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We're Listening: A Study of Music Preference in Modern Society

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WE'RE LISTENING: A STUDY OF MUSIC PREFERENCE IN MODERN SOCIETY

By

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Dedication

This thesis is dedicated first and foremost to my Lord and Savior Jesus Christ, without whom I could do nothing, and to my parents G. Bruce Glover and Joyce M. Glover who taught me that there are no limits to what one can accomplish through hard work and dedication.

Acknowledgements

WE'RE LISTENING: A STUDY OF MUSIC PREFERENCE IN MODERN SOCIETY

Abstract

By Michael B. Glover

University of the Pacific
2023

The purpose of this study was to investigate the formation of music preference in an effort to identify specific ages when preferred music is likely to be discovered. One hundred one individuals participated in an online survey, answering questions about their listening habits, music preferences, and the social elements that contributed most to those preferences. Participants were asked to identify their current, second, and third favorite music at the time of the study and whether their preferences had changed over time. According to findings, males were likely to discover their current favorite music at the age of 12.46 years, and females were likely to discover their current favorite music at the age of 13.23 years. Parents, friends, and the radio were shown to be the most common influences towards preference discovery. Of those surveyed, 69.3 % of participants acknowledged that their preferences had changed over time. However, the current methodology lacked the specificity to determine the scope of that change, leaving room for future study. The results hold implications for not only the field of music therapy, but also for any other fields utilizing preferred music to achieve a specific result.

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CHAPTER 1: INTRODUCTION

Music is a cultural invariant that can be traced back through human history as far as the first known civilizations (Hodges & Sebald, 2011; Greenberg et al., 2021). Indeed, among the artifacts found from ancient cultures, evidence often surfaces suggesting the musicality of early peoples (Hodges & Sebald, 2011; Račevska & Tadinac, 2019). Throughout time, and across the world, people have continued to become more and more musical. Music has carried our oral traditions, told our stories, praised our heroes, mocked our politicians and celebrities, and entwined us as family, friends, and lovers. All facets of humanity have been expressed through our music to the extent that it has come to define us both collectively and individually – or, at the very least, it has given us a way to express who we are to each other. It is this last idea that propels my study.

Musical choices are not merely influenced by aesthetic considerations and musical structures. Music preference is a multi-factorial construct that involves many elements such as societal influence, the individual, and the music itself (Leblanc, 1982; Bonneville-Roussy et al., 2017; Thompson et al., 2022). Tang and Jhang (2020) state, "to judge the desirability of a work, the circumstance in which it is presented and interpreted is heavily relied upon" (pp. 540-541). In other words, when considering "why" we like the music we do, we must consider the context under which we first encountered it.

The question also arises as to the persistence of music preference once it has been established or identified. Research is scarce regarding this. No studies could be found to directly investigate this area of inquiry, revealing an area for future study. Such a methodology would undoubtedly need to be longitudinal in nature, or to utilize a measure that directly asks

participants about their preferences over time. Bonneville-Roussy and colleagues (2013) investigated age trends in music engagement and preference by analyzing the data of two large cross-sectional studies. Their findings indicate that music listening habits decrease over time, as do preferences for more energetic music styles. Their findings suggest the possibility for variances in music preference over time. This study employs a measure that directly asks participants about changes in their listening habits in an effort to illuminate this area of inquiry.

Societal Influence

According to LeBlanc (1982), societal factors include the influences of one's peers and family, authorities and experts (such as educators and music critics), and incidental conditioning. The effects of these influences vary throughout the different stages of life. For instance, a young child might be content to follow their parents' musical tastes. Yet, as the child grows into adolescence and begins to assert their own unique identity, peers may begin to hold a greater influence, resulting in choices that are in opposition to the parents' tastes. The magnitude of influence exerted by parents, authority figures, and experts is related to the quality of those relationships, with trust and affinity being either an attracting or repelling force. Simply put, the more trust one holds for an individual, the more influential their opinion is. Incidental conditioning, "a process that imparts a referential meaning to a piece of music in the listener's memory" (p. 34), may account for someone attaching special significance to a piece of music. Once established, that special significance would serve as a filter through which the piece would then be considered during all future encounters. These factors would seem to suggest that music preference is not simply a product of external influences, but also a product of internal influences as well.

The Individual

Personality

There is a significant amount of research investigating the relationship between personality and music preference. Cattel and Anderson (1953) were among the first to examine this relationship. Although their study's measure, the Institute for Personality and Ability Testing's (IPAT) Music Preference Test of Personality, produced inconclusive results, it helped to initiate a systematic and empirical approach to studying music preference as it relates to personality. Rentfrow and Gosling (2003) investigated the formation of music preference and its underlying contributors. Their six-study series examined trends in self-reported music preference, identifying various personality factors that may contribute to its formation. Their measure, the Short Test Of Music Preference (STOMP), is still used today by researchers across the globe and will be discussed in the following chapter. Dunn and colleagues (2011) investigated the relationship between personality and the music listening behavior of Royal Philip Electronics employees, exploring the validity of Rentfrow and Gosling's (2003) research. The researchers were not able to confirm the findings of Rentfrow and Gosling, but they were able to identify a strong correlation between self-reported music preference and listening habits.

Age and Preference

While personality should be considered in the discussion of musical choice, it is not the element of most interest to the present study. One of the key purposes of this study is to investigate the notion that music preference is formed during the adolescent to early- adulthood years. Levitin (2006) proposes that adolescence is the period when music interest first begins and when it is most important in terms of lasting musical tastes. Bonneville-Roussy and

colleagues (2017) assert that the pressures of conformity during adolescence are reflected in music choices, as youth choose music that is socially acceptable to their peers.

At least two studies have identified specific ages of importance for music preference: Holbrook and Schindler (1989) found 23.5 years to be the most significant age for music preference by surveying adults about their listening habits. In a *New York Times* article, Stephens-Davidowitz (2018) reported that music experienced at the ages of 13 years (for girls) and 14 years (for boys) are the strongest predictor of adult music tastes. His results were based upon a metadata analysis of Spotify data. Through the use of a self-report measure, the current study seeks to add to this body of research by also providing a mean age for music preference formation.

The Music

It cannot be overlooked that the music itself is one of the most salient factors to consider in terms of music preference. The previously listed elements influence one another towards making musical choices, but music is the stimulus that draws attention. Passive exposure to music, through years of listening, trains the brain to understand, and even predict, heard music (Hodges & Sebald, 2011). Expectancy Theory proposes that as music is heard, patterns are identified, and one becomes adept at predicting what is to occur next in a piece. It is this quality that is thought to influence preference – as one makes choices about the preferred level of predictability (Meyer, 1956).

However, this cognitive exercise of identifying elements of predictability may be unrelated to the emotional state induced by the music. Blood and colleagues (1999) suggest that affective considerations (happy vs. sad) "can be made in the complete absence of any ability to identify or recognize a melody" (p. 382). They examined the effects of the perception of musical

stability and tension (consonance and dissonance) on cerebral blood flow (CBF) by monitoring participants in a Positive Emission Tomography (PET) machine while a series of increasingly dissonant melodies were played. Their findings suggest that listening to consonant/dissonant melodies correspond with activity in the areas of the brain known to be involved in affective processing. These areas differ from those involved in the perceptual analysis of music (i.e., identifying predictability and structure), suggesting that different aspects of music can simultaneously influence the brain in different ways.

Music's impact on individuals is evident, but it is still unclear how or why it is able to do so. Hodges and Sebald (2011) propose two basic philosophical stances: meaning being either intrinsic to the music (absolutism), or meaning being found through what the music references (referentialism). Absolutism proposes that meaning and enjoyment are derived purely from the interplay of musical elements and/or the expression of those elements. Referentialism points to the effects that music causes in its listeners when defining meaning and enjoyment. It is unlikely that either position is complete in defining the listener's experience. Although, both stances are valid ways that music therapy clients may identify their own sense of musical enjoyment.

Clinical Implications

Music preference is an essential concept in the field of music therapy. Research has consistently shown that preferred music is most effective in reaching patient goals and objectives. In my practice as a music therapist, preference is foremost on my mind. I have learned through education and practice that my own interest in the music is, at best, a tertiary concern. No matter my own competency, patients who enjoy the music will be better served by it in a therapeutic context (Gibbons, 1977; Selle & Silverman, 2020).

This study seeks to provide further insight into the concept of patient music preference. It is hoped that by identifying the factors that contribute to preference, clinicians, such as music therapists, might be able to help patients identify the music that will work best for them in reaching their therapeutic goals. Additionally, for those patients who are unable to advocate for their own preference, such insight would allow for the better prediction of music preference, given an examination of the patient's history and records.

Research Purposes

Music preference is a multi-factorial construct, and while there exists a significant amount of research examining the many factors involved, the inter-play between those factors leaves room to investigate other correlations. This study seeks to identify a mean age for music preference formation and to examine the effectiveness of social factors on its formation. It is the goal of this study to add to the existing literature, and to reveal potential areas for future research.

Given the paucity of information regarding the formation of music preference, the following research questions were posed:

Research Questions

1. At what ages are current music preferences discovered? What social factors have the greatest influence on current music preferences?

2. Does self-reported music preference change?

3. For those for whom music preference had changed, at which age is it likely to change?

CHAPTER 2: REVIEW OF LITERATURE

The times you lived through, the people you shared those times with – nothing brings it

all to life like an old mix tape. It does a better job of storing up memories than actual

brain tissue can do. Every mix tape tells a story. Put them together, and they can add up

to the story of a life.

–Rob Sheffield, Love Is a Mix Tape: Life and Loss, One Song at a Time

When music is heard, it triggers a reaction that spans a spectrum of emotion, cognition,

imagination, and even physiology (LeBlanc, 1982). These responses are guided by the unseen

hand of experience, and many researchers have examined the personal, aesthetic, and social

factors that form that experience. This study seeks to build upon the past research and to begin

to bridge some of these existing concepts by collecting data from participants that cover multiple

areas of inquiry.

Theory of Preference and Appreciation

Even though preference is a natural construct that exists for all, across many domains,

before discussing *music* preference, a definition must first be provided. According to LeBlanc

(1982), "music preference decisions are based upon the interaction of information and the

characteristics of the listener, with input information and consisting of the musical stimulus and

the listener's cultural environment" (p. 29). This definition provides three distinct factors to

examine: "the characteristics of the listener," "…musical stimulus," and "…the listener's cultural

environment." In LeBlanc's model, these three elements are shown to work in concert to garner

the attention of the listener and to attach some type of strong significance to the musical

stimulus. None of these elements rises as most significant, or as always necessary in terms of preference. Instead, different factors offer potential pathways for preference to become activated (LeBlanc, 1982). Thompson and colleagues (2022) hold a similar opinion. They believe there to be three distinct forms of music appreciation: appreciating musical structure, self-oriented appreciation, and appreciating the causal and contextual sources of music. Both models present preference as a dynamic experience with contributing elements influencing one another continually. "All three forms of appreciation typically coexist and interact during an appreciator's experience of music but may shift emphasis during an experience or with repeated exposure" (p. 2).

Music and Personality

Other models have taken different approaches when examining the concept of music preference. Cattell and Anderson (1953) were possibly the first to approach the subject from a psychological perspective. They shared the believed that preference is a multi-faceted construct. It was their opinion that tests that focused solely on aesthetic responses offered an incomplete picture, feeling that a listener's "liking or disliking is evidently due to characteristics imported or projected into the physical sounds by the listener" (p. 446). Their Music Preference Test, created through the Institute for Personality and Ability Testing (IPAT), examined aesthetic responses to 100 music excerpts in the form of a participant's indication of "(L)ike," "(D)islike," or "(I)ndifferent," as they related to the IPAT 16 Personality Factor Questionnaire. While Cattell and Anderson were not able to show a strong correlation between elements of personality and preference through their testing, they did help to initiate a new line of research examining music preference through the lens of psychology. Dr. Cattell continued using this methodology in two other studies with similar results (Cattell & McMichael, 1960; Cattell & Saunders, 1954). He

and his team of researchers were able to provide evidence to support the idea that music preference is not purely a function of mere aesthetic appreciation, but one involving personality factors as well.

Rentfrow and Gosling (2003) similarly investigated the formation of music preference and its underlying contributors by asking participants about their aesthetic ratings of music and the corresponding personality factors. Six studies in total were involved. In Study #1, the researchers sought to provide empirical evidence to support the assumption that music holds importance for people in their daily lives. Seventy-four students were given a questionnaire with questions investigating this assertion. The results from the study revealed music to be of high importance in participant's daily lives and suggests that an examination of participant's music preferences could reveal as much information about their personality as would an examination of their personal hobbies.

In their second study, Rentfrow and Gosling (2003) investigated the basic dimensions of music preference using the Short Test Of Music Preference (STOMP), a measure consisting of music excerpts from 14 music genres (alternative, blues, classical, country, electronica/dance, folk, heavy metal, rap/hip hop, jazz, pop, religious, rock, soul/funk, and soundtracks), and a 7-point Likert scale, to rate the level of enjoyment, "with endpoints at 1 (*Not at all*) and 7 (*A great deal)*" (p. 1241). A sample of 1,704 psychology students completed the STOMP and an additional battery of personality measures. After a 3-week break, a smaller subset (n =118) completed the STOMP again for purposes of reliability. Through these measures, the researchers compared personality factor groups resulting from the psychological batteries, with the types of music most chosen by those groups. Statistical analysis yielded 4 categories for music preferences: Reflective and Complex, Intense and Rebellious, Upbeat and Conventional,

and Energetic and Rhythmic. The proposed categories describe both the energetic quality of the music and the qualities of personality most aligned with them.

Rentfrow and Gosling's (2003) third and fourth studies examined the generalizability of the previous findings with a separate local sample of students, and a subsequent sample of metadata from across the United States respectively. Participants in Study #3 were surveyed while Study #4 relied on a metadata analysis that was hand-coded by the researchers. Results suggested a confirmation of the previous studies' findings that music preference could "be organized into four independent dimensions: Reflective and Complex, Intense and Rebellious, Upbeat and Conventional, and Energetic and rhythmic" (p. 1244).

In Study #5, Rentfrow and Gosling (2003) investigated the qualities involved in the dimensions defined in the previous studies. Judges examined the previously collected data and reached a consensus regarding ideal examples of each of the 14 genres. The specific attributes of those examples were then agreed upon. The results suggested correlations between the proposed dimensions and musical attributes. For example, "the Upbeat and Conventional dimension expresses predominantly positive emotions…whereas the Energetic and Rhythmic dimension exhibits comparatively less positive and negative emotion…and tends to place greater emphasis on rhythm" (p. 1247).

The final study in their series attempted to reveal correlates between the identified musical dimensions and personality, as assessed via the Big Five Inventory (BFI) (a 44-item measure that probes five broad personality domains), and other such measures (Rentfrow & Gosling, 2003). The researchers revealed several potential correlations between the identified musical dimensions and personality types and laid the groundwork for future studies conducted both by Dr. Rentfrow and colleagues and other researchers from around the world (Habe et al.,

2018; Lorenzo-Quiles et al., 2020; North et al., 2004). Rentfrow, Goldberg, & Levitin's MUSIC (Mellow, Unpretentious, Sophisticated, Intense, and Contemporary) model, a similar categorization of musical dimensions, represents the continuation of this work and again suggests that preference can potentially be explained in terms of personality (Rentfrow et al., 2011).

It seems that much of the existing research supports the idea that music preference is a multi-faceted structure. According to researchers like Levitin (2006) and Thomas (2016), preference is an expression of complex brain functions, involving processes like myelination and brain chemicals called neurotransmitters. That being so, it is not surprising that research supports the notion of music preference's complexity. Returning to LeBlanc's (1982) definition, "music preference decisions are based upon the interaction of information and the characteristics of the listener, with input information and consisting of the musical stimulus and the listener's cultural environment" (p. 29). In his definition, LeBlanc puts fourth three areas of potential influence to music preference: "the characteristics of the listener," "…musical stimulus," and "…the listener's cultural environment" (p. 29). I have already discussed some of the research surrounding one aspect of "the characteristics of the listener," personality. As the present study deals directly with *age* as an independent variable, it is worth examining in this context.

Age of The Listener

Age is one of the key variables in the present study since it is an expressed goal of the research to test previous assumptions regarding age and preference. That is, the common assumption that music preference is solidified sometime between the periods of adolescence and early adulthood. Levitin (2006) proposes that musical interests begin to develop sometime around the ages of 10 and 11 years, even for children who had not previously expressed an

interest in music. He asserts that the teenage years are when music is most strongly linked to identity.

> Part of the reason we remember songs from our teenage years is because those years were times of self-discovery, and as a consequence, they were emotionally charged; in general, we tend to remember things that have an emotional component because our amygdala and neurotransmitters act in concert to 'tag' the memories as something important (p. 231)

Levitin narrows this influential age further, stating that "most people have formed their [musical] tastes by the age of eighteen or twenty" (p. 232). This holds true for me personally. The music that I remember most is the music that I encountered during my late adolescence. In fact, the music that I have the greatest fondness for is that music, mostly due to its ability to bring about feelings of nostalgia and memories from that period.

In a 2018 study, covered in the *New York Times*, Stephens-Davidowitz examined Spotify data, comparing song selection with age. His methodology involved Billboard Top 5 songs from between the years of 1960 and 2000 that were among Spotify's 4000 most-played songs for at least 1 age and gender in their catalog of users. When song release dates were compared to listeners' ages at the time of release, a trend arose. According to the study, the ages of 13 years for girls and 14 years for boys are the most influential in terms of music preference formation.

An earlier study, using a very similar methodology, was conducted by Holbrook and Schindler in 1989. In their study, excerpts from 28 Billboard Top 10 hits from between the years of 1932 and 1986 were compiled and presented to 108 participants. Participants rated their level of enjoyment using a 10-point Likert scale ranging "from 1 ('I dislike it a lot') to 10 ('I like it a lot')" (p.120). As in the previously mentioned study, participant responses were factored against

their age at the time their favorites were released. Results from this study suggested the most

significant age of influence, in terms of music preference, to be 23.5 years, much later than

Stephens-Davidowitz's (2018) research would suggest.

These studies hold significance for the present study because they suggest specific ages

that may be influential in terms of music preference. Their findings provide context for my

primary research question: At what ages are current music preferences discovered? The above

authors have varying opinions. Levitin (2006) and Stephens-Davidowitz (2018) appear to

support the possibility of adolescence being most influential to music preference, while

Holbrook and Schindler (1989) seem to suggest the influential age to be much later. These

differences will be examined further in a later chapter.

The Musical Stimulus

It was shown in some of the previously discussed studies how there is potential for ties to

exist between music preference and personality (Cattell & Anderson, 1953; Cattell &

McMichael, 1960; Cattell & Saunders, 1954; Rentfrow & Gosling, 2003; Rentfrow, Goldberg, &

Levitin, 2011). However, there seems to be some impetus that guides individuals to either

choose music that fits their own self-perception, or to adapt themselves to conform to whatever

forces drive their preference for music. It also seems that music preference choices represent, at

least in some part, who we are. Yet, while it is certainly possible to further examine the various

implications of this, the seminal element involved in music preference must not be ignored – the

music. It may be those internal and external influences that steer us towards a musical piece or

work, but it is still incumbent upon the music itself to grab the listener's attention and to initiate

our response.

In *This is Your Brain on Music* (2006), Daniel Levitin recounts having saved up $100 so that he could buy a stereo system to listen to his favorite records. His incessant listening eventually motivated his father to purchase a pair of headphones for him in hopes that he would agree to make his listening private. Up until that point, Levitin had been a casual listener, but the new headphones had literally changed how he heard his records. He was finally able to hear the subtle elements and nuances that had been buried in the playback through his cheap speakers. This changed his entire approach to music. As he states it, "to me, records were no longer just about the songs anymore, but about the sound" (p. 2).

Music is not merely a combination of tones and chords offered for aesthetic consideration; it is, in fact, sound – a physical phenomenon that literally affects the world around it (Hodges & Sebald, 2011). This means that it is impossible to not be affected by music, at least on a physiological level. "On the physiological level music evokes definite and impressive responses. It has a marked effect on pulse, respiration and external blood pressure" (Meyer, 1956, p. 10). However, it is likely not just these effects that cause a person to turn up the radio when hearing a new song that has just, this moment, become their new favorite. As indicated previously, there are other elements at work.

Music is ubiquitous, all societies are replete with it (Greenberg et al., 2021). Humans from across the world have grown up listening to the music of their culture and have become unknowing experts of its musical form and structure (Hodges & Sebald, 2011). It is thought that this familiarity with music, specifically our ability to predict the outcome of melodies and progressions, is developed over time in a process outlined in expectancy theory. The Theory proposes that our continual exposure to music teaches us on a subconscious level, giving most of the music that we encounter an air of predictability. In turn, it is this quality of predictability that

draws us to certain pieces (Levitin, 2006; Meyer, 1956;). This explains why it is possible to hear a song for the first time and to be able to accurately guess the melody and changes in the progression. According to the theory, we have listened to such an abundance of music that we have essentially become music critics, able to decipher good uses of harmony, melody, surprise, recapitulation, etc. However, while working our second, unfortunately unpaid, job as music critics, we become difficult to please. Music that fulfills our expectations too well seems too predictable and not intellectually stimulating enough. Music that defies expectation too well can be too confusing and difficult to understand. We tend to look for the proverbial "Goldie Locks Zone," where music is both predictable enough to understand and surprising enough to intrigue us (Hodges & Sebald, 2011; Levitin, 2006; Meyer, 1956).

Repeated exposure to music creates what is known as a neural network, a group of neurons that consistently activate together when exposed to a commonly encountered stimulus. This inter-connected web of neurons self-organize and learn, making the brain more efficient in handling that stimulus. The concept of statistical learning suggests that the more a stimulus is encountered, the stronger its associated neural network becomes, resulting in better processing of the stimulus (Hodges & Sebald, 2011). These concepts are what propel expectancy theory and describe the neurological mechanisms that drive the ability to predict musical elements and even, to some extent, develop some aspects of preference.

Once a piece is discovered that fits our stringent requirements, as developed through the years in our second career as music critics, we will then consider the "cultural environment" wherein the piece is presented. This brings us again to a discussion of context. In the previous pages I have outlined many studies that highlight the importance of how a piece of music is presented (Bonneville-Roussy & Rust, 2017; LeBlanc, 1982; Tang & Jhang, 2020; Thompson et

al., 2022). "The cultural environment" is a key factor in preference development, as it the setting in which the music is encountered.

Societal Influences: The Cultural Environment

The connection between music and culture is as enigmatic as the connection between the chicken and the egg – no one knows which came first. It is as if there is an endless cycle in which one gives birth to the other, which in turn gives birth to the first, and so on. Fortunately, there has perhaps never been another time in history when the link between music and culture was as visible as it has been in the modern era. One only needs to turn on the tv or walk outside to see how music and culture have influenced one another.

During the 90s, my friends and I proudly proclaimed our musical tastes and gravitated towards others who shared them. I remember specific times when the particular genre of teen angst that I was going through was sung about word-for-word by a favorite artist, as if they were writing the song about me. Teenagers in the 90s commonly aligned their outward expression with the music they identified with. Rockers, skaters, hip-hoppers, goths, trendy pop-lovers, cowboys, and ravers roamed school halls like gangs, with an allegiance to whatever CD was playing in their Sony Discman.

Youth are drawn towards peers that share common interests, and music is seminal among those interest (Franken et al., 2017; Hodges & Sebald, 2011; Levitin, 2006). In their Music Marker Theory, Ter Bogt and colleagues (2013) put forth the idea that music is relevant in the structuring of peer groups. Franken and colleagues test this idea in their 2017 study. The goal of their research was to determine if music preferences could predict an increase in engagement in externalizing behavior (e.g., antisocial behavior, alcohol consumption, and cigarette usage). Their study also investigated whether a shared preference for externalizing behaviors and music

genre preference influenced adolescent friend selection. In their Social Network Analysis of

Risk behavior in Early Adolescence (SNARE) study, 1786 Dutch students (Mean age at Time 1

= 12.91 years) received multiple batteries of tests during a pretest phase, and an additional 3

phases which took place over the course of a 2-year period between September 2011 and April

2013. During the three sample times (October 2012, December 2012, and April 2013),

participants were asked about their music preference, friendships, and participation in

externalizing behavior. The study's findings suggest that a similarity in music preference was

likely to play a positive role in adolescent friend selection, stating that for adolescents, music

serves as a "badge, communicating values, attitudes and opinions" (p. 1840).

Conversely, Bonneville-Roussy and Rust (2017) believe adolescents' desire for

belonging to be the driving force behind their music preferences. "Conformity can thus lead

adolescents to adopt different musical preferences to avoid negative social consequences" (p. 5).

Their study investigated how one's social network and interpersonal dispositions affect music

preference. In total, two separate studies comprised their research. In Study #1, 656 participants

were given the music genre portion of the Music Genre-Clips Test (MG-CT), developed in an

earlier study (Bonneville-Roussy et al., 2017), and a battery of measures investigating music

preference, the effects of family and peers on music preference, and interpersonal dispositions

such as a participant's tendency to change, conform, and need for uniqueness. *Age*, as an

influence, was determined by analyzing the preceding in terms of demographic data. The results

suggest there to be a mix of influences to music preference depending on interpersonal and social

factors. For example, a preference for classical music was positively associated with familial

influence and negatively associated with peer influence. Peer influence was found to have a

positive association with a preference for contemporary music. Additionally, preference for jazz

music was noted to increase with age for those who scored high in Conformity (Bonneville-Roussy & Rust, 2017).

In Study #2, 301 participants were given the same measures used in Study #1 in a nearly identical methodology, the exception being that music clips were then included in the MG-CT. Participants engaged in the study online and were asked to listen to a random sample of approximately 50% of the 51 clips from the MG-CT. After a two-week break, participants were asked to complete a battery of social influence questions. As in the previous study, results indicated social influences to have the strongest effects for those who scored highest in Conformity.

The literature seems to support the notion that music preference is, at least in some way, influenced by the desire to belong to a like-minded group. Greenberg (2021) suggests that this desire for a sense of belonging may even draw fans to perceive themselves to be in community with the artists they most admire. "We hypothesize that people have a preference for the music of artists that have similar personality characteristics as them" (p. 137). Their hypothesis, that they termed the *self-congruity effect on music*, was the basis for their series of three studies. In Study #1, 6279 participants, acquired for the Musical Universe project (Greenberg, & Rentfrow, 2017) through news articles on major media outlets, were asked to selectively make broad generalizations about the personality of 1 of 54 popular artist and their fans, and then questioned about their feelings about that artist. Results indicated that participants believed there to be a strong connection between the personalities of artists and their fans (Greenberg et al., 2021).

In Study #2, to offset the self-report and perception bias potential in Study #1, researchers analyzed users of the MyPersonality project who had liked the Facebook page of at least one of the artists presented in Study #1 (Kosinski et al., 2015). Participants for the MyPersonality

project had self-reported about their Big Five personality traits. The researchers then applied

natural language processing to build a personality profile on the artists. When the artists' profile

models were compared to an average-fan model, created by averaging the fan data for each artist,

similar trends to those discovered in Study #1 were found. Just as the participants of the

previous study had believed, there were similarities between the models, validating the concept

of self-congruity in music preference. In Study #3, the data from Study #1 and Study #2 were

tested to investigate if they could be used to predict a participant's preference. Results indicated

that such predictions were somewhat reliable. Overall, the study provided strong evidence to

support the idea of self-congruity, that listeners are attracted to the music of artists that share

similar personality traits (Greenberg et al., 2021).

　　　In extreme cases, fans will come to idolize and even worship their music icons. In a

qualitative study by Derbaix and Korchia (2019), 15 fans who had identified themselves as

having prioritized the individual celebration of a specific artist, were interviewed about their

feelings and personal thoughts about those artists. Participants were revealed to have considered

their icons to fulfill one of four roles: quality manager, guide, close friend, or god. According to

their findings, fans that consider their icons to be *quality managers,* feel less of a personal

connection with the icon. Their main focus is the music. They believe their icon to be curators of

the music and "refuse to pay too much attention to the musicians' private lives" (p. 113). The

fan who considers their icon to be a *guide* is primarily interested in the music but is still

interested in the life of the icon, specifically their public persona. A fan in this category might be

interested in other aspects of the icon's life in order to better understand their music. The fan

that considers their icon be a *close friend* has surpassed the level of fan in their mind, bringing

the icon into their own personal lives in some way. This type of fan typically learns intimate and

obscure information about their icon due to that icon's openness with the personal details of their life. In the examples given in the study, one participant recounted having an almost romantic affection for her icon, while another imagined having a special relationship with his icon despite having no real connection with him. The last type of fan considers their icon to be a *god*. That is, they attribute an extra quality to their icon that is often beyond the ability of the rest of humanity. These fans often dedicate portions of their lives (i.e., time, emotions, living space) to their icons, sometimes even becoming collectors of artifacts and memorabilia. In the case of many of the participants in the study, it seemed there was also an inclination to spread the news about their icon, often finding joy in introducing new people to their works.

Final Considerations

Music preference has been shown to be a multifaceted process, involving elements of self, the music, and social influences. While this is not an all-encompassing perspective, it does provide a robust look at how our response to music is not based on any one element. Simultaneously, many processes are interacting, causing us to unconsciously consider our experiences and desires in the moment, before issuing a verdict. We are continually on the job in our roles as music critics, and our tastes are always being refined.

Though I have examined many aspects of music preference formation, I have not discussed the research as it pertains to a few other variables in my study: *gender* and *musicianship*. This is due to the lack of findings on these two variables as they directly influence preference. For instance, *gender* has been mentioned in many studies (Bonneville-Roussy et al., 2013; Clark & Giacomantonio, 2013; Leblanc, 1982; McCown et al., 1997; Robinson & Culp, 2021) but mostly as a secondary consideration, and usually towards pointing out mild relationships between energetic music and male music preference. Even less research could be

found to examine the relationship between music preference and being a musician (Stephens-Davidowitz, 2018; Thompson et al., 2022). Gender will be discussed in relation to the age of preference.

The final consideration of this study will be to examine whether preference changes over time. This is another area of research that is very narrow in scope or lacking, (Bonneville-Roussy et al., 2013; Howe et al., 2015), but one of direct interest to my study, and will discussed in the chapters ahead.

CHAPTER 3: METHOD AND DESIGN

The present study employed a non-experimental survey approach to investigate factors involved in the formation of music preference. Typeform (Typeform.com) was chosen for the dissemination of the survey due to its ease of use, and appealing visuals. The adult participants engaged in the study online and were not compensated for their participation. The platform allowed for the real-time collection and compilation of data, and eventual export into various spreadsheet formats.

Participant Recruitment

The recruitment goal of this study was to obtain the most heterogenous participant sample possible. It was hoped that such diversity would provide the best evidentiary support of findings. to achieve this, the researcher leveraged multiple methods to recruit volunteers, including Findparticipants (Findparticipants.com) - an online participation recruitment platform, Facebook (Facebook.com), and word of mouth. Findparticipants, which allowed for the solicitation of volunteers interested in participating in scientific research, was the primary source for sample recruitment. Two criteria were required for participation: a) participants were required to be at least 18 years of age; and b) participants were required to be able to comprehend English.

Findparticipants provided for an advertisement to be emailed to up to 1000 potential participants per message. Six messages were sent in total to 4842 potential recipients. The dates and totals of the sent messages are listed in Table 1.

Table 1

Survey Distribution via Findparticipants.com

Date	Sent Total	Opened	Clicked Link
7/6/20	964	115	89
7/20/20	963	104	82
8/5/20	970	79	83
8/18/20	978	85[a]	169[a]
8/31/20	967	94	72

[a] This value may represent error, as the number of individuals who clinked the link embedded in the email is greater than the number of individuals who opened the email.

In addition to using Findparticipants, recruitment was also solicited via the Facebook (Facebook.com) social media platform. Posts were made to the pages of five Facebook user groups requesting participation. Three of the posts primarily reached music therapists, one post reached music production professionals and hobbyists, and one post reached Christian singles in Sacramento, CA. The specific groups were chosen due to the author's personal membership in them. It is worth noting that the author held no reputation in any of the groups that would warrant involvement due to an association with his name alone. A nearly identical advertisement to what was sent through Findparticipants was posted to the Facebook groups (shown in Appendix C). Information about the posts to Facebook are listed in Table 2. In total, approximately 159,000 people were potentially reached through the combination of Facebook posts, Findparticipants, and word of mouth – which verbally referenced the Facebook posts. It is also worth noting that the largest portion of the total of potential participants, 140000, represent members of the Logic Pro Users Group. Due to the nature of that group, it is possible that a very small number of members saw or read the post. The post to that group received no responses on

Facebook. Between July 6, 2020, and September 4, 2020, 159 participants started the survey and

101 fully completed it, a completion rate of 63.52%.

Table 2

Survey Advertisements Posted on Facebook

Group Name	Date Posted	Members
Bayside Singles Health	7/6/20	400
Logic Pro Users	7/6/20	140000
Music Therapists Unite	7/6/20	8000
MT-BC Study Group	7/8/20	1000
Music Therapy Leaders	7/15/20	5000
	7/6/20	-
	7/8/20	-
Personal Page	7/15/20	-
	7/20/20	-

Variables

The primary variables in the study are *age of preference formation* (i.e., the age at which

music preference is formed) and c*hange fluidity* (i.e., the extent to which preference changes

once established). Secondary variables in this study include *social environment*, *classroom size*,

listening context, and *influences on preference*. Demographic information was also collected

regarding participant *ages*, *gender identity*, and whether they consider themselves to be a

musician. The variables used in this study were derived through an examination of the literature,

which illuminated factors such as age and change fluidity (Bonneville-Roussy et al., 2013),

identity (Thompson et al., 2022), and social influences (Franken et al., 2017) as potentially

having an impact on music preference. Through continued research, it was discovered that the

variables chosen were consistent with those identified in the research conducted by LeBlanc (1982). However, not all variables identified in LeBlanc's work were included in the present research. This will be discussed in the Limitations. The variable names and types are described in Table 3.

Table 3

Variables and Descriptions

Variable Type and Name	Description
Primary	
Age of Preference	age when preferred music was first discovered
Change Fluidity	binary - whether a preference change has occurred in adulthood
Secondary	
Social Environment	e.g., Major Metropolitan, rural, etc. where participants spent their formative years
Classroom Size	average classroom size during K-12 education
Influences to Preference	Sources that introduced participants to their preferred music. (e.g., parents, friends, radio, etc.)
Listening Context	daily setting that may influence which preferred music participants choose (e.g., out with friends, driving alone, etc.)
Demographics	
Age	participant's age in years
Gender Identity	participant's gender identity at the time of survey completion
Musicianship	whether participants consider themselves to be a musician as according to the definition "any person who plays a musical instrument (including voice) or is especially musically talented."

Survey

This study employed a single-group, post-test, non-experimental survey design. The Typeform (typeform.com) online survey platform was chosen to disseminate the measure due to its use of visually enticing graphics and modern interface. The platform allowed for the creation of a measure with multi-level questions in a variety of types, enabling participation from anywhere in the world. Results were collected anonymously and stored securely on the Typeform servers, requiring a password to access the data. The collected survey results were then accessible online, or downloadable in either .csv or .xlsx formats.

Study participants who followed the links received from Findparticipants.com or through social media, were taken to Typeform.com, where they were presented with an introduction page that explained the purpose of the study and set expectations for participation, such as time required to complete and how their data would be handled. The introduction also explained the minimal risk involved in completing the study and included the contact information for the primary researcher, faculty advisor, and the University's Office of Research and Sponsored Programs. At the end of the introduction, individuals were asked to give consent for their participation by clicking a button labeled "I Consent," which served as the formal consent for participation in the study. Similarly, a subsequent question asked participants to declare that they were at least 18 years of age. Examples of these pages may be found in Appendices D, B, and E.

Direct inquiry about music tastes will most likely contain representations of heuristics and biases. As Cattell and Saunders (1954) stated:

It must, indeed, be admitted that that there is a considerable possible element of error in dealing with responses to music by means of questionnaire type of approach and that any

analyses based on a literal use of the apparent meaning assigned by subjects in verbal

responses is scientifically questionable. (pp. 5-6)

This passage speaks to a live music condition with verbal responses, but the concern raised by

Chaplan (as cited by Cattel & Anderson, 1953) is that "the written or stated reactions to music

[reveal] semantic, culturally conditioned replies and are not necessarily conclusive" (p. 5).

Demographic Items

In approaching demographic information, it seemed prudent to focus on two areas of

information, the "who" and the "where." To answer questions of "who" participants were, the

dimensions of *age* and *gender* were chosen; with *age* being necessary to potentially determine

the contemporary relevance of music choices, and *gender* used to provide insight into potential

differences in music preference related to gender. The "where" questions were added to allow

for a cursory investigation into the social settings that may have accompanied the formation of

music preference. To examine this, participants were asked about their city and classroom sizes.

These dimensions were tracked through the variables *classroom size* and *social environment*.

The inclusion of these variables is consistent with researchers such as LeBlanc (1982), who

suggests that peers, family, authorities, and the social environment have directly influence music

preference.

Musicianship Status Item

Additionally, the question, "Do you consider yourself to be a musician?" was asked in

conjunction with the definition: "musician: any person who plays a musical instrument

(including voice) or is especially musically talented." This was to allow for comparison between

self-proclaimed musicians and non-musicians, acknowledging the possibility that a musicians'

relationship to preference may be different than that of a non-musician, even if the title is merely aspirational.

Music Listening Habits

        To prompt participants to begin thinking about how music preference is expressed in their daily lives, real-world scenarios were included, posing questions about listening habits. The scenarios were prefaced with the question, "What type of music would you listen to…?" and included activities such as relaxing, driving, and getting prepared for work. These scenarios attempted to bypass pre-prepared responses by causing participants to consider their own listening habits during a given day. These questions were intended to serve as a primer for the next set of questions that more directly dealt with the concept.

Favorite Music Items

        By this point in the survey, it was hoped that participants will have imagined themselves in various activities throughout their day and have asked the question "what *would* I listen to?" They were then presented with three groups of questions which asked them to identify their favorite types of music, the age they were introduced to it, and how they were introduced to it. Individuals were asked for their current, second, and third choices separately in combination with the two follow-up questions. Responses were organized using drop-down options for music genre of preference (Appendix F) but allowed for the freeform entry of age. Participants were offered multiple choices to explain how they were introduced to the genre but also had the option of choosing *other*, giving them the ability to provide a freeform entry.

        Genre was chosen as the level to which preference was allowed to be expressed. As Rentfrow and Gosling (2003) state, "when people discuss their music preferences

they tend to do so first at the level of genres and to a lesser extent subgenre and only later step up

to broader terms (e.g., loud) or down to specific artists" (p. 1241). This is reflected in the

difficulty that is often expressed by individuals when asked to identify their favorite artist or

song. It is often much simpler a task for them to select a genre or style of music that they enjoy

than to pick a specific artist or band – extreme fans excluded. The list of genres used in this

study (Appendix F) are borrowed from the STOMP-R, which is the most updated version of the

measure created in Rentfrow and Gosling's 2003 study. Through extensive research, interrater

reliability, and direct conversation with music industry experts, the researchers devised a list of

14 genres for the original STOMP. The STOMP-R, a measure they created through the

continuation of their work, contains 23 genres instead of the initial 14.

Preference Persistence

While much has been asked about music preference and the social and psychological

implications that come with it, its existence is not generally questioned. It is widely accepted

that preference for one piece/style/type of music over another is a part of the human experience.

However, there is a question that often goes unasked in research contexts: does music preference

change? To investigate this potentially underrepresented corner of the phenomenon, the present

study asked participants "Has your preference changed over time?" This question was asked in

such a way that a *yes* answer led to a follow-up question, "at what age did your preference

change?" A *no* answer would bypass the follow-up question. With the unprecedented

availability of music in modern society, individuals are exposed to more music, and of a larger

variety, than ever before. It stands to reason that in such an environment, one might discover

new sounds that they like. One might even find new music that provides the same type of

unidentifiable satisfaction that their lifelong favorites supply. This is truly an avenue for future research!

To conclude the survey, participants were asked to provide a song that they "love." The question asked them to provide a song/piece and artist/composer from their favorite type of music. This question served as a way for participants to provide an example of their chosen favorite genre and allowed the researcher to verify that his definition of a genre and that of participants aligned.

Data Analysis

Data was analyzed to identify trends in music preference formation. Statistical analysis was performed using IBM Statistical Package for the Social Sciences version 29.0. Data was recorded in a combination of numeric and string entries corresponding to multiple choice categories and freeform text entries. Whenever possible, freeform entries were matched to either an existing category, or another existing freeform entry. This occurred twice during the data analysis. One participant responded "Sex: female, gender: cis womxn" when asked to identify their gender identity. The entry was coded as "female" since the participant explicitly identified this in their entry. When describing the influences on music preference, two participants responded "school" and "'school". Since the two responses were identical except for an apostrophe, they were coded under the same category, "school". All other freeform text entries were treated as unique responses.

Research Question #1

To answer the first research question, *at what ages are current music preferences discovered?*, participants were directly asked when they began listening to their top three favorite genres (Appendix A, Items 12, 15, & 18). The existing research suggests that music preference

is most associated with the music that is first encountered sometime between adolescence and early adulthood, with some researchers identifying the teenage years as most significant (Levitin, 2006; Stephens-Davidowitz, 2018), and some believing it to be the adulthood years (Gibbons, 1977; Holbrook & Schindler, 1989). For analysis, descriptive statistics were used to analyze the self-reported preference ages identified through the measure (Appendix A, Items 12, 15, & 18) according to participants' corresponding stated ages (Appendix A, Item 1).

Research Question #2

To answer the second research question, *what social factors have the greatest influence on current music preferences?*, participants were directly asked how they were first introduced to their stated preferred genres (Appendix A, Items 13, 16, & 19). Influence data was analyzed using descriptive statistics and chi-square analyses were used to detect whether one factor was reported with higher frequency than the others. Further, an examination of standardized residuals was used to identify which specific factors differed significantly from expected values.

Research Question #3

To answer the third research question, d*oes self-reported music preference change?*, participants were directly asked if their music preference has changed over time. Data was analyzed by using frequency statistics to determine the number of participants acknowledging that a change in preference had occurred (Appendix A, Item 20).

Research Question #4

To answer the fourth research question, *For those for whom music preference had changed, at which age is it likely to change?*, participants were asked to provide an age for when that change occurred (Appendix A, Item 21) if they answered affirmatively that their preference

had changed in Appendix A: Item 20. Descriptive statistics were used to identify a mean age for

when the change had occurred.

CHAPTER 4: RESULTS

Participant Characteristics

Of the 159 participants who initiated the survey, 101 participants completed all questions and submitted their answers, a completion rate of 63.52%. Participants ranged in age from 18-73 years (M = 33 years), with 73.3% identifying as female (n = 74), 25.7% identifying as male (n = 26), and 1% as non-binary (n = 1). When participants were asked if they consider themselves to be a musician, 60.4% (n = 61) answered in the affirmative while 39.6% (n = 40) did not. The majority of participants attended schools with classrooms of more than twenty students during their K-12 education (79.2%, n = 80), and grew up in suburban neighborhoods (65.3%, n = 66).

Statistical Analyses

Research Questions

Research Question 1. At what ages are current music preferences discovered?

Results indicate the age at which participants' *Current Favorite Music* was first discovered is M = 12.85, with males having a mean age of M = 12.46 and females a mean age of M = 12.99. For *Second Favorite Music*, the mean age for males was M = 13.23 and M = 12.58 for females. For *Third Favorite Music,* the results indicate a mean age of M = 12.88 for males and M = 13.42 for females. Across *Current*, *Second*, and *Third Favorite Music* categories, the mean age during which participants began listening to their preferred music genres was M = 13.17 *(SD = 5.18)*. When broken down by gender (n = 26, male; n = 74, female; n = 1, non-binary), results indicate mean ages to be M = 12.88 for males, and M = 13.17 for females. As there was only one participant that identified as non-binary, an individual mean value could not be calculated for this gender category. Statistical analysis was conducted to determine if significant relationships

existed between participants' identified gender and age of preference. No significant trends were

discovered. Table 4 presents the individual and total value breakdown by age and preference.

Table 4

Age of Preference Discovery

How do you identify your gender?		Current Favorite Music	Second Favorite Music	Third Favorite Music	Average Preference Age
Male	Mean	12.46	13.23	12.88	12.8472
	N	24	26	26	26
	Std. Deviation	6.757	8.594	7.301	5.00878
	Minimum	2	2	2	2.00
	Maximum	30	45	40	25.00
	Range	28	43	38	23.00
	Variance	45.650	73.865	53.306	25.088
Female	Mean	12.99	12.58	13.42	13.1712
	N	70	73	73	74
	Std. Deviation	7.754	7.485	7.367	5.2274
	Minimum	2	1	1	5.33
	Maximum	45	50	45	34.00
	Range	43	49	44	28.67
	Variance	60.130	56.021	54.275	27.326
Total	Mean	12.85	12.75	13.28	13.1733*
	N	94	99	99	101*
	Std. Deviation	7.480	7.751	7.317	5.18218*
	Minimum	2	1	1	2.00*
	Maximum	45	50	45	34.00*
	Range	43	49	44	32.00*
	Variance	55.956	60.084	53.531	26.855*

*Value includes non-binary participant totals

Research Question 2. What social factors have the greatest influence on current

music preferences? Participants were given five options to describe the method for which they

were introduced to their preferred music choices (i.e., friends, parents, radio, internet streaming, siblings) and an "Other" option to write in a freeform response. Using the "Other" option, participants supplied an additional twenty-three individual responses, increasing the total number of influences across all *Current*, *Second*, and *Third* favorites to twenty-eight unique answers. The freeform text entries were manually codified to be included in the dataset. A chi-square goodness of fit test was conducted to see if the proportions of participants surveyed were reportedly Influenced by one type of social factor over another.

For *Current Favorite Music,* the proportions differed significantly, $\chi2(10, N = 101) = 138.495$, $p < .001$, wherein the number of participants were reportedly influenced most by parents ($n = 32$), friends ($n = 24$), and radio ($n = 20$) exceeded the expected frequency of 9.2. Therefore, there is sufficient evidence to reject the null hypothesis. For the *Second Favorite Music*, the proportions also differed significantly, $\chi2(14, N = 101) = 183.109$, $p < .001$, wherein the number of participants were reportedly influenced most by friends ($n = 27$), radio ($n = 26$), and parents ($n = 16$) exceeded the expected frequency of 6.7. Therefore, there is sufficient evidence to reject the null hypothesis. For the *Third Favorite Music*, again, the proportions differed significantly, $\chi2(12, N = 101) = 152.950$, $p < .001$, wherein the number of participants were reportedly influenced most by radio ($n = 27$), friends ($n = 26$), and parents ($n = 18$) exceeded the expected frequency of 7.8. Therefore, there is sufficient evidence to reject the null hypothesis.

Among the influences, *parents*, *friends*, and *radio* represent the largest portion of responses in all 3 preference categories. *Parents* were identified as the most influential factor for participant's *Current Favorite* music, accounting for 31.7% of the responses ($n = 32$). *Friends* and R*adio* were reported as having almost identical influences towards *Second* and *Third* music

preference, with *Friends* being most influential towards *Second Favorite Music*, representing

26.7% of responses (*n* = 27), and *Radio* most influential towards *Third Favorite Music*,

representing 25.7% of responses (*n* = 26). It is worth noting that all three influences represent

the top three answers across all preferences. Figures 1 – 3 show the totals for each influence

category according to favorite music ranking.
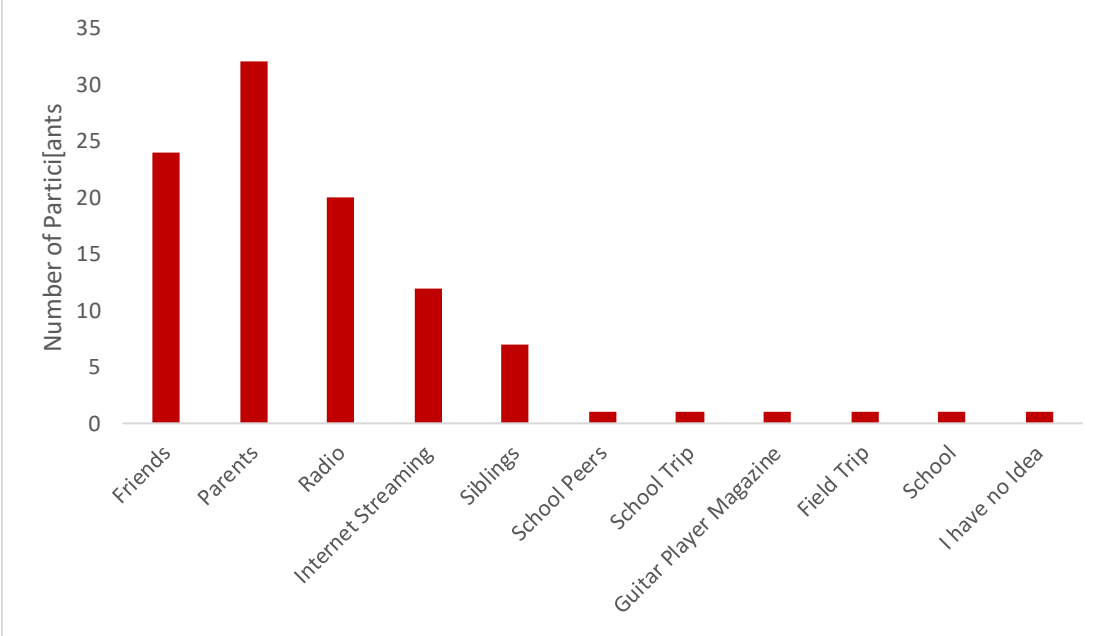
Figure 1

Current Favorite Music Influences

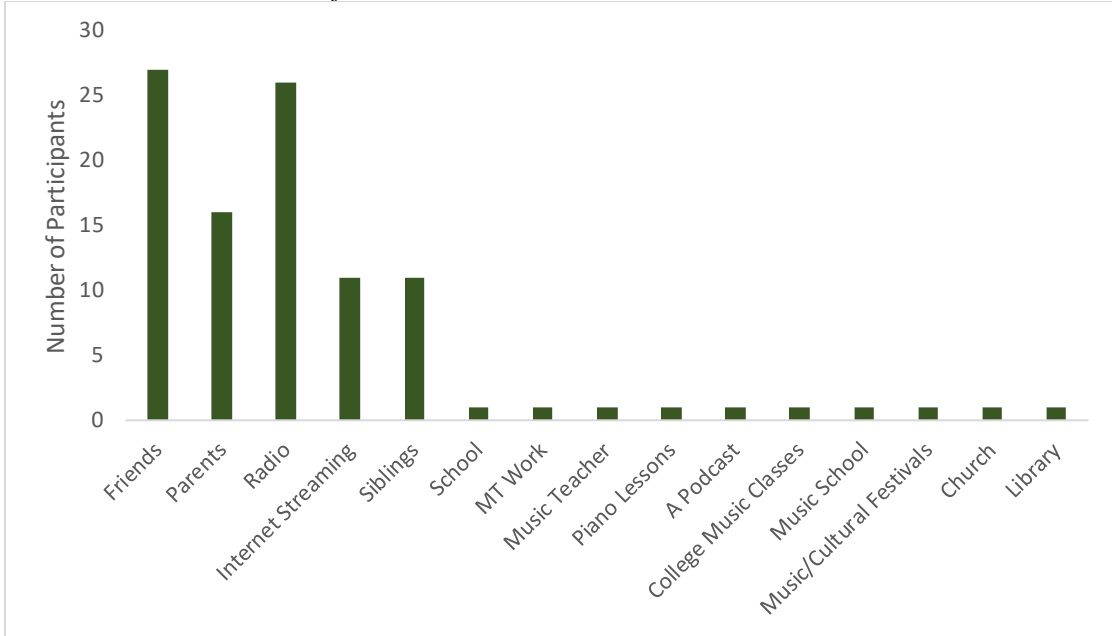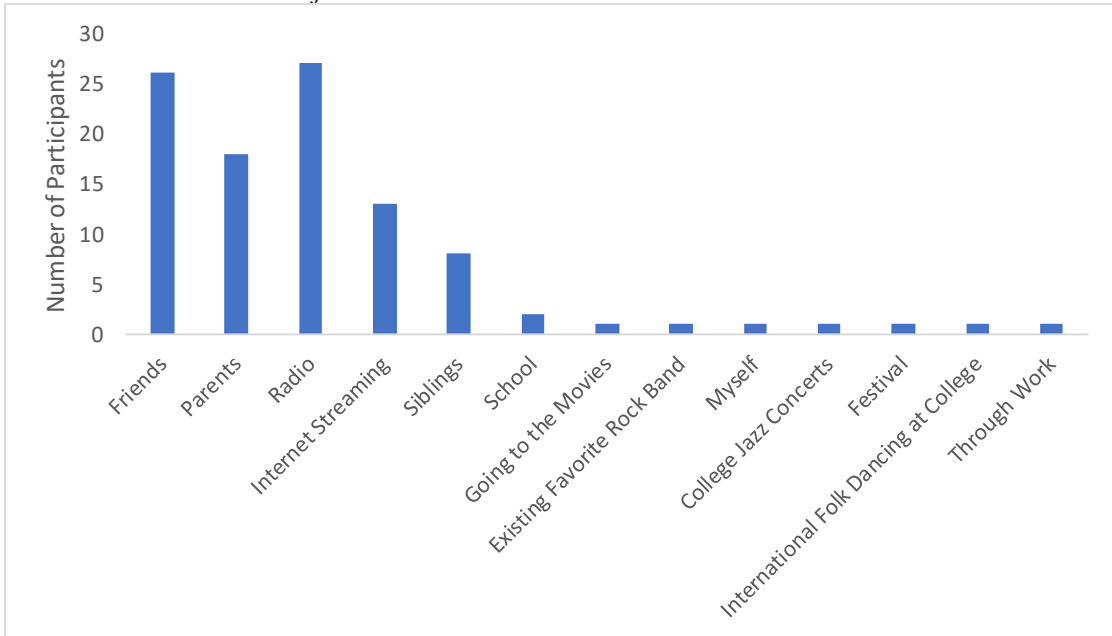**Figure 2**

Second Favorite Music Influences

Figure 3

Third Favorite Music Influences

Research Question 3. *Does self-reported music preference change?* The majority of study participants, 69.30% ($n = 70$), reported that their preference for music had changed in some way over time. However, the text description offered to participants did not qualify the phrase "over time." As such, very few inferences can be made regarding the time of change in relation to current preferences. This will be discussed in the Limitations section of the next chapter.

Research Question 4. *For those for whom music preference had changed, at which age is it likely to change?* Of those for whom preference had changed over time, the mean age identified for when music preference had changed was 20.54 years. No statistically significant trends were identified when investigating demographic differences in relation to this statistic.

Validation

To investigate the validity of participant genre choices, the question "Name one song that you love" was included and utilized a freeform text entry box (Appendix A, Item 23). The supplied example asked for both a song title and artist name. All participants who completed the survey supplied an answer for this item ($N = 101$), with 93.1% ($n = 94$) providing both a song title and some type of source for the song (i.e., artist/movie/symphony). Of those partial entries, where only a song title was provided ($n = 7$), the artist most associated with the song was chosen through referencing Google (Google.com). Only a single entry was unable to be categorized this way, and thus not included in the dataset.

Each individual text entry was manually entered into Chosic (Chosic.com) to identify the song genre. All genres that were included in the study and any sub-genres or variations were recorded. For example, a song that returned a genre of "pop punk, alternative, rock" would be recorded as being in the pop, punk, alternative, and rock genres. However, only genres that directly referenced study genres were included. For Example, a song that returned a genre of

"dark wave, futuristic, death metal" would only be listed under the metal genre. If a song could

not be found through Chosic, Google was used to identify another source for the information.

Exceptions were made for the Showtunes genre (which was used for results such as "Broadway",

"Showtunes", and "Hollywood"), the Religious genre (which was used for any overtly religious

genres such as "Christian Rock" and "Gospel"), and the World genre (which was used for any

music that was both in a language other than English and listed only under a genre specific to the

region suggested by the language). Additionally, the Dance/Electronica genre was used to

categorize the "Techno" genre. Overall, only 20.79% (n =21) of all responses to this question

(Appendix A, Item 23) required manual modification in one of the ways described above. In

total, only 3.96% (n = 4) of entries were not able to be identified using the methods above and

thus not included.

Once the genres of the text entries were identified, they were manually compared against

participants' current, second, and third favorite music genres. Those answers which were

consistent with at least one of the three favorites were given a value of 1 and representative of a

response that is consistent with third-party genre classification. Of all codable responses ($n =$

97), 69.3% ($n = 70$) were found to be consistent with third-party classification.

CHAPTER 5: DISCUSSION

Music preference is a multi-factorial construct that involves many different elements, including those of the listener, the listener's social environment, and the music itself (LeBlanc, 1982). This study investigated some of these factors with the intention of identifying the ages during which music preference is discovered, and what social factors are of the greatest influence towards it being established. In the study, 159 participants were asked questions about their music preferences through an online survey. In total, 101 participants completed the measure, with 73.3 % identifying as female, 25.7% identifying as male, and 1% identifying as non-binary. Results suggest the mean age for music preference formation to be 13.17 years ($N = 101$) when all results were averaged. *Parents*, *Friends*, and the *Radio* were identified as the most influential social elements towards music preference, and were selected by participants significantly more frequently than other options. When participants were asked if their preference had changed over time, 69.30% ($n = 70$) responded in the affirmative, stating that the change had occurred at a mean age of 20.54 years. Although the measure utilized in the study included questions which asked about many aspects of participant's lives, such as classroom settings and whether or not they were musicians, not all questions revealed statistically significant contributions and thus were not included in the analysis.

Findings by Research Question

Research Question 1

At what ages are current music preferences discovered? The findings revealed through investigating this question are similar to what is found in the literature of Levitin (2006), who suggests that music preference first begins to form around the ages of 10 or 11, and Stephens-

Davidowitz (2018), whose findings identify the ages of 13 for girls and 14 for boys to be the most influential in terms of preference. When accounting for differences in gender, ($n = 26$, male; $n = 74$, female; $n = 1$, non-binary), the identified ages ($M = 12.88$ years for males, and $M = 12.67$ years for females) suggest males to possibly establish preference slightly faster. An analysis of gender differences as they pertain to age of preference was not conducted but may be an area for future researchers to investigate.

While these more contemporary studies allude to preference as an adolescent endeavor, the literature from previous decades suggests preference to become established much later in life. Holbrook and Schindler (1989) found that their participants' maximum musical preference attachment was to pieces that were popular when participants were approximately 23.5 years. Gibbons (1977) found that participants in her study significantly preferred the music of their "young adult years," which was identified in the study as "between 20 and 30 years of age" (p. 182).

With such a wide range of results found in the literature, it may seem prudent to look more closely at the populations and methodologies that produced the results, to identify some trend which would account for the variance. Holbrook and Schindler (1989) presented recordings of Billboard Top 10 hits to be rated by participants. Stephens-Davidowitz (2018) performed a meta-data analysis on Spotify (Spotify.com) user listening habits. Gibbons (1989) presented piano interpretations of popular songs which would have been popular during the lifetime of her participants and asked them to rate their level of enjoyment. Gibbons' (1977) and Holbrook and Schindler's (1989) methodologies involved the use of live participant samples and allowed them to rate their own level of enjoyment. Stephens-Davidowitz (2018) analyzed existing data and determined a user's level of liking by comparing the listener's age at the time

of the study, to the year their most-listened to songs were popular. While the three studies used different methodologies, they all based their analysis on an assumption that listeners had become exposed to their favorite music while it was most popular.

It is possible that results are indicative of the musical culture of the times the studies were conducted. The present work, as well as the works of Levitin (2006) and Stephens-Davidowitz (2018) literally occur in a different century than those of Gibbons (1977) and Holbrook and Schindler (1989). Access and exposure to music has undoubtedly changed over the course of the last century, and especially since the turn of the 21st Century. Technology has impacted our access to music greatly and has taken it from being a commodity to a resource, giving way for it to fill public spaces and for its use for mood regulation and emotional arousal (North et al., 2004). Therefore, it is possible that this increased exposure has accelerated the rate at which we attach to music.

A mother recently shared a story with me about her son. Her six-year-old's new favorite song is "Mr. Roboto" by Styx because he had asked his smart-device to play "robot songs". This child's increased access to music through technology has not only given him access to conceivably any type of music but has introduced him to a work that he might not have been exposed to through more common sources (i.e., parents, friends, radio). This serves as a great example of how preference may no longer be as connected to contemporaneous works in the future. As this boy grows up, his music preference and identity, may be influenced not only by this song, but by the door it opens to the works of Styx and other such artists. Although it is not uncommon today to meet a young Beatles or Tupac fan, one could imagine such anachronistic tastes to increase in the future, considering this new level of accessibility.

Research Question 2

What social factors have the greatest influence on current music preferences? The findings revealed through investigating this question suggest there to be 3 salient social influences in terms of music preference, the influence of *parents*, *friends*, and *radio*. This is consistent with LeBlanc (1982) who points to the influences of peers, family, and authorities among the factors most responsible for preference. While *radio* was identified among the most influential social factors, it is possible that it merely represents an exposure medium, and that this will change as society increases its use of different mediums, such as the *internet,* in the years to come.

The research has shown that certain types of personal relationships hold strong significance towards the development of one's *likes* and *dislikes* (LeBlanc, 1982; Levitin, 2006; Hodges & Sebald, 2011; Franken et al., 2017). It may be that such influences maintain their significance while the influence of exposure mediums (i.e., concert halls, gramophones, radios, internet streaming) continue to evolve as they rise and fall in popularity over time. This may be an area for future research, as exposure mediums continue to develop.

Research Question 3

Does self-reported music preference change? The findings revealed through investigating this question suggest that music preference does indeed change. Approximately 69.30% ($n = 70$) of participants self-reported that their preference had changed in some way over time. However, this question (Appendix A, Item 20) did not include language that was specific enough to make inferences about what participants may have meant by answering this question in the affirmative. This will be discussed further in the Limitations section.

Research Question 4

For those for whom music preference had changed, at which age is it likely to change?
The findings for the present study reveal that participants who identified that their preference had changed in some way over time, self-reported the change to have occurred around the age of 20.54 years. As discussed earlier, the wording for the question associated with music preference change (Appendix A, Item 20) was not specific enough to be used to determine relationships between the initial establishment of music preference and any changes thereafter. However, given that there is a significant difference between the identified mean age for music preference establishment ($M = 13.17$) and the identified age of preference change over time ($M = 20.54$), it can be inferred that some type of change in preference is possible to occur after it has first been established.

<div align="center">

Limitations

</div>

While the present study was able to provide answers to all research questions, there were several limitations encountered.

Participation and Recruitment

Participants were recruited through social media, word of mouth, and through the website platform Findparticipants.com. By far, most survey responses were received through the distribution platform (Table 1). By being registered for a website such as Findparticipants.com, it can be assumed that those participants were at least aware of academic research and were already willing to participate in studies of interest to them. Research has shown that volunteer study participants are often better educated, of a higher SES, and more extroverted than non-volunteer participants (McMillan & Schumacher, 2005). Despite this limitation, demographic variables reveal there to be a fair amount of diversity among participants. Although, a larger

sample may have provided stronger evidentiary support of findings. Additional dissemination methods could have been leveraged to increase both the number of participants and to ensure that a vast and heterogenous sample was achieved.

Instrumentation

The Typeform.com survey platform allowed for the creation of a visually appealing survey with multi-level questions. There were no devised questions that could not be supported by the platform. This, however, did not completely eliminate design flaws from the measure. One such oversight was found in Item 20 (Appendix A, Item 20), in which no definition or explanation was given for the terms *change* and *over time*. It has become clear, during the analysis, that participants' individual definitions of these terms could vary significantly. Future researchers investigating this change relationship may be aided by including such definitions as "change over time: different than that which was first established." Additionally, the survey platform allowed users to skip questions by pressing the spacebar or arrow keys. This fact was not realized until the measure had gone live, and these features were found to be available during all questions, regardless of data limitations (e.g., requiring an answer to continue).

The selection of variables for the present study, and the resulting survey items (Appendix A: Items 1 -5) may have presented a limitation for the study. It was mentioned in a previous chapter that the variables were found to be consistent with the work of researchers such as LeBlanc (1982), with some exceptions. Two social factors, *socioeconomic status* and *ethnic group* do not appear in the present study. Researchers investigating the formation of music preference in the future may want to consider including these variables, as they may provide even greater insight into the phenomenon.

Another limitation was found in the fact that the survey used a fully self-report format. A reliance on self-report can potentially introduce error as it pertains to differing definitions of concepts between the participants and researcher, as well as a dependence on unreliable factors such as memory. There is also the potential for participants to present their responses based upon answers they believe to be expected, most desired by researchers, or to portray themselves in a better light (McMillan & Schumacher, 2005). The data collected during the present study may include responses that had been given for one of these reasons.

Gibbons (1977) and Holbrook and Schindler (1989) utilized methodologies that used self-report measures in conjunction with live music listening in their methodologies. This allowed for researchers to have a common frame of reference with participants but did not fully eliminate the potential for response bias. Stephens-Davidowitz (2018) removed this potential for response bias by analyzing existing data. His methodology allowed for a common frame of reference through having direct access to the specific songs listened to by participants. His study did not fully consider the potential for listeners to become exposed to the music they most listened to at a time other than when it was most popular. However, his methodology did much to mitigate this by first analyzing user preferences, and then examining when that music was most popular. Future researchers may want to use a variety of measures that investigate preference both directly and indirectly. Perhaps the best method, to eliminate some of the previously identified pitfalls, would be a longitudinal study that utilizes a combination of self-report and observed measures. An analysis of data collected through music platforms such as Apple Music, Spotify, YouTube, and/or Pandora could be performed in either a longitudinal(live) or retrospective context. With these services catering to hundreds of millions of users, the volume of data about listening habits, song selection, demographics, and location

data could provide unprecedented levels of insight into music preference. Furthermore, if such a study was conducted under a live condition, researchers would be able to directly poll listeners about their listening attitudes and experiences over time. Although, such a study would undoubtedly be expensive, and possibly prohibitively so.

Data Collection

It was revealed at the conclusion of the live phase of the study that the Typeform.com survey platform was unable to save data for any participant that did not click the final *Submit* button. This made unavailable a large percentage of potential results, as there were 124 participants who partially completed the survey, and 104 participants who answered all questions but did not click *Submit*. Only 101 participants completed the survey in its entirety and could be included in the study. Future researchers may desire to test a platform's capabilities prior to choosing it for a measure. One suggestion is to run a mock study prior to selection, and to use that test to vet the platform's capabilities. Both of the platforms that were used during the study have been upgraded since 2020, meaning that the above limitations may not be experienced by others in the future.

Another data limitation occurred when codifying the freeform answers given in response to Item 23 (Appendix A: Item 23). In the case of one entry, the "The Carnival is Over by Dead Can Dance," Chosic.com returned a genre value of "Dark Wave, Ethereal Wave, Medieval Folk, Neoclassical Darkwave." Although the classification methodology described in Chapter 4: Results would prescribe that the song be labeled under the "folk" genre, the researcher did not believe this accurately fit the song and, as such, it was not included in the analysis. This type of intuitive analysis is not conducive to a purely empirical analysis and had the potential to

introduce error into the findings. Fortunately, this single entry only had the potential to influence the validation results by 0.0099%.

Conclusion & Clinical Implications

Music preference is an essential concept in the field of music therapy. Research has consistently shown that preferred music is most effective in reaching patient goals and objectives (Chlan & Heiderscheit, 2009; Gibbons, 1977). The results of the present study may also hold applications for other fields as well. For example, listening to preferred music has been revealed to increase performance when used during athletes' warmup exercises (Ballmann, 2021; Ballmann et al., 2021; Meglic et al, 2021). In medicine, preferred music was shown to have a positive effect on chronic tinnitus during clinical trials (Chen et al., 2021). Preferred music was even found to have positive effects on relaying product messages when used in advertising (Raja et al., 2020). Increased insight into music preference could potentially have implications for any circumstance under which music is used.

Music therapists have held onto the premise that adults tend to prefer the music of their young adult years. For Gibbons (1977), this period was "arbitrarily defined as that age between 20 and 30 years of age" (p. 182), but other music therapist have begun to think of this period as occurring earlier in the life of clients, although no literature could be found to define this in terms of specific ages.

The results of the present study seem to suggest that music preference is established during the early adolescent years and to potentially hold significance throughout one's lifetime, since it was adults during the study who reported on their current music preferences. Music therapists could use this information to help identify music that adult clients are likely to prefer by selecting music that was popular when they were near the age of 13.17 years. This would

become especially useful for patients who are unable to advocate for their own preference due to cognitive or physical limitations.

These findings may be especially relevant for clients who reach this developmental stage after the year 2000, as there has been a significant change in the access and usage of music in daily life since the turn of the present century (North et al., 2004). Modern listeners have access to a much wider variety of music and are not limited by such factors as having to wait for a song to be played on the radio, or by a CD being unavailable at the record store. Modern listeners have on-demand access to whatever music they desire, whenever they desire it. This increased ability to access music naturally leads to increased exposure and has the potential to diminish the strength of allegiances to contemporary artists, such as described in Derbaix and Korchia (2019). Future researchers investigating age in relation to music preference may desire to explore methodologies that consider this possibility. New investigators may consider analyzing culture and technology over time, and how they influence access to music and listening habits. Such an analysis could potentially reveal trends in music preference as it relates to contemporaneous music and how music preference has changed as a result.

As discussed above, this increased exposure to music may lead to a trend in music preference decisions being made at younger ages. The diversity of available music may also lead listeners to prefer music that became popular well before their adolescence, and maybe even from regions far removed from their own. This increases the necessity for music therapists to consider preference on an individual basis, as listeners break free of the exposure limitations of the past. Eventually, when the above mentioned 6-year-old Styx fan meets the music therapist at his retirement home, he may be surrounded by peers who have tastes as varied as his own.

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Appendix A: Survey

Item #	Question	Answer Choices
1	How old are you?	Free-form number entry
2	How do you identify your gender?	A. Male
		B. Female
		C. Other (freeform text entry)
3	Do you consider yourself to be a musician?	A. Yes
		B. No
4	What was the setting for the MAJORITY of your K-12 education?	A. 20+ Students per classroom
		B. 10-19 Students per classroom
		C. 5-9 Students per classroom
		D. 1-5 Students per classroom
5	What kind of environment did you grow up in?	A. Metropolitan
		B. Rural
		C. Suburban
		D. Remote
	For the questions in the following section, please choose a single music genre to accompany the listed activity.	
	What type of music would you listen to…	
6	During solo activities, such as driving, working out, or completing repetitive tasks alone:	
7	While getting prepared to start your day or go out:	See Appendix F
8	To relax, study, or fall asleep:	
9	While hanging out with friends:	
10	To remind you of pleasant times:	
	For the next questions, you will be asked about your top three favorite types of music. Please choose the selection that BEST FITS your musical tastes.	
11	What is your MOST FAVORITE type of music?	See Appendix F
14,17	(Second Most, Third Most)	
12,15,18	Approximately how old were you when you began to listen to this music?	Free-form number entry

13,16,19	How were you introduced to this music?	A. Friends
		B. Parents
		C. Radio
		D. Internet Streaming (Pandora, iTunes, etc.)
		E. Siblings
		F. Other (free-form text entry)

Item #	Question	Answer Choices
20	Has your preference changed over time?	A. Yes B. No
(Optional) 21	At what age did your preference change?	Free-form number entry
(Optional) 22	What were your preferences before they changed? (Choose all that apply)	See Appendix F
23	Name a song that you love. *Write the name of a song/piece and its artist/composer from your favorite type of music	Free-from text entry

Appendix B: Informed Consent

Selecting "I Consent" below indicates that you have read and understand the information provided above, that you willingly agree to participate, and that you are not waiving any legal claims, rights or remedies. You may withdraw your consent at any time and discontinue your participation without penalty or loss of any benefits to which you are otherwise entitled. You may print screen or take a picture of this form to keep for your records (at the end of the survey).

Thank you,
Michael B. Glover, MT-BC

IRB2020-18
Approved on 7-6-2020

A I Consent
B I Do Not Consent

Appendix C: Social Media Advertisement

We're Listening!

We are conducting a study on the music that you love. We want to know what you listen to and why. We are inviting you to take our survey and tell us all about your favorite music. The survey will only take about 15 minutes of your time and will contribute to furthering our understand of the phenomenon of music preference. Every person who completes the survey will bring us that much closer to understanding.

Thanks in advance for your help!
Michael B. Glover, MT-BC

"We're Listening" | A research survey from the University of the Pacific

WERELISTENING.TYPEFORM.COM
We're Listening
A Study of Music Preference in Modern Society

Appendix D: Introduction

I am Michael Glover, MT-BC, a graduate student in the Music Therapy Program at the University of the Pacific.

We are inviting you to participate in a music research project. The purpose of this research is to investigate how music preference is formed. If you decide to participate, you will be asked to answer some questions regarding your experience with music.

All you need to do is complete this short online survey, which should take about 10 minutes. Your participation is entirely voluntary. If at any time you choose not to participate, feel free to leave the survey by exiting this browser. All responses are completely anonymous and confidential; your name will not appear anywhere on the questionnaire and please do not write/type your name on the survey or in any fields. We are not offering any compensation for participation in this project.

There are some possible risks involved for participants. There is the minimal risk of loss of confidentiality which we will mitigate by not collecting personal information from you. There is minimal risk of discomfort associated with completing an online survey. Benefits from this research include increasing our understanding of music preferences and how this can be applied to healthcare and wellness.

Measures to ensure your confidentiality are to collect and retain no personal information. The data obtained will be maintained in a safe, password-protected location and will be deleted after a period of three years after the study is completed.

If you have any questions about the research at any time, please call me at (555) 555-1234, or Eric G. Waldon, Ph.D., MT-BC, an Associate Professor of Music Therapy at the University of the Pacific, at (555) 555-1234. If you have any questions about your rights as a participant in a research project, please contact Human Subjects Protection in the office of Research and Sponsored Programs at (555) 555-1234.

Appendix E: Age Verification

2→ Due to research guidelines, you must be 18 years old, or older to participate in this survey. By clicking "I accept" below, you acknowledge that this is true.

Description (optional)

A I accept

B I don't accept

Appendix F: Genre Choices

Genre Choices

A. Alternative

B. Bluegrass

C. Blues

D. Classical

E. Country

F. Dance/Electronica

G. Folk

H. Funk

I. Gospel

J. Heavy Metal

K. World

L. Jazz

M. New Age

N. Oldies

O. Opera

P. Pop

Q. Punk

R. Rap/hip-hop

S. Reggae

T. Religious

U. Rock

V. Soul/R&B

W. Soundtracks/theme song

X. Other (free-form text entry) *

*Only included in the options for Item #22