<td>Hard rock</td>
<td>-.551</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Country</td>
<td>+.464</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Contemporary Christian/ gospel</td>
<td>+.820</td>
<td>1</td>
</tr>
<tr>
<td>Soft rock</td>
<td>+.065</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy metal</td>
<td>-.461</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soul/rhythm and blues</td>
<td>-.380</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folk</td>
<td>+.380</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preference for heavy metal music; and less preference for country and soul/rhythm and blues music.

Hypothesis Test for Females

The null hypothesis of no significant canonical correlation between the set of personality variables and the set of music enjoyment (preference) variables was tested for females by canonical correlation analysis.
Table 21

Second Canonical Function Weights Associated With the Set of Personality Variables and the Set of Music Enjoyment (Preference) Variables—Males

<table>
<thead>
<tr>
<th>Personality variables</th>
<th>Weight</th>
<th>Rank</th>
<th>Music enjoyment variables</th>
<th>Weight</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>-.724</td>
<td>2</td>
<td>Classical</td>
<td>-.537</td>
<td>2</td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>-.191</td>
<td>1</td>
<td>Jazz</td>
<td>-.590</td>
<td>1</td>
</tr>
<tr>
<td>Introversion</td>
<td>+.767</td>
<td>1</td>
<td>Hard rock</td>
<td>+.197</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Country</td>
<td>-.402</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Contemporary Christian/gospel</td>
<td>+.137</td>
<td></td>
</tr>
<tr>
<td>Soft rock</td>
<td>-.437</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy metal</td>
<td>+.409</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soul/rhythm and blues</td>
<td>-.258</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folk</td>
<td>-.463</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 22 presents the significance tests for the three canonical functions. Column 4 of the table shows that all probability values are greater than .05. Because no linear combination of variables proved significant, the null hypothesis is retained.

**Hypothesis 6**

There is no significant canonical correlation between the set of personality variables and the set of music uses variables.
Table 22
Canonical Correlation Between the Set of Personality Variables and the Set of Music Enjoyment (Preference) Variables—Females

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical correlation coefficient</th>
<th>Approximate chi square</th>
<th>df</th>
<th>Probability values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.32607</td>
<td>39.47</td>
<td>27</td>
<td>.05744</td>
</tr>
<tr>
<td>2</td>
<td>.31435</td>
<td>21.99</td>
<td>16</td>
<td>.14366</td>
</tr>
<tr>
<td>3</td>
<td>.19144</td>
<td>5.81</td>
<td>7</td>
<td>.56258</td>
</tr>
</tbody>
</table>

Hypothesis Test for Males

The null hypothesis of no significant canonical correlation between the set of personality variables and the set of music uses variables was tested for males by canonical correlation analysis.

Table 23 presents the significance tests for the three canonical functions. Column 4 of the table shows that all probability values are greater than .05. Because no linear combination of variables proved significant, the null hypothesis is retained. There is no significant canonical correlation between the set of personality variables and the set of music uses variables for males.

Hypothesis Test for Females

The null hypothesis of no significant canonical correlation between the set of personality variables and the set of music uses variables was tested for females by canonical correlation analysis.
Table 23
Canonical Correlation Between the Set of Personality Variables and the Set of Music Uses Variables—Males

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical correlation coefficient</th>
<th>Approximate chi square</th>
<th>df</th>
<th>Probability values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.24016</td>
<td>19.89</td>
<td>21</td>
<td>.52839</td>
</tr>
<tr>
<td>2</td>
<td>.23857</td>
<td>12.14</td>
<td>12</td>
<td>.43487</td>
</tr>
<tr>
<td>3</td>
<td>.18386</td>
<td>4.49</td>
<td>5</td>
<td>.48149</td>
</tr>
</tbody>
</table>

Table 24 presents the significance tests for the three canonical functions. Column 4 of the table shows that all probability values are greater than .05. Because no linear combination of variables proved significant, the null hypothesis is retained. There is no significant canonical correlation between the set of personality variables and the set of music uses variables for females.

Table 24
Canonical Correlation Between the Set of Personality Variables and the Set of Music Uses Variables—Females

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical correlation coefficient</th>
<th>Approximate chi square</th>
<th>df</th>
<th>Probability values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.31551</td>
<td>24.22</td>
<td>21</td>
<td>.28266</td>
</tr>
<tr>
<td>2</td>
<td>.18609</td>
<td>7.81</td>
<td>12</td>
<td>.80006</td>
</tr>
<tr>
<td>3</td>
<td>.12054</td>
<td>2.29</td>
<td>5</td>
<td>.80763</td>
</tr>
</tbody>
</table>
Hypothesis 7

There is no significant canonical correlation between the set of personality variables and the combined music variables.

Hypothesis Test for Males

The null hypothesis of no significant canonical correlation between the set of personality variables and the set of combined music variables (music uses, music enjoyment, and music involvement) was tested for males by canonical correlation analysis. The music involvement variable represented each subject's total music involvement score on the involvement scale of the Music Preference and Interest Questionnaire.

Table 25 presents the significance tests for the three canonical functions.

Table 25
Canonical Correlation Between the Personality Variables and the Combined Music Variable—Males

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical Correlation Coefficient</th>
<th>Approximate Chi Square</th>
<th>df</th>
<th>Probability Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.59509</td>
<td>96.51</td>
<td>51</td>
<td>.00012*</td>
</tr>
<tr>
<td>2</td>
<td>.44950</td>
<td>41.64</td>
<td>32</td>
<td>.11834</td>
</tr>
<tr>
<td>3</td>
<td>.31727</td>
<td>13.32</td>
<td>15</td>
<td>.57798</td>
</tr>
</tbody>
</table>

*p < .05.
The first canonical function yielded an approximate chi square of 96.51 with 51 degrees of freedom and a probability of .00012. Hence, the null hypothesis is rejected. There is a significant relationship between the set of personality variables and the set of combined music variables. The correlation between the two sets is .59509.

Table 26 presents the first function weights associated with the set of personality variables and the set of combined music variables. Again, a plus (+) or a minus (-) indicates a positive or a negative weight in the canonical function.

The weights presented in Table 26 indicate that males who are more norm-accepting and introverted are less involved with music and tend to have a greater preference for contemporary Christian/gospel music, less preference for hard rock and soul music, and are less likely to use music as a means of self-expression.

**Hypothesis Test for Females**

The null hypothesis of no significant canonical correlation between the set of personality variables and the set of combined music variables was tested for females by canonical correlation analysis. The music involvement variable represented each subject's total music involvement score on the involvement scale of the Music Preference and Interest Questionnaire.

Table 27 presents the significance tests for the three canonical functions.
Table 26
Canonical Function Weights Associated With the Set of Personality Variables and the Set of Combined Music Variables--Males

<table>
<thead>
<tr>
<th>Personality variables</th>
<th>Weight</th>
<th>Rank</th>
<th>Combined music variables</th>
<th>Weight</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>+.047</td>
<td></td>
<td>Classical</td>
<td>+.023</td>
<td></td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>+.828</td>
<td>1</td>
<td>Jazz</td>
<td>-.270</td>
<td></td>
</tr>
<tr>
<td>Introversion</td>
<td>+.524</td>
<td>2</td>
<td>Hard rock</td>
<td>-.392</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Country</td>
<td>+.296</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gospel</td>
<td>+.643</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soft rock</td>
<td>-.016</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Heavy metal</td>
<td>-.292</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soul</td>
<td>-.330</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Folk</td>
<td>+.218</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Escape</td>
<td>-.073</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Boredom</td>
<td>+.002</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lyrics</td>
<td>-.083</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mood</td>
<td>-.091</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Relaxation</td>
<td>+.032</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Expression</td>
<td>-.344</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Company</td>
<td>-.024</td>
<td></td>
</tr>
<tr>
<td>Involvement (total)</td>
<td>-.795</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 27 indicates the first canonical function yielded an approximate chi square of 71.06 with 51 degrees of freedom and a probability of .03310. Hence, the null hypothesis is rejected. There is a significant relationship between the set of personality variables and the set of combined music variables. The correlation between the two sets is .48137.

Table 27

Canonical Correlation Between the Personality Variables and the Combined Music Variables—Females

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical correlation coefficient</th>
<th>Approximate chi square</th>
<th>df</th>
<th>Probability values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.48137</td>
<td>71.06</td>
<td>51</td>
<td>.03310*</td>
</tr>
<tr>
<td>2</td>
<td>.34877</td>
<td>31.12</td>
<td>32</td>
<td>.51072</td>
</tr>
<tr>
<td>3</td>
<td>.27008</td>
<td>11.47</td>
<td>15</td>
<td>.71829</td>
</tr>
</tbody>
</table>

*p < .05.

Table 28 presents the first function weights associated with the set of personality variables and the set of combined music variables. Again, a plus (+) or a minus (−) indicates a positive or a negative weight in the canonical function.

The weights presented in Table 28 indicate that females who are more norm-accepting, more self-realized, and more introverted tend to be less involved with music and to be more likely to use music for
Table 28
Canonical Function Weights Associated With the Set of Personality Variables and the Set of Combined Music Variables—Females

<table>
<thead>
<tr>
<th>Personality variables</th>
<th>Weight</th>
<th>Rank</th>
<th>Combined music variables</th>
<th>Weight</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-realization</td>
<td>.458</td>
<td>2</td>
<td>Classical</td>
<td>.170</td>
<td></td>
</tr>
<tr>
<td>Norm-acceptance</td>
<td>.849</td>
<td>1</td>
<td>Jazz</td>
<td>-.114</td>
<td></td>
</tr>
<tr>
<td>Introversion</td>
<td>.404</td>
<td>3</td>
<td>Hard rock</td>
<td>-.388</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Country</td>
<td>.084</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gospel</td>
<td>.335</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soft rock</td>
<td>.174</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Heavy metal</td>
<td>-.540</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soul</td>
<td>-.218</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Folk</td>
<td>.197</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Escape</td>
<td>-.257</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Boredom</td>
<td>-.038</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lyrics</td>
<td>-.294</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mood</td>
<td>.165</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Relaxation</td>
<td>.492</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Expression</td>
<td>-.131</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Company</td>
<td>.069</td>
<td></td>
</tr>
<tr>
<td>Involvement (total)</td>
<td></td>
<td></td>
<td></td>
<td>-.566</td>
<td>1</td>
</tr>
</tbody>
</table>
relaxation and to have less preference for heavy metal and hard rock music and more preference for contemporary Christian/gospel music.

Hypothesis 8

There is no significant canonical correlation between the set of music enjoyment (preference) variables and the set of music uses variables.

Hypothesis Test for Males

The null hypothesis of no significant canonical correlation between the set of music enjoyment (preference) variables and the set of music uses variables was tested for males by canonical correlation analysis. The music enjoyment (preference) variables represent each subject's indicated degree of enjoyment for the nine music styles and the music uses variables represent each subject's selection of music uses that applied to them from among the total seven music uses on the Music Preference and Interest Questionnaire.

Table 29 presents the significance tests for the seven canonical functions.

Table 29 indicates that the first canonical function yielded an approximate chi square of 94.78 with 63 degrees of freedom and a probability of .00593. Hence, the null hypothesis is rejected. There is a significant relationship between the set of music enjoyment (preference) variables and the set of music uses variables. The correlation between the two sets is .45646.
Table 29

Canonical Correlation Between the Music Uses Variables
and the Music Enjoyment (Preference)
Variables—Males

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical correlation coefficient</th>
<th>Approximate chi square</th>
<th>df</th>
<th>Probability values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.45646</td>
<td>94.78</td>
<td>63</td>
<td>.00593*</td>
</tr>
<tr>
<td>2</td>
<td>.42379</td>
<td>64.99</td>
<td>48</td>
<td>.05161</td>
</tr>
<tr>
<td>3</td>
<td>.39448</td>
<td>39.75</td>
<td>35</td>
<td>.26683</td>
</tr>
<tr>
<td>4</td>
<td>.27365</td>
<td>18.18</td>
<td>24</td>
<td>.79420</td>
</tr>
<tr>
<td>5</td>
<td>.20812</td>
<td>8.26</td>
<td>15</td>
<td>.91312</td>
</tr>
<tr>
<td>6</td>
<td>.11680</td>
<td>2.61</td>
<td>8</td>
<td>.95640</td>
</tr>
<tr>
<td>7</td>
<td>.08193</td>
<td>0.86</td>
<td>3</td>
<td>.83538</td>
</tr>
</tbody>
</table>

*p < .05.

Table 30 presents the first function weights associated with the set of music enjoyment (preference) variables and the set of music uses variables. Again, a plus (+) or a minus (−) indicates a positive or a negative weight in the canonical function.

The weights presented in Table 30 indicate that males who use music to keep themselves company, to relieve boredom, and for relaxation tend to have less preference for classical music, greater preference for soft rock music, and less preference for jazz music.
Table 30

Canonical Function Weights Associated With the Set of Music Uses Variables and the Set of Music Enjoyment (Preference) Variables—Males

<table>
<thead>
<tr>
<th>Music use variable</th>
<th>Weight</th>
<th>Rank</th>
<th>Music enjoyment variable</th>
<th>Weight</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>-.294</td>
<td></td>
<td>Classical</td>
<td>-.689</td>
<td>1</td>
</tr>
<tr>
<td>Boredom</td>
<td>+.684</td>
<td>2</td>
<td>Jazz</td>
<td>-.346</td>
<td>3</td>
</tr>
<tr>
<td>Lyrics</td>
<td>-.256</td>
<td></td>
<td>Hard rock</td>
<td>+.055</td>
<td></td>
</tr>
<tr>
<td>Mood</td>
<td>+.014</td>
<td></td>
<td>Country</td>
<td>-.071</td>
<td></td>
</tr>
<tr>
<td>Relaxation</td>
<td>+.392</td>
<td>3</td>
<td>Gospel</td>
<td>-.100</td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td>-.304</td>
<td>3</td>
<td>Soft rock</td>
<td>+.557</td>
<td>2</td>
</tr>
<tr>
<td>Company</td>
<td>+.787</td>
<td>1</td>
<td>Heavy metal</td>
<td>-.171</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soul</td>
<td>-.187</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Folk</td>
<td>-.211</td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis Test for Females

The null hypothesis of no significant canonical correlation between the set of music enjoyment (preference) variables and the set of music uses variables was tested for females by canonical correlation analysis. The music enjoyment (preference) variables represent each subject's indicated degree of enjoyment for each of the nine music styles on the Music Preference and Interest Questionnaire. The music uses variables represent each subject's selection of music uses that applied to them from among the total seven music uses on the
Music Preference and Interest Questionnaire.

Table 31 presents the significance test for the seven canonical functions.

Table 31
Canonical Correlation Between the Music Uses Variables and the Music Enjoyment (Preference) Variables—Females

<table>
<thead>
<tr>
<th>Function</th>
<th>Canonical correlation coefficient</th>
<th>Approximate chi square</th>
<th>df</th>
<th>Probability values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.50072</td>
<td>110.57</td>
<td>63</td>
<td>.00020*</td>
</tr>
<tr>
<td>2</td>
<td>.46083</td>
<td>66.26</td>
<td>48</td>
<td>.04134*</td>
</tr>
<tr>
<td>3</td>
<td>.31302</td>
<td>29.62</td>
<td>35</td>
<td>.72532</td>
</tr>
<tr>
<td>4</td>
<td>.22057</td>
<td>13.79</td>
<td>24</td>
<td>.95128</td>
</tr>
<tr>
<td>5</td>
<td>.14038</td>
<td>6.13</td>
<td>15</td>
<td>.97743</td>
</tr>
<tr>
<td>6</td>
<td>.11644</td>
<td>3.08</td>
<td>8</td>
<td>.92940</td>
</tr>
<tr>
<td>7</td>
<td>.07986</td>
<td>0.98</td>
<td>3</td>
<td>.80556</td>
</tr>
</tbody>
</table>

*p < .05.

The data in Table 31 indicate that there are two canonical correlations significant at the .05 level. Hence, the null hypothesis is rejected. These findings indicate that music enjoyment (preference) is significantly related to music uses for females.

The first canonical function yielded an approximate chi square of 110.57 with 63 degrees of freedom and a probability of .00020. The correlation between the two sets is .50072. The second canonical
function yielded an approximate chi square of 66.26 with 48 degrees of freedom and a probability of .04134. The correlation between the two sets on the second canonical function is .46083.

Table 32 presents the first function weights associated with the set of music uses variables and the set of music enjoyment (preference) variables. Again, a plus (+) or a minus (-) indicates a positive or a negative weight in the canonical function.

The weights presented in Table 32 indicate that females who use music more to relieve boredom and less for relaxation tend to have less preference for jazz and country music.

Table 32
First Canonical Function Weights Associated With the Set of Music Uses Variables and the Set of Music Enjoyment (Preference) Variables—Females

<table>
<thead>
<tr>
<th>Music uses variable</th>
<th>Weight</th>
<th>Rank</th>
<th>Music enjoyment variable</th>
<th>Weight</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>+.118</td>
<td></td>
<td>Classical</td>
<td>-.258</td>
<td></td>
</tr>
<tr>
<td>Boredom</td>
<td>+.581</td>
<td>1</td>
<td>Jazz</td>
<td>-.758</td>
<td>1</td>
</tr>
<tr>
<td>Lyrics</td>
<td>+.207</td>
<td></td>
<td>Hard rock</td>
<td>+.184</td>
<td></td>
</tr>
<tr>
<td>Mood</td>
<td>+.017</td>
<td></td>
<td>Country</td>
<td>-.414</td>
<td>2</td>
</tr>
<tr>
<td>Relaxation</td>
<td>-.541</td>
<td>2</td>
<td>Gospel</td>
<td>-.019</td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td>+.193</td>
<td></td>
<td>Soft rock</td>
<td>-.299</td>
<td></td>
</tr>
<tr>
<td>Company</td>
<td>-.153</td>
<td></td>
<td>Heavy metal</td>
<td>+.264</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soul</td>
<td>+.106</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Folk</td>
<td>-.202</td>
<td></td>
</tr>
</tbody>
</table>
Table 33 presents the second canonical function weights associated with the set of music uses variables and the set of music enjoyment (preference) variables for females.

Table 33
Second Canonical Function Weights Associated With the Set of Music Uses Variables and the Set of Music Enjoyment (Preference) Variables—Females

<table>
<thead>
<tr>
<th>Music uses variable</th>
<th>Weight</th>
<th>Rank</th>
<th>Music enjoyment variable</th>
<th>Weight</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>+.172</td>
<td></td>
<td>Classical</td>
<td>+.696</td>
<td>1</td>
</tr>
<tr>
<td>Boredom</td>
<td>-.236</td>
<td></td>
<td>Jazz</td>
<td>+.129</td>
<td></td>
</tr>
<tr>
<td>Lyrics</td>
<td>+.781</td>
<td>1</td>
<td>Hard rock</td>
<td>+.133</td>
<td></td>
</tr>
<tr>
<td>Mood</td>
<td>+.361</td>
<td>3</td>
<td>Country</td>
<td>+.008</td>
<td></td>
</tr>
<tr>
<td>Relaxation</td>
<td>+.279</td>
<td></td>
<td>Gospel</td>
<td>-.021</td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td>+.591</td>
<td>2</td>
<td>Soft rock</td>
<td>-.372</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Heavy metal</td>
<td>-.196</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soul</td>
<td>+.092</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Folk</td>
<td>+.565</td>
<td>2</td>
</tr>
</tbody>
</table>

The weights presented in Table 33 indicate that females who use music more to understand themselves and the world better by listening to the lyrics and more as a means of self-expression and mood alteration tend to have greater preference for classical and folk music and less preference for soft rock music.
Hypothesis 9

There is no significant multiple correlation between the music uses variables and music involvement.

Hypothesis Test for Males

The null hypothesis of no significant multiple correlation between the music uses variables and music involvement was tested for males by multiple linear regression.

The multiple correlation coefficient between the linear combination of the music uses variables and the music involvement variable is .2216 and the variance explained by the music uses variables is 5%. An analysis of variance for the multiple linear regression yielded an $F$ value of .952 with 7 and 129 degrees of freedom and a probability of .46918. Hence, the null hypothesis is retained. There is no significant multiple correlation between the music uses variables and music involvement for males.

Stepwise regression was attempted but the tolerance was insufficient for any step to be taken.

Hypothesis Test for Females

The null hypothesis of no significant multiple correlation between the music uses variables and music involvement was tested for females by multiple linear regression.

The multiple correlation coefficient between the linear combination of the music uses variables and the music involvement variable
is .3656, and the variance explained by the music uses variables is 13.36%. An analysis of variance for the multiple linear regression yielded an $F$ value of 3.416 with 7 and 155 degrees of freedom and a probability of .00201. Hence, the null hypothesis is rejected.

There is a significant multiple correlation between the music uses variables and the music involvement variable for females.

Table 34 presents the regression coefficients for each variable and their computed $t$ and probability values. A significant $t$ denotes that the regression coefficient is truly different from zero in the population and that the variable with which it is associated contributes significantly to the regression after the influence of the other predictors is taken into account.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized regression coefficient</th>
<th>Computed $t$ value</th>
<th>Probability value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>.068</td>
<td>0.817</td>
<td>.415</td>
</tr>
<tr>
<td>Boredom</td>
<td>.012</td>
<td>0.140</td>
<td>.888</td>
</tr>
<tr>
<td>Lyrics</td>
<td>.109</td>
<td>1.276</td>
<td>.204</td>
</tr>
<tr>
<td>Mood</td>
<td>-.079</td>
<td>-1.044</td>
<td>.298</td>
</tr>
<tr>
<td>Relaxation</td>
<td>.089</td>
<td>1.157</td>
<td>.249</td>
</tr>
<tr>
<td>Expression</td>
<td>.190</td>
<td>2.087</td>
<td>.039*</td>
</tr>
<tr>
<td>Company</td>
<td>-.196</td>
<td>-2.462</td>
<td>.015*</td>
</tr>
</tbody>
</table>

*p < .05.
Two of the \( r \) values presented in the third column of Table 34 are significant beyond the .05 level. They indicate that the corresponding variable contributes significantly to the regression once the influence of the other independent variables have been taken into account. In this case, the music use variables of self-expression and company are making a significant contribution to the obtained correlation. This indicates that females who use music less to keep themselves company and more as a means of self-expression of thoughts and feelings tend to be more involved with music.

Stepwise regression was performed to identify the specific contribution of each variable. The music use variable of self-expression, with a correlation of .27, was entered into the regression equation first. Calculations were then performed on the remaining variables to determine their partial correlations with music involvement after removing the influence already accounted for by the self-expression variable. The music use variable of company had the highest partial correlation and \( F \) to enter (5.83) and was selected in Step 2. No further steps were added because no variable exceeded the \( F \) for entry. Taken together, the self-expression and company variables accounted for 10.73% of the variance in music involvement for females.

Table 35 summarizes the stepwise regression program for females.

The analysis of variance at Step 2 yielded an \( F \) value of 9.61 with 2 and 160 degrees of freedom and a probability less than .0005.

Table 36 shows the regression equation at Step 2. The data in Table 36 indicate that females who use music less to keep themselves...
company and more as a means of self-expression tend to be more involved with music.

**Table 35**

Summary of Stepwise Regression Program—
Hypothesis 9—Females

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable entered</th>
<th>Multiple correlation coefficient</th>
<th>Proportion of variance explained</th>
<th>Increase in R squared</th>
<th>F to enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Expression</td>
<td>.2734</td>
<td>.0748</td>
<td>.0748</td>
<td>13.0102</td>
</tr>
<tr>
<td>2</td>
<td>Company</td>
<td>.3275</td>
<td>.1073</td>
<td>.0325</td>
<td>5.8286</td>
</tr>
</tbody>
</table>

**Table 36**

Variables in Stepwise Regression Equation at Step 2—
Hypothesis 9—Females
(Y Intercept 26.136)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard error of coefficient</th>
<th>Standard regression coefficient</th>
<th>Tolerance</th>
<th>F to remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expression</td>
<td>2.809</td>
<td>0.836</td>
<td>.253</td>
<td>.98686</td>
<td>11.29</td>
</tr>
<tr>
<td>Company</td>
<td>-3.596</td>
<td>1.490</td>
<td>-.182</td>
<td>.98686</td>
<td>5.83</td>
</tr>
</tbody>
</table>

**Hypothesis 10**

There is no significant multiple correlation between the music enjoyment (preference) variables and music involvement.
Hypothesis Test for Males

The null hypothesis of no significant multiple correlation between the music enjoyment (preference) variables and music involvement was tested for males by multiple linear regression.

The multiple correlation coefficient between the linear combination of the music enjoyment (preference) variables and the music involvement variable is .4835, and the variance explained by the music enjoyment (preference) variables is 23%. An analysis of variance for the multiple linear regression yielded an F value of 4.305 with 9 and 127 degrees of freedom and a probability of .00007. Hence, the null hypothesis is rejected. There is a significant multiple correlation between the music enjoyment (preference) variables and music involvement for males.

Table 37 presents the standard regression coefficients for each variable and their computed t and probability values. A significant t denotes that the regression coefficient is truly different from zero in the population and that the variable with which it is associated contributes significantly to the regression after the influence of the other predictors is taken into account.

One of the t values presented in the third column of Table 37 is significant beyond the .05 level. This t value indicates that the corresponding variable contributes significantly to the regression once the influence of the other independent variables have been taken into account. In this case, the music enjoyment (preference) variable of contemporary Christian/gospel music is making a significant
Table 37
Standardized Regression Coefficients Associated With the Variables—Males

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized regression coefficient</th>
<th>Computed t value</th>
<th>Probability value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical</td>
<td>.107</td>
<td>1.144</td>
<td>.255</td>
</tr>
<tr>
<td>Jazz</td>
<td>.153</td>
<td>1.630</td>
<td>.106</td>
</tr>
<tr>
<td>Hard rock</td>
<td>.099</td>
<td>0.839</td>
<td>.403</td>
</tr>
<tr>
<td>Country</td>
<td>-.156</td>
<td>-1.748</td>
<td>.083</td>
</tr>
<tr>
<td>Contemporary Christian/gospel</td>
<td>-.212</td>
<td>-2.252</td>
<td>.026*</td>
</tr>
<tr>
<td>Soft rock</td>
<td>-.051</td>
<td>-0.602</td>
<td>.548</td>
</tr>
<tr>
<td>Heavy metal</td>
<td>.096</td>
<td>0.859</td>
<td>.392</td>
</tr>
<tr>
<td>Soul/Rhythm and Blues</td>
<td>.143</td>
<td>1.502</td>
<td>.136</td>
</tr>
<tr>
<td>Folk</td>
<td>-.009</td>
<td>-0.091</td>
<td>.927</td>
</tr>
</tbody>
</table>

*p < .05.

contribution to the obtained correlation. This indicates that males who have less preference for contemporary Christian/gospel music tend to be more involved with music.

Stepwise regression was performed to identify the specific contribution of each variable. The contemporary Christian/gospel music enjoyment (preference) variable, with a correlation of .34, was entered first into the regression equation. Calculations were then performed on the remaining variables to determine their partial
correlations with music involvement after removing the influence already accounted for by the contemporary Christian/gospel music enjoyment (preference) variable.

After the contemporary Christian/gospel music enjoyment (preference) variable was selected at Step 1 and the recalculations were made, the jazz music enjoyment (preference) variable had the highest partial correlation and the highest $F$ to enter (7.87). Consequently, the jazz music enjoyment (preference) variable was selected in Step 2. The country music enjoyment (preference) variable, with an $F$ to enter of 4.83, was selected in Step 3. No further steps were added because no music enjoyment (preference) variables exceeded the $F$ for entry. Taken together, the contemporary Christian/gospel, jazz, and country music enjoyment (preference) variables accounted for 19.49% of the variance in music involvement for males.

Table 38 summarizes the stepwise regression program for males.

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable entered</th>
<th>Multiple correlation coefficient</th>
<th>Proportion of variance explained</th>
<th>Increase in $R^2$</th>
<th>$F$ to enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Contemporary Christian/gospel</td>
<td>.3415</td>
<td>.1166</td>
<td>.1166</td>
<td>17.8215</td>
</tr>
<tr>
<td>2</td>
<td>Jazz</td>
<td>.4070</td>
<td>.1656</td>
<td>.0490</td>
<td>7.8702</td>
</tr>
<tr>
<td>3</td>
<td>Country</td>
<td>.4415</td>
<td>.1949</td>
<td>.0293</td>
<td>4.8332</td>
</tr>
</tbody>
</table>
The analysis of variance at Step 3 yielded an $F$ value of 10.73 with 3 and 133 degrees of freedom and a probability less than .0005.

Table 39 shows the stepwise regression equation at Step 3. The data in Table 39 indicate that males with less preference for contemporary Christian/gospel and country music and more preference for jazz music tend to be more involved with music.

Table 39

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard error of coefficient</th>
<th>Standard regression coefficient</th>
<th>Tolerance</th>
<th>$F$ to remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jazz</td>
<td>1.609</td>
<td>.554</td>
<td>.226</td>
<td>.99883</td>
<td>8.42</td>
</tr>
<tr>
<td>Country</td>
<td>-1.297</td>
<td>.590</td>
<td>-.180</td>
<td>.90331</td>
<td>4.83</td>
</tr>
<tr>
<td>Gospel</td>
<td>-2.083</td>
<td>.587</td>
<td>-.291</td>
<td>.90380</td>
<td>12.61</td>
</tr>
</tbody>
</table>

**Hypothesis Test for Females**

The null hypothesis of no significant multiple correlation between the music enjoyment (preference) variables and music involvement was tested for females by multiple linear regression.

The multiple correlation coefficient between the linear combination of the music enjoyment (preference) variables and the music involvement variable is .3663, and the variance explained by the music enjoyment (preference) variables is 13.42%. An analysis of variance for the multiple linear regression yielded an $F$ value of
2.635 with 9 and 153 degrees of freedom and a probability of .00732. Hence, the null hypothesis is rejected. There is a significant multiple correlation between the music enjoyment (preference) variables and music involvement for females.

Table 40 presents the standard regression coefficients for each variable and their computed $t$ and probability values.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standardized regression coefficient</th>
<th>Computed $t$ value</th>
<th>Probability value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical</td>
<td>.215</td>
<td>2.469</td>
<td>.015*</td>
</tr>
<tr>
<td>Jazz</td>
<td>.102</td>
<td>1.167</td>
<td>.245</td>
</tr>
<tr>
<td>Hard rock</td>
<td>.122</td>
<td>1.144</td>
<td>.254</td>
</tr>
<tr>
<td>Country</td>
<td>.058</td>
<td>0.741</td>
<td>.460</td>
</tr>
<tr>
<td>Contemporary Christian/gospel</td>
<td>-.032</td>
<td>-.031</td>
<td>.696</td>
</tr>
<tr>
<td>Soft rock</td>
<td>-.081</td>
<td>-1.031</td>
<td>.304</td>
</tr>
<tr>
<td>Heavy metal</td>
<td>.125</td>
<td>1.222</td>
<td>.224</td>
</tr>
<tr>
<td>Soul/rhythm and blues</td>
<td>.098</td>
<td>1.193</td>
<td>.235</td>
</tr>
<tr>
<td>Folk</td>
<td>.059</td>
<td>0.735</td>
<td>.463</td>
</tr>
</tbody>
</table>

* $p < .05$.  

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One of the \( t \) values presented in the third column of Table 40 is significant beyond the .05 level. This \( t \) value indicates that the corresponding variable contributes significantly to the regression once the influence of the other independent variables has been taken into account. In this case, the classical music enjoyment (preference) variable is making a significant contribution to the obtained correlation. This indicates that females who prefer classical music are more involved with music.

Stepwise regression was performed to identify the specific contribution of each variable. The classical music enjoyment (preference) variable, with a correlation of .23, was entered into the regression equation first. Calculations were then performed on the remaining variables to determine their partial correlations with music involvement after removing the influence already accounted for by the classical music enjoyment (preference) variable. The heavy metal music enjoyment (preference) variable with an \( F \) to enter of 7.51 was selected in Step 2. No further steps were added because no music enjoyment (preference) variable exceeded the \( F \) for entry. Taken together, the classical and heavy metal music enjoyment (preference) variables accounted for 9.64% of the variance in music involvement for females.

Table 41 summarizes the stepwise regression program for females.

The analysis of variance at Step 2 yielded an \( F \) value of 8.53 with 2 and 160 degrees of freedom and a probability of .001.
Table 41
Summary of Stepwise Regression Program—Females

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable entered</th>
<th>Multiple correlation coefficient</th>
<th>Proportion of variance explained</th>
<th>Increase in R squared</th>
<th>F to enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Classical</td>
<td>.2323</td>
<td>.0540</td>
<td>.0540</td>
<td>9.1819</td>
</tr>
<tr>
<td>2</td>
<td>Heavy metal</td>
<td>.3104</td>
<td>.0964</td>
<td>.0424</td>
<td>7.5070</td>
</tr>
</tbody>
</table>

Table 42 shows the regression equation at Step 2 for females. The data in Table 42 indicate that females with greater preference for classical and heavy metal music tend to be more involved with music.

Table 42
Variables in Stepwise Regression Equation at Step 2—Hypothesis 10, Females
(Y-Intercept 19.166)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard error of coefficient</th>
<th>Standard regression coefficient</th>
<th>Tolerance</th>
<th>F to remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical</td>
<td>1.499</td>
<td>.422</td>
<td>.272</td>
<td>.96481</td>
<td>12.60</td>
</tr>
<tr>
<td>Heavy metal</td>
<td>1.145</td>
<td>.418</td>
<td>.210</td>
<td>.96480</td>
<td>7.51</td>
</tr>
</tbody>
</table>

In addition to the hypotheses tested, descriptive information regarding the relative importance of the seven music use categories is now presented. The descriptive information regarding the relative importance of the seven music use categories was obtained by asking
each subject to rank order all of the seven music use categories in
terms of their primary use of music. The categories of music use
were as follows:

1. I use music to help me temporarily escape from my problems
or things that are bothering me.
2. I use music to relieve boredom.
3. I use music as a way of understanding myself and the world
better by thinking about the meaning of the lyrics.
4. I use music as a way of improving or changing my mood.
5. I use music to help me relax.
6. I use music as a way of expressing my thoughts and feelings.
7. I use music to keep me company when traveling or studying.

Table 43 shows the rank order of the seven music use categories
for both males and females. The data in Table 43 indicate that both
males and females ranked the music use category "I use music to keep
me company when traveling or studying" as their primary use of music
and the music use category "I use music to relieve boredom" as their
least use of music. Both males and females also ranked the category
"I use music as a way of improving or changing my mood" as their
second major use of music. Female subjects ranked the music use
category "I use music as a way of expressing my thoughts and feel­
ings" as their third major use of music, while male subjects ranked
this category as their fourth major use of music. Female subjects
ranked the music use category "I use music to help me temporarily
escape from my problems or things that are bothering me" as their
fourth major use of music, while male subjects ranked this category
Table 43
Rank Order of Music Use Categories for Males and Females

<table>
<thead>
<tr>
<th>Music use category</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Rank</td>
</tr>
<tr>
<td>I use music to help me temporarily escape from my problems or things that are bothering me</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td>I use music to relieve boredom</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>I use music as a way of understanding myself and the world better by thinking about the meaning of the lyrics</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td>I use music as a way of improving or changing my mood</td>
<td>26</td>
<td>2</td>
</tr>
<tr>
<td>I use music to help me relax</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>I use music as a way of expressing my thoughts and feelings</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>I use music to keep me company when traveling or studying</td>
<td>39</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>137</td>
<td></td>
</tr>
</tbody>
</table>

as their sixth major use of music. Female subjects ranked the music use category "I use music to help me relax" as their fifth major use of music, while male subjects ranked this category as their third major use of music. Female subjects ranked the music use category "I use music as a way of understanding myself and the world better by thinking about the meaning of the lyrics" as their sixth major use of music.
music, while male subjects ranked this category as their fifth major use of music.

Summary

This study was designed to examine the relationship between young peoples' music listening behaviors and the personality dimensions of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration as measured by the Structural scales of the California Psychological Inventory.

Ten hypotheses were tested for both males and females. A summary of the results is presented here. A discussion of the results follows in Chapter V.

Hypothesis 1 dealt with personality differences between high and low music involvement listeners. Significant differences were identified between high involvement and low involvement listeners for both males and females. Therefore, Hypothesis 1 was rejected for both males and females.

Hypothesis 2 dealt with the relationship between personality and music involvement for both males and females. A significant relationship was found between the personality variables and music involvement for both males and females. Therefore, the hypothesis was rejected for both males and females.

Hypothesis 3 dealt with personality differences among both males and females with different music style preferences. No significant differences were identified for males with different music style preferences. Therefore, Hypothesis 2 was retained for males.
Significant differences were identified for females with different music style preferences. Therefore, Hypothesis 2 was rejected for females.

Hypothesis 4 dealt with personality differences among both males and females who use music for different major purposes. No significant differences were identified among the seven music use groups for both males and females. Therefore, Hypothesis 3 was retained for both males and females.

Hypothesis 5 dealt with the relationship between the personality variables and the music enjoyment (preference) variables for both males and females. A significant relationship between the personality variables and the music enjoyment (preference) variables was obtained for males. Therefore, the hypotheses was rejected for males. No significant relationship between the personality variables and the music enjoyment (preference) variables was identified for females. Therefore, the hypothesis was retained for females.

Hypothesis 6 dealt with the relationship between personality and music uses for both males and females. No significant relationship was identified between the personality variables and the music uses variables for both males and females. Therefore, the hypothesis was retained for both males and females.

Hypothesis 7 dealt with the relationship between personality and the combined music variables of music enjoyment (preference), involvement, and uses for both males and females. A significant relationship between the personality variables and the combined music variables was found for both males and females. Therefore, the
hypothesis was rejected for both males and females.

Hypothesis 8 dealt with the relationship between music enjoyment (preference) and music uses for both males and females. A significant relationship between the music enjoyment (preference) variables and the music uses variables was found for both males and females. Therefore, the hypothesis was rejected for both males and females.

Hypothesis 9 dealt with the relationship between music uses and music involvement for both males and females. No significant relationship between the music uses variables and the music involvement variable was found for males. Therefore, the hypothesis was retained for males. A significant relationship between the music uses variables and the music involvement variable was found for females. Therefore, the hypothesis was rejected for females.

Hypothesis 10 dealt with the relationship between music enjoyment (preference) and music involvement for both males and females. A significant relationship between the music enjoyment (preference) variables and the music involvement variable was found for both males and females. Therefore, the hypothesis was rejected for both males and females.

Descriptive information regarding the rank ordering of the seven music use categories for both males and females was also provided.
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS
FOR FURTHER RESEARCH

This chapter presents a summary of the research, conclusions based on the study, and implications for further research.

Summary

Purpose of the Study

This study was intended to gain a greater understanding of personality and the concomitant role of music for young people. Previous research (Bartha, 1982; Blackburn, 1983; Cattell & Anderson, 1953; Fisher & Fisher, 1951; Hahn, 1954; Keston & Pinto, 1955; Mayeske, 1962; Payne, 1967) demonstrated differences in personality characteristics reflected in musical preferences. Other studies (Blackburn, 1983; Fox & Williams, 1974; Ridgeway, 1976; Roberts & Ridgeway, 1969) have shown a relationship between level of involvement with music and personality factors. Previous research (Blackburn, 1983; Gantz et al., 1978; Lyle & Hoffman, 1972) has also shown that young people use music for different major purposes.

The purpose of this study was to determine if a relationship exists between the musical style preferences, level of music involvement, and major uses of music among young people and the personality dimensions of internality (introversion), norm-acceptance, and sense
of self-realization and psychological integration as measured by the Structural scales of the California Psychological Inventory.

Summary of the Methodology

The subjects for this research were 300 young people enrolled during the Winter and Spring semesters of 1988 in several southwestern Michigan educational institutions. Subjects were all volunteers who agreed to participate in the study. The sample consisted of 137 males and 163 females ranging in age from 18 to 20 years.

Volunteer subjects from classes in psychology, sociology, and general education were asked to take home and complete two instruments and return them in 1 week. Both verbal and written informed consent were provided to all subjects. Subjects were instructed not to place their name on either instrument, but to provide only their age and gender.

The two instruments utilized in the study were the California Psychological Inventory and an investigator-developed instrument, the Music Preference and Interest Questionnaire. The Structural scales of the California Psychological Inventory were used as a measure of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration. The Music Preference and Interest Questionnaire was used to gather information about subjects' musical preferences, level of involvement with music, and major uses of music.

Several major statistical methods were employed to analyze the data. One-way multivariate analysis of variance was used to
determine if there were significant differences among the personality centroids of the high and low music involvement groups, the nonrock, soft rock, and hard rock music style preference groups, and the seven major music use groups for both males and females. In the event of a significant $F$ ratio, discriminant analysis was employed to identify the variables which maximally discriminated among the various groups.

Multiple linear regression analysis was employed to analyze the relationship between the personality variables and music involvement, the music uses variables and music involvement, and the music enjoyment (preference) variables and music involvement for both males and females. Stepwise regression was added to identify the specific contribution of each of the various predictor variables in their contribution to variation in the criterion variable.

Canonical correlation analysis was employed to analyze the relationship between the three personality variables and the music enjoyment (preference) variables, the personality variables and the music uses variables, the personality variables and the combined music variables, and the music enjoyment (preference) variables and the music uses variables for both males and females.

An alpha of .05 was used to test all hypotheses.

Summary of the Findings

The 10 major hypotheses tested and a summary of the findings are presented below.

Hypothesis 1 was: There is no significant difference between the personality centroids of those with high and low music listening.
involvement. Hypothesis 1 was tested separately for males and females by one-way multivariate analysis of variance using the three personality variables as the dependent variables. Analysis yielded significant differences between male high involvement and low involvement listeners. Discriminant analysis revealed that males who are less involved in music tend to be more norm-accepting and more introverted than those who are highly involved in music. Significant differences were also identified between female high and low involvement listeners. Discriminant analysis revealed that females who are less involved in music tend to be more norm-accepting and more introverted than those who are highly involved in music.

Hypothesis 2 was: There is no significant multiple correlation between the set of personality variables and the music involvement variable. For males, a multiple linear regression analysis revealed a significant relationship between the personality variables and music involvement. Males who are less norm-accepting and less introverted tend to be more involved in music. Stepwise regression analysis also indicated that males who are less norm-accepting and less introverted tend to be more involved in music. These findings correspond with those of Hypothesis 1 for males. For females, a multiple linear regression analysis revealed a significant relationship between the personality variables and music involvement. Females who are less norm-accepting and less introverted tend to be more involved in music. Stepwise regression analysis also indicated that females who are less norm-accepting and less introverted tend to be more involved in music. These findings also correspond with those of
Hypothesis 1 for females.

Hypothesis 3 was: There are no significant differences among the personality centroids of those with different music style preferences. Hypothesis 3 was tested separately for males and females by one-way multivariate analysis of variance using the three personality variables as the dependent variables. The three music style preference groups consisted of nonrock, soft rock, and hard rock. For males, a one-way multivariate analysis indicated no significant differences with different music style preferences. However, significant differences were identified for females with different music style preferences. Discriminant analysis revealed that females preferring soft rock music tend to be more norm-accepting than those preferring either hard rock or nonrock music.

Hypothesis 4 was: There are no significant differences among the personality centroids of those who use music for different major purposes. Hypothesis 4 was tested separately for males and females by one-way multivariate analysis of variance using the three personality variables as the dependent variables. The seven music use groups consisted of music uses related to temporary escape from personal problems, relief from boredom, self-understanding through listening to the lyrics of songs, mood improvement/change, relaxation, self-expression of thoughts and feelings, and company while traveling or studying. For both males and females, a one-way multivariate analysis of variance revealed no significant differences among the seven music use groups.
Hypothesis 5 was: There is no significant canonical correlation between the set of personality variables and the set of music enjoyment (preference) variables. For males, canonical correlation analysis revealed a significant relationship between the personality variables and the music enjoyment (preference) variables. The first canonical function revealed that males who are more norm-accepting and more introverted tend to have greater preference for contemporary Christian/gospel music, less preference for hard rock music, more preference for country music, less preference for heavy metal and soul/rhythm and blues music, and more preference for folk music. The second canonical function indicated that males who are more introverted and less self-realized tend to have less preference for jazz, classical, folk, and soft rock music, more preference for heavy metal music, and less preference for country and soul/rhythm and blues music. For females, no significant relationship was found between the personality variables and the music enjoyment (preference) variables.

Hypothesis 6 was: There is no significant canonical correlation between the set of personality variables and the set of music uses variables. For both males and females, canonical correlation analysis revealed no significant relationship between the personality variables and the music uses variables.

Hypothesis 7 was: There is no significant canonical correlation between the set of personality variables and the combined music variables. For males, canonical correlation analysis revealed a significant relationship between the personality variables and the combined
music variables of music enjoyment (preference), music involvement, and music uses. The canonical function indicated that males who are more norm-accepting and more introverted are less involved in music and tend to have a greater preference for contemporary Christian/gospel music, less preference for heavy metal and jazz music, and are less likely to use music as a means of self-expression of thoughts and feelings. For females, canonical correlation analysis revealed a significant relationship between the personality variables and the combined music variables. The canonical function indicated that females who are more norm-accepting, more self-realized, and more introverted tend to be less involved in music and have less preference for heavy metal and hard rock music, more preference for contemporary Christian/gospel music, less preference for soul/rhythm and blues music, and more preference for folk music, and to be more likely to use music for relaxation, less likely to use music to understand themselves and the world better by listening to the lyrics, and as a temporary escape from personal problems.

Hypothesis 8 was: There is no significant canonical correlation between the set of music enjoyment (preference) variables and the set of music uses variables. For males, canonical correlation analysis revealed a significant relationship between the music enjoyment (preference) variables and the music uses variables. The first canonical function indicated that males who use music to keep themselves company while traveling or studying, to relieve boredom, and for relaxation tend to have less preference for classical music, greater preference for soft rock music, and less preference for jazz
music. For females, canonical correlation analysis revealed a significant relation between the music enjoyment (preference) variables and the music uses variables. The first canonical function indicated that females who use music more to relieve boredom, less for relaxation, and more to understand themselves and the world better by listening to the lyrics tend to have less preference for jazz and country music. The second canonical function indicated that females who use music more to understand themselves and the world better by listening to the lyrics and more as a means of self-expression of thoughts and feelings and mood improvement/change tend to have greater preference for classical and folk music and less preference for soft rock music.

Hypothesis 9 was: There is no significant multiple correlation between the music uses variables and music involvement. For males, a multiple linear regression analysis revealed no significant relationship between the music uses variables and the music involvement variable. For females, multiple linear regression analysis revealed a significant relationship between the music uses variables and the music involvement variable. Females who use music less to keep themselves company while traveling or studying and more as a means of self-expression of thoughts and feelings tend to be more involved in music. Stepwise regression analysis indicated that females who use music less to keep themselves company while traveling or studying and more as a means of self-expression of thoughts and feelings tend to be more involved in music.
Hypothesis 10 was: There is no significant multiple correlation between the music enjoyment (preference) variables and music involvement. For males, a multiple linear regression analysis revealed a significant relationship between the music enjoyment (preference) variables and the music involvement variable. Males who have less preference for contemporary Christian/gospel music tend to be more involved in music. Stepwise regression analysis indicated that males with less preference for contemporary Christian/gospel and country music and more preference for jazz music tend to be more involved in music. For females, multiple linear regression analysis revealed a significant relationship between the music enjoyment (preference) variables and the music involvement variable. Females who prefer classical music are more involved in music. Stepwise regression analysis indicated that females with greater preference for classical and heavy metal music tend to be more involved in music.

Discussion of the Findings

The findings of this study provide some support for a relationship between young peoples' music listening behaviors and the personality variables of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration. It must be noted that while the design of this study was not intended to evaluate cause and effect relationships between the personality variables and the music listening variables, it does permit a discussion of the relationship between the personality variables studied and the music
listening behaviors of music preference, level of music involvement, and major uses of music among young people.

**Music Preference**

The results of this study indicated that males who are more norm-accepting and more introverted tend to have greater preference for contemporary Christian/gospel, country, and folk music and have less preference for hard rock, heavy metal, and soul/rhythm and blues music. This means that males who prefer contemporary Christian/gospel, country, and folk music and who have less preference for hard rock, heavy metal, and soul/rhythm and blues music tend to have personalities which are conservative, conventional, moderate, reticent, reserved, modest, controlled, and internally focused.

Both contemporary Christian/gospel and country music may be envisioned as musical styles which both musically and lyrically reflect conservative traditional values and self-orientation. It appears that males with a conservative and internally focused personality orientation tend to prefer musical styles consistent with their personality orientation. Similarly, it appears that males who are conservative and internally focused tend to have less preference for musical styles, particularly hard rock and heavy metal, which are characteristically loud, hard-driving, aggressive, and both musically and lyrically more deviant. As such, hard rock and heavy metal music may be viewed as inconsistent with their personality orientation.

It was also found that males who are more introverted and less self-realized tend to have less preference for jazz, classical, folk,
soft rock, country, and soul/rhythm and blues music and have greater preference for heavy metal music. Males who tend to be internally oriented, reserved, dissatisfied, unsure of self, and vulnerable to life's stresses tend to have less preference for what might be described as more traditional and conservative musical styles and greater preference for heavy metal music. Heavy metal music is characteristically more aggressive, loud, and both musically and lyrically more deviant than other musical styles.

It may be that males who are internally oriented, reserved, and more emotionally conflicted are attracted to music expressive of their personal discontent. Weinstein (1983) suggested that heavy metal music is an exemplification of male adolescent ambivalence about assuming an adult position in society. According to Weinstein, the aggressive qualities of heavy metal music provides adolescent males with an opportunity to express personal discontent vicariously while assuming increasing adult responsibilities. While Weinstein suggested that the relationship between ambivalence and personal discontent regarding social role and heavy metal music is characteristic for adolescent males in our society, it may be that the relationship between personal ambivalence and discontent and preference for heavy metal music is even more characteristic among male youths experiencing more than average personal conflict. Thus, one might speculate that males who are self-oriented, reserved, and less well psychologically integrated would be particularly attracted to a musical style which might serve as an expression of personal discontent.
The personality variables of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration did not significantly differentiate among male subjects with preferences for either hard rock, soft rock, and nonrock music. Blackburn (1983) found significant differences in terms of self-concept scores among adolescent males who had different music style preferences. The personality variables selected in this study, however, are not significantly related to such preferences.

The results of this study indicated that females who prefer soft rock music are more norm-accepting than those preferring either hard rock or nonrock music styles. This means that females who prefer soft rock music tend to be more conservative, conventional, controlled, and moderate than females preferring either hard rock or nonrock music styles.

Soft rock music is a musical style which is both musically and lyrically more subdued/conservative than hard rock music. It may be that females who are conservative, conventional, moderate, and controlled prefer soft rock music as a musical style which conforms to their personality orientation in terms of norm-acceptance.

The finding that females who prefer soft rock music are more norm-accepting than females who prefer nonrock music is more difficult to understand. It might be speculated that this finding is partially related to the global category of nonrock music. In this study the category of nonrock music incorporated a variety of diverse musical styles including classical, jazz, country, contemporary Christian/gospel, folk, and soul/rhythm and blues music. The
inclusive nature of the nonrock music category did not permit differentiation in terms of specific nonrock music styles, but permitted only for a comparison of the personality variables among listeners who prefer nonrock music as an inclusive category with those preferring either hard rock or soft rock as more specific musical styles.

No significant relationship between the personality variables and the music enjoyment (preference) variables was found for females. However, a significant relationship between the personality variables and the combined music variables of preference, level of music involvement, and music uses was found for females. This finding indicated that the relationship between personality and music preference is less clear for females than for males in this study. This finding also indicated that for females in this study, music preference seems to operate in conjunction with level of music involvement and music uses suggesting that the relationship between personality and music preference must be examined in configuration with these other music listening behaviors.

The present study appears to indicate that the musical preferences of young people are related to the personality variables of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration rather than the product of random selection. There appears to be a general trend among young people to have musical tastes that may be seen as consistent with their personality orientation. This suggests that young peoples' musical tastes are, at least to some extent, expressive of their current personality makeup and psychological orientation.
While the results of this study appear to support the findings of other studies (Bartha, 1982; Blackburn, 1983; Cattell & Anderson, 1953; Fisher & Fisher, 1951; Hahn, 1954; Keston & Pinto, 1955; Mayeske, 1962) which showed a relationship between music preference and personality, it should be noted that the magnitude of the relationship between personality and music preference is not presently clear enough to warrant the use of music preferences as a personality classification device. Although the results of this study seem to suggest that the musical preferences of young people appear to be related to personality, the relationship appears to be quite complex.

It should also be noted that the results of this study are subject to certain restrictions which limit the generalizability of the findings. The first restriction is related to the geographical location in which the study was conducted. Regional differences in terms of musical preferences might be expected to influence the relationship between personality and music preferences found in this study. Additionally, the results of this study examining the relationship between music preference and personality are subject to temporal restrictions due to the fact that music categories continue to evolve and the style and descriptive titles of music categories change over time.

Music Involvement

The results of this study indicated that there is some support for the relationship between the personality variables of internality (introversion), norm-acceptance, and sense of self-realization and
psychological integration and level of music involvement among young people. Two major hypotheses were tested to examine this relationship and both were found to be significant for both males and females.

It was found that both males and females who are more norm-accepting and more introverted are less involved in music. This means that males and females who are less involved in music tend to have personalities which are conventional, conservative, moderate, reticent, reserved, modest, controlled, and internally oriented.

This finding seems in agreement with Fox and Williams (1974) who found that politically conservative college students were generally less involved in music than politically liberal students. One might speculate that this finding reflects introverted and norm-accepting individuals' tendency to direct their interests inward and to be rather restrained and moderate individuals who would not be expected to invest much in the way of time, money, or energy in music listening. However, given the limitations of the present research, broad generalizations about the nature of the relationship between personality and music involvement are not possible. Certainly, precise personality prediction or classification based on a knowledge of one's level of music involvement is not currently possible. Only 23% of the variance in the music involvement scores for males and 8% of the variance in the music involvement scores for females were accounted for the combination of the three personality variables examined in this study. While there appears to be a relationship between the personality variables of introversion and norm-acceptance and
level of music involvement, these two personality factors are obviously not the only variables influencing level of music involvement.

The results of examining the relationship between young peoples' uses of music and level of music involvement were nonsignificant for males. However, it was found that females who use music less to keep themselves company and more as a means of self-expression of thoughts and feelings are more involved in music. It appears that music functions less as a means of companionship and more as a means of emotional self-expression for female high involvement listeners. Schafer (1972) suggested that music functions as a medium for self-expression among young people because of its ability to reflect and factualize individual mood and emotion. It appears that females who are highly involved in music tend to use music primarily as a medium for self-expression.

The results of examining the relationship between level of music involvement and music preference indicated that males with less preference for contemporary Christian/gospel and country music and more preference for jazz music tend to be more involved in music. One might speculate that this relationship reflects a tendency among jazz music consumers to be a somewhat exclusive and highly devoted group of music listeners who might be expected to invest more in the way of time, money, and energy in music than consumers of other musical styles. It was also found that females who prefer classical and hard rock music are also more involved in music. While this finding is difficult to explain, it might be speculated that females who prefer classical and hard rock music represent a group of serious music
students who may be preparing for a musical career, and as such, would be expected to be more involved in music. The results of this study suggest that the relationship between level of music involvement and music preference is a complicated matter.

Music Uses

One of the major purposes of this study was to examine the relationship between the personality variables of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration and young peoples' use of music in their daily lives. Two major hypotheses were tested to examine this relationship and both were found to be nonsignificant for both males and females.

A review of the literature related to the uses of music suggested both theoretically and empirically the validity of distinct categorization of music uses. While no previous study examined the relationship between personality and music uses, it seemed logical to assume significant personality variation in relationship to this particular music listening behavior. While the results of this study do not support the existence of a statistically significant relationship between personality and one's use of music, it should not necessarily be assumed that such a relationship does not exist or could not be evidenced under different assessment techniques.

The subjects in this study were asked to indicate their uses of music from among seven music use categories developed on the basis of a pilot study in which subjects were asked to respond to an open-ended question regarding their primary use of music. The seven
developed categories corresponded closely to those developed by Gantz et al. (1978) and Blackburn (1983). While it appears possible to develop distinctive categories of music use among young people, it is likely that much information regarding the personal meaning an individual attaches to his or her music listening is lost when written response options are restricted. The results of this study suggest that the relationship between personality and music uses remains tenable, but that this relationship may best be studied on an individual basis utilizing interview procedures.

The results of examining the relationship between music enjoyment (preference) and music uses indicated that males who use music to keep themselves company while traveling or studying, to relieve boredom, and for relaxation purposes tend to have less preference for classical and jazz music and greater preference for soft rock music. Classical and jazz music styles do not typically have lyrical content, while soft rock music typically does have lyrical content. It may be that the presence or absence of lyrical content is a significant factor influencing this relationship.

It was found that females who use music more for relieving boredom and understanding themselves and the world, and less for relaxation purposes tend to have less preference for jazz and country music. It was also found that females who use music more to understand the world better, as a means of self-expression, and for mood alteration have greater preference for classical and folk music and less preference for soft rock music. This finding is difficult to understand based on Weinstein's (1983) contention that the appeal of
soft rock music for females lies primarily in its lyrical content. It appears that females in this study who listen to music primarily for its lyrical content as well as its expressive and mood altering qualities have less attraction for soft rock music and more attraction for classical and folk music.

Combined Music Variables

One of the major hypotheses of this study dealt with the relationship between the personality variables of internality (introversion), norm-acceptance, and sense of self-realization and psychological integration and the combined music variables of music enjoyment (preference), level of music involvement, and major uses of music.

The results of examining this relationship indicated that males who are more norm-accepting and more introverted are less involved in music. They have greater preference for contemporary Christian/gospel music and less preference for heavy metal and jazz music. They are also less likely to use music as a means of self-expression of thoughts and feelings. The males described in the above relationship were stated to be more norm-accepting and more introverted. The personalities of these males may be more fully described as a tendency to be conservative, conventional, moderate, reticent, reserved, modest, controlled, and internally focused.

It was also found that females who are more norm-accepting, more introverted, and more self-realized are less involved in music. They have less preference for heavy metal, hard rock, and soul/rhythm and
blues music and greater preference for contemporary Christian/gospel and folk music. They are more likely to use music for relaxation purposes and less likely to use music to understand themselves and as a temporary escape from personal problems. The females described in the above relationship were stated to be more norm-accepting, more introverted, and more self-realized. The personalities of these females may be more fully described as a tendency to be conservative, conventional, moderate, reserved, reticent, modest, controlled, and internally focused. Additionally, these females tend to feel themselves able to cope with the stresses of life and reasonably fulfilled or actualized.

The results of the analyses of the relationship between the personality variables and the combined music variables indicate that the music variables operate in combination with personality factors. As such, it becomes apparent that the relationship between personality and music listening behaviors is a complex phenomenon and that it is not possible to extract much in the way of overarching generalizations.

Relative Importance of the Music Use Categories

The descriptive information obtained from asking subjects to rank order all of the seven music use categories provided information on the relative importance of the seven music use categories for both males and females.

Both males and females ranked the music use category "I use music to keep me company while traveling or studying" as their
primary use of music. This finding supports the findings of Gantz et al. (1978) who found that 91% of 468 junior high, senior high school, and college subjects indicated they were motivated to listen to popular music to pass the time or relieve boredom while doing other things such as homework, cleaning, or driving. It appears that young people use music mainly as an adjunct to other activities rather than as a central activity requiring concentrated attention.

Both males and females ranked the music use category "I use music to relieve boredom" as their lowest ranked use of music.

Both males and females also ranked the music use category "I use music as a way of improving or changing my mood" as their second major use of music. This finding supports the findings of Blackburn (1983) and Gantz et al. (1978) who found that mood improvement/alteration was one of the most frequently cited motivations for music listening among young people. There is considerable research evidence (Eagle, 1971; Shatin, 1970; Sopchak, 1955) to suggest that music can influence mood responses in listeners and it appears that the mood altering ability of music serves as a major motivation for listening among young people.

Gender-related differences were observed in terms of the remaining ranked categories of music use. Females ranked the music use category "I use music as a way of expressing my thoughts and feelings" as their third major use of music, while males ranked this category as their fourth major use of music. It appears that music functions more as a means of emotional self-expression for females than for males. Female subjects ranked the music use category "I use
music to help me temporarily escape from my problems or things that are bothering me" as their fourth major use of music, while male subjects ranked this category as their sixth major use of music. Schafer (1972) proposed an escapist function of rock music listening among young people and it appears that this aspect of music use is more functional for females than males.

Female subjects ranked the music use category "I use music to help me relax" as their fifth major use of music, while male subjects ranked this category as their third major use of music. It appears that music functions as a tension reducing activity for young people and that this aspect of music use is more functional for males than for females.

Female subjects ranked the music use category "I use music as a way of understanding myself and the world better by thinking about the meaning of the lyrics" as their sixth use of music, while male subjects ranked this category as their fifth major use of music. The relatively low ranking given by both males and females regarding the significance of lyrical content suggests that young peoples' use of music is relatively unrelated to a cognitive interpretation of lyrical content. This finding is in agreement with Denisoff and Levine (1971), Lull (1985), and Roe (1985) who suggested that the meaning or attraction of music for young people is not primarily tied to lyrical content. While the meaning or use of music for subjects in this study appears to be relatively unrelated to lyrical content as an aid to self/world understanding, it appears that this use of music is more important for males as a whole than for females.
The data related to the relative importance of the seven music use categories indicate that there is some agreement between males and females in terms of their use of music, but that gender-related differences also exist. It appears that in some respects music functions differentially for males and females and that generalizations about the role of music for young people must be qualified in terms of gender-related differences.

Conclusions

The results of this study indicate that the musical preferences of young people are related to the personality variables of internality, norm-acceptance, and sense of self-realization and psychological integration. It appears that the type of music a young person prefers to listen to may be indicative of certain personality factors. The findings of this study suggest a general trend among young people to have musical tastes which may be seen as consistent with their personality orientation.

However, the results of this study also suggest that music preference also operates in combination with other music listening behaviors such as level of music involvement and one's use of music. As such, it is concluded that the relationship between personality and music preferences is a complex matter and that a knowledge of a young person's musical preferences does not currently permit precise personality prediction or classification.

The results of this study indicate that there is a relationship between the personality factors studied and level of music

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involvement among young people. However, the relationship is not strong enough to warrant the use of level of music involvement as a personality classification device. The personality variables used in this study accounted for only a small percentage of the variance in the music involvement scores, indicating that other factors influence level of music involvement.

Finally, the results of this study indicate that the relationship between personality and one's use of music is a complex phenomenon best studied on an individual basis. While the results of this study indicate that there is a relationship between young peoples' use of music and music preference, the relationship appears to be complex and would be best studied on an individual basis.

The results of this study indicate that young people as a whole use music primarily as an adjunct to other activities, and secondly, as a way of improving or altering their mood state. The results of this study indicate that the meaning or use of music among young people is relatively unrelated to lyrical content and that gender-related differences exist in terms of the major uses of music among young people. Generalizations about the role of music for young people must be qualified in terms of gender-related differences.

Recommendations

The results of this study clearly suggest that the relationship between personality and the music listening behaviors of music preference, level of music involvement, and music uses is a complex matter and it is recommended that this relationship be studied on an
individual basis. Music listening behaviors operate in combination with personality factors. Therefore, it is recommended that future studies examine the interrelatedness of these music listening behaviors in configuration with personality. A case-by-case approach, utilizing interview techniques, would more clearly identify the specific meaning a young person attaches to his or her music listening behaviors.

All of the subjects in this study were volunteers and the self-selected nature of this sample may have introduced bias, limiting the generalizability of the findings. It is recommended that a random sample be utilized in subsequent studies and that the sample be large enough to permit adequate representation in terms of the music listening behavior categories. Additionally, all of the subjects in this study were college students and future research should include a more heterogeneous population.

Other measures of personality and music preference, level of music involvement, and uses of music may be considered in future studies.

Finally, the causal connections between music listening behaviors and personality should be explored. Future studies are needed to determine the extent to which music listening behaviors simply serve as a reflection of personality or act to affect a listener's personality development and/or functioning.
APPENDICES
Appendix A

Instructions for Taking the California Psychological Inventory and the Music Preference and Interest Questionnaire
Instructions For Taking The California Psychological Inventory
and The Music Preference and Interest Questionnaire

Now that you have agreed to participate in this study, you will be receiving a package containing two instruments. I will be giving directions for taking both of these instruments. Please follow along as I show you both of the instruments and explain the directions for each.

The instrument on top is a blue booklet and is called The California Psychological Inventory. In this booklet is a series of statements. Read each statement and then decide whether or not you agree with the statement or whether or not you feel it is true about you. Do not put your answer in the test booklet, but put your answer on the special answer sheet provided in the front page of the booklet. If you agree with the statement or feel that it is true about you then answer TRUE by filling in the circle with a T in it. If you disagree with the statement or feel that it is not true about you, then answer FALSE by filling in the circle with an F in it. Continue this process for each item in the booklet. Be sure to answer every item even if you have to guess about some. Be sure that the number of the statement in the booklet is the same as the number on the answer sheet. You may use either a pencil or a pen to mark you answers. Be sure not to put your name anywhere on the answer sheet, but provide only your age and gender.

The second instrument in the package is called the Music Preference and Interest Questionnaire. Please write your age and indicate your gender on the upper right hand corner of the first page. Mark your answers directly on this questionnaire and remember not to place your name anywhere on this questionnaire. The first section of the questionnaire lists a variety of different types of music. Please indicate the degree to which you derive enjoyment for each one of the music categories by circling the response that best describes how much enjoyment you derive from each one of the listed music categories.

On the second page is a list of the same music categories and you are asked to check the one category of music you generally prefer to listen to and to list an example (artist, performer, composer) of your preferred musical category. Following this is a series of 12 questions regarding your participation in music related activities. Read each question and circle the response that best describes your participation for each item. You will then find a list of seven music use categories and you are asked to rank order all of the seven categories from 1 to 7 in terms of your primary use of music. For example, give a rank of "1" to the music use category you think best describes your primary use of music and a rank of "2" to the category that best describes your second most important use of music, and so on. Be sure to rank every category.
On the last page you will see the same list of music uses or ways in which people use music in their daily lives. Please put a check beside only those categories of music use that apply to how you use music.

When you have finished, put all of the items back in the package and return it to your instructor one week from today. Thank you for your cooperation.
Appendix B

Informed Consent
Informed Consent

I am a doctoral student in Counseling Psychology at Western Michigan University. I am presently working on a research project for my dissertation. This study is concerned with young peoples' interests in music. Music is often an important activity among youth, but very little is currently known about why music is so meaningful to young people or what functions it serves. I am interested in finding out the types of music that are appealing to young people ranging in age from 18-20 years and why music listening is important to youth. I am also interested in finding out if personality factors are related to one's music listening behaviors.

I am asking for your participation in this study. If you are between the ages of 18-20 years old and choose to be a part of this study you will be asked to fill out two questionnaires. The first questionnaire involves information about your music listening behaviors in terms of your preferred musical style, your level of music listening involvement, and the uses you make of music in your daily life. The second questionnaire involves information about your personality in terms of normal personality characteristics that are important in everyday life. It is important that both questionnaires be fully completed. It will take you approximately 10 minutes to complete the first questionnaire and 50 minutes to complete the second questionnaire.

Your participation in this study is voluntary. If you choose not to participate in this study you will not be penalized in any way. Please also note that if you choose to participate you may withdraw from the study at any time without penalty. The results of this study will be strictly confidential. You are requested NOT TO PUT YOUR NAME ON EITHER OF THE QUESTIONNAIRES. You will be handed a package containing the two questionnaires and will note that a code number has been placed on the outside of the package as well as on the two questionnaires inside. The purpose of the code number is simply to ensure that the two questionnaires do not get separated. The code number is not used to identify you individually in any way. The only information you will be required to provide on the questionnaires is your age and gender.

The expected benefit of this study is to gain a much needed understanding of young peoples' music listening behaviors and interests in music in relation to personality by allowing young people themselves to instruct us as to the role that music plays in their lives.

I very much appreciate your taking the time to assist me in this study. If you have any questions about this study or would like further information, please feel free to call Sheila Smith at 473-2655 (home) or 927-3333 (office). Those of you who are willing to participate in this study are requested to come with me now to another designated classroom where you will complete the two questionnaires previously described. Your informed consent to participate in this study is manifested by your coming with me for approximately one hour to complete the previously described questionnaires.
Appendix C

The Music Preference and Interest Questionnaire
The Music Preference and Interest Questionnaire

Below is a list of various kinds of music. Please circle the degree to which you derive enjoyment for each one of the listed music categories.

**MUSIC CATEGORIES**

<table>
<thead>
<tr>
<th>Category</th>
<th>No enjoyment at all</th>
<th>a little enjoyment</th>
<th>moderate enjoyment</th>
<th>great enjoyment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLASSICAL</strong></td>
<td>No enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>JAZZ</strong></td>
<td>No enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HARD-ROCK</strong></td>
<td>No enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COUNTRY</strong></td>
<td>No enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONTEMPORARY-CHRISTIAN/GOSPEL</strong></td>
<td>No enjoyment at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SOFT-ROCK</strong></td>
<td>No enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HEAVY METAL</strong></td>
<td>No enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SOUL/RHYTHM &amp; BLUES</strong></td>
<td>No enjoyment at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FOLK</strong></td>
<td>No enjoyment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OTHER PLEASE SPECIFY</strong></td>
<td>No enjoyment at all</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please indicate the one type of music you generally prefer to listen to from among the following categories. Check only one category. After you have selected your preferred category of music, please list an example (artist, group, composer) of your preferred musical category on the blank provided.

**MUSICAL CATEGORIES**

- Classical
- Jazz
- Hard-Rock
- Country
- Contemporary Christian/Gospel
- Soft-Rock
- Heavy Metal
- Soul/Rhythm & Blues
- Folk
- Other (Please Specify)

**EXAMPLE of Artist, Group, or Composer** of your preferred category of music

**MUSIC LISTENING FREQUENCY**

1. How many hours a day would you say you listen to music on the radio?

   - 0-1 hrs.
   - 1-2 hrs.
   - 2-3 hrs.
   - 3-4 hrs.
   - More than 4 hrs.

2. How many hours a day would you say you listen to tapes, records, or compact discs?

   - 0-1 hrs.
   - 1-2 hrs.
   - 2-3 hrs.
   - More than 3 hrs.
CONCERT ATTENDANCE

3. How many concerts would you say you have attended in the last two years?
   0  1-2  3-4  More than 4

MUSIC MATERIAL OWNERSHIP

4. How many records albums do you own?
   0  1-9  10-19  20 or more
5. How many single records do you own?
   0  1-9  10-19  20 or more
6. How many cassette tapes do you own?
   0  1-9  10-19  20-29  30 or more
7. How many compact discs do you own?
   0  1-2  3-4  5 or more

MUSIC MATERIAL PURCHASES

8. How many record albums have you purchased in the last year?
   0  1-3  4-6  7-9  10 or more
9. How many single records have you purchased in the last year?
   0  1-2  3-4  5 or more
10. How many cassette tapes have you purchased in the last year?
    0  1-4  5-9  10-14  15 or more
11. How many compact discs have you purchased in the last year?
    0  1  2  3  4 or more
**DEGREE of LISTENING ABSORPTION**

Do you listen to music only as background to other activities, mostly listen carefully, or fall somewhere in between? Please circle the appropriate response.

When I listen to music I listen ........

- Only as background
- Occasionally listen carefully
- Mostly listen carefully
- Always listen carefully

**MUSIC USE**

Below is a list of 7 possible ways in which people use music in their daily lives. Please rank ALL of the 7 listed uses in terms of their relative importance to your use of music. For example, give a rank of "1" to the music use category you think best describes your primary use of music, and a rank of "2" to the music use category that best describes your second most important use of music, and so on. Continue to rank EVERY remaining category in terms of its importance to your use of music.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Music Use Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I use music to help me temporarily escape from my problems or things that are bothering me</td>
</tr>
<tr>
<td></td>
<td>I use music to relieve boredom</td>
</tr>
<tr>
<td></td>
<td>I use music as a way of understanding myself and the world better by thinking about the meaning of the lyrics</td>
</tr>
<tr>
<td></td>
<td>I use music as a way of improving or changing my mood</td>
</tr>
<tr>
<td></td>
<td>I use music to help me relax</td>
</tr>
<tr>
<td></td>
<td>I use music as a way of expressing my thoughts and feelings</td>
</tr>
<tr>
<td></td>
<td>I use music to keep me company when traveling or studying</td>
</tr>
</tbody>
</table>
Below is the same list of ways that people use music in their daily lives. Please put a check beside ONLY those uses of music that apply to how you use music.

I use music to help me temporarily escape from my problems or things that are bothering me.
I use music to relieve boredom.
I use music as a way of understanding myself and the world better by thinking about the meaning of the lyrics.
I use music as a way of improving or changing my mood.
I use music to help me relax.
I use music as a way of expressing my thoughts and feelings.
I use music to keep me company when traveling or studying.
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