The Influence of Characteristics on Music Enjoyment and Preference

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Abstract
Past research has indicated that two specific personality traits, openness and empathy, may contribute to greater enjoyment of music that expresses negative emotions. Individuals with elevated levels of depressive symptoms may similarly have a preference for negative music. However, no research to date has explored the impact of both personality traits and depressive symptoms in the same investigation. The current study measured both music enjoyment (how much people like certain music) and music preference (how often people choose to listen to certain music) after exposure to negative, neutral, and positive music. Supporting prior research, this study indicated that individuals high in overall empathy (the ability to experience the emotions of another) had a greater enjoyment of negative emotional music. No relationship was found between openness or depression for either music enjoyment or music preference. Further analysis of the data indicates a possible association between music-specific measures of personality and music enjoyment/preference. Future research will be needed to investigate the strength of this relationship.

Introduction
Music appreciation is varied and has typically been assessed in two different ways. The more commonly assessed measure is “music enjoyment,” which refers to how much a person likes a piece of music. Less used, “music preference” refers to how often a person chooses to listen to a piece of music. While in some individuals, increased music enjoyment may be connected with increased music preference, this is not always true (Hunter 2012). Research has demonstrated that music serves several important functional roles. For example, music provides many people with an outward reflection of their identity and values (Schafer and Sedlmeier 2009). Music can also be used to improve mood, express emotions, or create a more relaxed state (Juslin and Laukka 2004; Waterman 1996). Although music choice can vary based on a person’s immediate goals, people tend to prefer one genre of music, such as alternative, or music that contains a specific emotional characteristic, such as anger. Researchers have extensively studied the reasons for these differences in preference (LeBlanc 1982).
One common finding is that music enjoyment and preference can be influenced by several factors. For example, tempo or pitch can alter enjoyment of a piece, with faster tempo being associated with increased enjoyment. Similarly, people indicate a greater enjoyment of pitches ranging from 400 to 750 hertz (Finnas 1989). The attributes of the listener can also influence music enjoyment (McNamara and Ballard 1999), with both gender (Chamorro-Premuzic, Fagan, and Furnham 2010) and the age of the listener (Holbrook and Schindler 1989; Mende 1991) playing a role. It has even been shown that innate auditory factors such as pitch or tonality may influence enjoyment of certain types of music (McDermott and Hauser 2005; Trehub, Schellenberg, and Hill 1997; Umemoto 1997). Finally, variations in the perceived emotionality of the music can influence enjoyment. For example, people primarily enjoy happy music more than sad music (Gosselin et al. 2005; Hunter and Schellenberg 2010; Husain, Thompson, and Schellenberg 2002; Thompson, Schellenberg, and Husain 2001). To illustrate, in a study by Ladinig and Schellenberg (2012), participants provided ratings of enjoyment for numerous pieces of music and their emotional reactions to those pieces. These researchers discovered that the songs enjoyed most by listeners were those associated with happy feelings, while songs that induced sad feelings were generally disliked. This finding seems intuitive, as happy music tends to improve one’s overall mood (Saarikallio 2011). This investigation sought to explore additional factors known to influence music enjoyment and preference. Specifically, this paper will explore the relationship between three different characteristics and music enjoyment/preference.

**Personality Factors and Musical Enjoyment/Preference**

Music preferences typically reflect one’s identity (North and Hargreaves 1999). For example, individuals who listen to music often categorized as rebellious, such as heavy metal or rap, are more likely to engage in delinquent behaviors than listeners of other genres (Arnett 1991; Hansen and Hansen 1991). People also tend to discuss music preferences when getting to know others (Rentfrow and Gosling 2006). Given the importance of music in both individual and interpersonal development, it is understandable that personality (the pattern of emotional, intellectual, and behavioral responses of an individual) has been shown to be related to music preference (Hunter and Schellenberg 2011; Rentfrow and Gosling 2006; Rentfrow and McDonald 2009).

It is possible to describe a person’s personality in two broad ways. Behavior can result from temporary states determined by situational factors (for example, mood: stressed, happy, etc.). By contrast, human behavior can also be understood in terms of long-lasting attributes that persist over time (for example, personality traits: artistic, adventurous, etc.). Personality traits are thought of as existing on a continuum, and are not “all-or-none.” Using advanced statistical techniques, researchers have identified five different personality traits that are thought to underlie all of human behavior and can be used to explain the diversity in human personality. These five traits, known as the Big Five, are neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (John and Srivastava 1999).

Despite many studies analyzing the connection between these traits and music enjoyment, only one personality trait of the Big Five, openness to experience, has been shown to have a consistent association with music enjoyment (Chamorro-Premuzic, Fagan, and Furnham 2010; Ladinig and Schellenberg 2012). Openness to experience is defined as an appreciation of art, emotion, adventure, imagination, curiosity, and a variety of experiences (Digman 1990). Those who have high levels of openness are more likely to experience music cognitively and to utilize it for intellectual stimulation (Chamorro-Premuzic et al. 2009). For example, a person high in openness may derive pleasure from pondering the meaning conveyed by a song. Several research
studies have revealed the influence of this personality trait on music enjoyment. One study by Vuoskoski et al. (2012) analyzed the association between personality and four categories of music (sad, happy, scary, and tender). Their results indicated the importance of openness to experience, as it was the only Big Five trait associated with liking ratings (namely, an enjoyment of sad music). Openness has also been linked to increased enjoyment of complex music (Chamorro-Premuzic, Fagan, and Furnham 2010; Langmeyer, Guglhor-Rudan, and Tarnai 2012) and music that is considered to be sad or melancholy (Ladinig and Schellenberg 2012; Vuoskoski et al. 2012). This latter finding is likely due to the ability of people who score high on openness to detach themselves from the emotions in music and appreciate it as art—regardless of the emotional content (Hunter et al. 2008; Hunter et al. 2010). Accordingly, this study is predicted to show that those who score higher on openness will give stronger indications of liking both happy and sad music than will those who score lower on openness. It is similarly hypothesized that individuals higher in openness will prefer an emotional song (a happy song or a sad song) over a neutral song when given a choice.

Another personality trait related to song enjoyment/preference is empathy. This trait is not considered a Big Five personality trait, but is often used as an additional measure of personality (Breithaupt 2012). In fact, empathy could be considered a narrower component of the Big Five trait of agreeableness. Specifically, empathy describes the ability to understand and share the feelings of another (Davis 1980). Research has shown that highly empathetic people tend to relate more strongly to emotional stimuli overall. Thus, a connection between empathy and music seems logical, as some researchers argue that music enjoyment is influenced by the specific emotions evoked by music (Hargreaves, Miell, and MacDonald 2005). In general, people tend to enjoy music that causes them to feel stronger emotions (Gatewood 1927; Trombly 1995; Vuoskoski et al. 2012). Specifically, experiencing the emotions in music and not just perceiving that emotions are present may significantly contribute to increased enjoyment (Schubert 2007). One possible explanation for these findings is music that evokes emotions tends to be viewed as more meaningful than non-emotional music. Songs that create responses, such as chills, or trigger emotional memories are similarly perceived as more significant and are thus enjoyed more (Craig 2009; Woody and Burns 2001). Given that those who are highly empathetic experience emotions strongly, and that increased emotional involvement is associated with song enjoyment, it is unsurprising that these individuals tend to enjoy sad music more than others (Vuoskoski et al. 2012). For the current study, it is expected that highly empathetic individuals will indicate more enjoyment of both happy and sad songs over individuals lower in empathy. It is further predicted that those high in empathy will prefer any music that evokes emotions over a neutral music selection.

A final factor related to musical enjoyment/preference is the presence of depressive symptomatology, or the level of depressive symptoms. It is worth noting that this is a somewhat different predictor than either openness or empathy, as depressive symptomatology tends to be less stable over time. Nevertheless, there are numerous pieces of evidence that indicate people with depressive symptoms are drawn to one particular type of stimulus—that which expresses negative emotions. For example, research has shown that people with depression tend to seek negative feedback in social situations (Casbon et al. 2005), whereas nondepressed people pursue positive feedback (Swann, Wenzlaff, Krull, and Pelham 1992). Along the same lines, adolescents with depressive symptoms often befriend individuals with similar levels of depression (Zalk et al. 2010). Not surprisingly then, depressive symptoms have also been associated with a preference for negative music. For example, Miranda and Claes (2007) examined this link between depression and music preference in adolescents.
They identified an association between high depression levels and a preference for metal music, which typically contains negative content.

Numerous factors may contribute to depressed individuals’ nonintuitive preference for negative stimuli. There is evidence that those who are in a severely depressed mood may actually feel better after listening to sad music. For example, Matsumoto (2002) found that individuals who are mildly depressed experience no mood change after exposure to sad music, while severely depressed individuals experience a small positive mood change after listening to the same piece. Given that mood typically changes to more closely match an emotional stimuli, it can be assumed that the lack of mood change in the mildly depressed individuals is due to the sad music expressing emotions equal to their current mood. On the other hand, the positive mood change for the severely depressed individuals indicates a difference between the emotions expressed by the music and their current mood. More specifically, the mildly sad music is less sad than the current mood of the severely depressed individuals. These findings suggest that sad music may be chosen in certain situations for the same reasons happy music is chosen (positive mood regulation). Consequently, in the current investigation it is predicted that individuals with elevated levels of depression will enjoy sad music more than individuals with lower levels of depression. Additionally, it is expected that these individuals will demonstrate a higher preference for sad music over other music selections.

Overall, there is a lack of research on how specific personality traits (e.g., openness and empathy) and affective state (e.g., symptoms of major depression) will influence either music enjoyment or preference. The current study seeks to more accurately define the relationship between these factors. Specifically, it will focus on both stimulus enjoyment and preference after exposure to negative, neutral, or positive music. The hypotheses in terms of music enjoyment are as follows:

**Hypothesis E1:** Individuals higher in openness will give higher ratings of enjoyment to both a happy song and a sad song as compared to individuals lower in openness.

**Hypothesis E2:** Individuals higher in empathy will give higher ratings of enjoyment to both a happy song and a sad song as compared to individuals lower in empathy.

**Hypothesis E3:** Individuals with a greater number of depressive symptoms will give higher ratings of enjoyment to a sad song than individuals with fewer of these symptoms.

Similarly, there are three main hypotheses regarding music preference:

**Hypothesis P1:** Individuals higher in openness will be more likely to choose either emotional song (the happy song or the sad song) over the neutral song.

**Hypothesis P2:** Individuals higher in empathy will be more likely to choose either emotional song (the happy song or the sad song) over the neutral song.

**Hypothesis P3:** Individuals with higher amounts of depressive symptoms will be more likely to choose the sad song over the other two music selections (the happy song or the neutral song).

In general, these findings will contribute to a greater understanding of both music enjoyment and preference.

**Method**

**Participants**

A total of 66 undergraduates completed the experiment in fulfillment of a course requirement and were tested individually.
Setting
Previous studies found that certain aspects of a situation, such as upcoming events, can influence music choice (Saarikallio 2011). Therefore, it was thought that the formal laboratory environment where participants were tested might alter musical enjoyment/preference in a way atypical of normal listening. To counter this possible impact, efforts were made to establish a comfortable atmosphere more typical of that in a relaxed, casual setting, such as a home. Specifically, the testing room was dimly lit by a single lamp and the walls were decorated with four neutral art prints. In addition, all participants sat on a comfortable futon for the duration of the experiment.

General Instructions
Participants were informed they would be taking part in three separate experiments by different researchers. To establish the illusion of three experiments, the desk in front of the participants had three envelopes marked “Experiment 1 – Dr. Kliest,” “Experiment 2 – Dr. Wunderling,” and “Experiment 3 – Dr. Yorke.” Participants were instructed to place all materials in each envelope after completing each section of the experiment.

Part I
Participants were given three partially counterbalanced questionnaires (i.e., the three surveys distributed in a random order) and informed via written instructions to choose the best answer for each question:

- **Major depression inventory.** This questionnaire was used to assess the degree of depressive symptoms in each participant (Konstantinidis et al. 2011).
- **Big Five inventory.** The questions from this inventory were used to measure the Big Five personality traits of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (John and Srivastava 1999).
- **Interpersonal reactivity index.** This survey measured the level of various types of empathy in participants (Davis 1980). These categories include perspective taking, fantasy, empathetic concern, and personal distress. For the purposes of the current study, only a global measure of empathy was used.

Part II
Next, participants listened to three partially counterbalanced music segments (happy, sad, or neutral) that were each one minute in length. They were told to close their eyes and concentrate on each music selection. After each selection, participants were required to complete a questionnaire in which they rated their enjoyment of the song, the level of beauty it contained, the degree to which they related to the music, and whether they recognized the band or the song (see appendix).

The music selections used in the experiment were chosen based on several criteria. Emotional reaction to the lyrics was limited by choosing songs that contained ambiguous or muffled lyrics. The effect of familiarity was minimized by choosing less popular songs. Using these basic criteria, three songs were chosen for the experiment:

- **Positive emotion.** The song “Eyes as Candles,” by Passion Pit, was chosen for its ambiguous lyrics and rapid tempo.
- **Neutral.** The song “Slow Motion,” by Panda Bear, was slowed down 10% to function as the neutral selection. Given that faster tempos are typically associated with happy emotions (Webster and Weir 2005), this slight slowing of the tempo was used to create a more neutral stimuli.
- **Negative emotion.** The live version of the Radiohead song “Like Spinning Plates” was used to create a depressing mood.
Preliminary testing was used to determine the validity of the materials used in the main experiment. A small sample of participants rated each selection on a scale of negative six (extremely sad) to positive six (extremely happy). A rating of zero indicated a lack of strong emotion of either valence, or neutral. Results verified that the selected songs adequately established the appropriate emotional content (happy, neutral, or sad). Fitting with expectations, the respective songs were rated as happy ($M = 2.93$), neutral ($M = -.41$), or sad ($M = -2.66$). Analysis of variance (ANOVA) and Tukey post-hoc analyses confirmed that the ratings of emotional content for each song were significantly different from each other ($p < .05$). In addition, preliminary testing verified that no one selection was universally disliked relative to the others. Finally, results indicated that participants were relatively unfamiliar with the songs (overall identification rate was less than 2%).

Part III

Participants were informed that the third experiment was designed to measure the influence that listening to music has on writing. They were told to choose (via written selection) one of the songs played in the previous section, and that this song would function as a guide for the type of music they would hear while journaling about a somewhat recent and significant life event. The purpose of this part of the experiment was to measure music listening choices. Therefore, the experiment ended after participants made their selection.

Debriefing

After the three sections, participants were debriefed and probed for suspicion. They were asked general questions about the experiment and their level of suspicion was rated on a standardized number scale. More specific questions concerning deception were posed following this rating, such as “At any point during the study did you think there was something more to the study?” and “Can you think of any other aspects of the study that seemed strange or unusual?” Data was removed from analyses for participants who expressed specific suspicions that could potentially affect the results (e.g., guessing the exact research hypotheses).

Results

Enjoyment Ratings

It was expected that individuals higher in openness and empathy would have increased enjoyment of both positive and negative music (Hypotheses E1 and E2). Those with high depression scores were predicted to give higher enjoyment ratings to negative music only (Hypothesis E3). Three multiple regressions were used to test if these factors actually predicted enjoyment of each song respectively. In general, a multiple regression is a statistical technique that tests whether several measured items have an influence on another set of measured items. Results are presented in table 1. For the happy song, the regression was non-significant ($p > .10$), as none of the factors were significant predictors of enjoyment. For the neutral song, the same pattern of non-significant predictors was obtained ($p > .10$). For the sad song, openness was not a significant predictor ($p > .10$) and neither were depression scores ($p > .10$). In other words, Hypotheses E1 and E2 were not supported. However, empathy was found to be a significant predictor of enjoyment of the sad song and accounted for 19% of the variance in enjoyment ratings. Thus, empathy explains 19% of the differences in enjoyment ratings of sad songs for all the participants. Other factors explain the remaining portion of differences. This result also indicates that Hypothesis E2 was partially supported.
Musical Preference
It was predicted that participants who scored high in openness and empathy would be more likely to choose positive and negative music over neutral music (Hypotheses P1 and P2). Individuals with high depressive symptoms were expected to prefer negative music only (Hypothesis P3). A multinomial regression was conducted predicting choice from the openness, empathy, and depression scores. The regression was not found to be significant overall ($X^2 = 5.27, p > .10$), meaning that none of the predictors significantly affected music choice and none of the music preference hypotheses were supported.

Post-Hoc Analyses: Enjoyment Ratings
Given that only one of the original hypotheses was found to be significant, further analyses (post-hoc analyses) were conducted. Post-hoc analyses are conducted without any initial predictions of the results and thus do not have previously formed hypotheses. Three multiple regressions were used to determine if “viewing a song as art” or “relating to the song” predicted enjoyment. This data was obtained from the questionnaires given to participants after listening to each music selection (see appendix). Given the inconclusive results, it was thought that these specific questions would more precisely reflect measurements of openness and empathy than global assessments of these traits (the Big Five Inventory and Interpersonal Reactivity Index) and would thus influence song enjoyment more strongly than global personality traits. Results are shown in table 2. For the happy song, there were two significant predictors: viewing the happy song as art (Wilks’ $\lambda = .394, F(3, 57) = 29.2, p < .001$) and relating to that song (Wilks’ $\lambda = .823, F(3, 57) = 4.08, p = .011$). In terms of the neutral song, a similar pattern was found. Viewing the neutral song as art (Wilks’ $\lambda = .543, F(3, 57) = 16.0, p < .001$) and relating to that song (Wilks’ $\lambda = .807, F(3, 57) = 4.55, p = .006$) were both significant predictors of enjoyment of the neutral song. Finally, viewing the sad song as art was found to significantly predict enjoyment ratings of the sad song (Wilks’ $\lambda = .990, F(3, 57) = 23.7, p < .001$). In sum, those who viewed a particular song as artistic rated it as more enjoyable than those who did not view the song as artistic. This was true for all song types. Similarly, those who related more to the song described it as more enjoyable than those who did not relate to the song, at least for the happy and neutral songs.

Post-Hoc Analyses: Musical Preference
It was hypothesized that viewing a song as art or relating to the song would similarly be associated with higher preference of that music selection. A multinomial regression was conducted predicting choice from viewing each song as art and relating to each song. Results are presented in table 3. Overall, the regression was significant ($p < .001$), which indicates that one or more of the potential predictors significantly affected music preference. Findings indicated that individuals who related strongly to the happy song had a greater chance of choosing the happy song over the neutral song, odds ratio (OR) = 3.40, 95% confidence interval (CI): 1.06, 10.9. Those who viewed the neutral song as art had a decreased chance of choosing both the happy song (OR = .494, 95% CI: .241, 1.01) and the sad song (OR = .453, 95% CI: .210, .978) compared to the neutral song. Furthermore, participants who viewed the sad song as art had a greater chance of preferring the sad song instead of the neutral song (OR = 2.25, 95% CI: 1.05, 4.81). Individuals who viewed the neutral or sad song as art were more likely to choose that song compared to the other choices. Those who related more strongly to the happy song were also more likely to prefer the happy song over
other music selections. No other predictors were significantly associated with music preference.

Discussion

The current study focused on enjoyment and preference for positive, neutral, and negative emotional music. This study also analyzed whether attitudes about music enjoyment are synonymous with music listening behavior (preference). It was thought that individuals high in openness and empathy would enjoy emotional music (both positive and negative) more than individuals lower in these traits. It was similarly predicted that individuals higher in these traits would choose a happy or sad song more often than a neutral selection. Conversely, it was predicted that individuals with higher levels of depression would give higher ratings of enjoyment to sad music than those with fewer depressive symptoms. It was further hypothesized that these individuals with more symptoms of depression would prefer negative music over both positive and neutral music. The results from the current study provided partial support for these hypotheses. Specifically, individuals high in global empathy gave higher ratings of enjoyment to negative emotional music than individuals with lower scores of global empathy, which validates the second part of Hypothesis E2. However, no relationship was found between empathy and enjoyment or preference of positive emotional music, which contradicts the first part of Hypothesis E2. In addition, no relationship was found between openness or depression for either music enjoyment or music preference (Hypotheses E1, E3, P1, P2, and P3). This lack of relationship between depression and enjoyment/preference for sad music warrants further consideration. Given the truncated range of data, depression scores simply may not vary enough to determine any significant relationship to music enjoyment. Along the same lines, most scores on this assessment were far beneath the threshold for a diagnosis of clinical depression.

Although initial hypotheses were only partially supported, further analysis of responses regarding individual song selections indicated a potential connection between musically specific personality traits and music enjoyment/preference. Specifically, results indicated that both “viewing a song as art” and “relating to a song” were more accurate predictors of a person’s enjoyment and preference than stable personality traits, such as openness or empathy. One possible explanation for this finding is that the responses are more precise indicators of openness and empathy, respectively, at least in terms of their relationship to musical appreciation. For example, a significant relationship between empathy and enjoyment/preference may not have been found in the current study because some percentage of participants were empathetic in regard to music listening, but low in other aspects of the trait (e.g., empathy toward other persons). Ultimately, more deliberately designed questions may be necessary to show the relationship between openness/empathy and music preference/enjoyment.

One of the main contributions of this study to existing literature is the inclusion of music choice as a dependent variable, as prior research has primarily focused on ratings of music enjoyment. Given that different factors were found to significantly influence music enjoyment and preference, this study demonstrated that attitudes about music may not be synonymous with music listening behavior. In particular, situation specific measures of empathy and openness were linked to enjoyment of nearly all the songs, while only some of these similar hypotheses held true for preference. Another important contribution of the current study is the inclusion of data for participants who have depressive symptoms, but do not necessarily meet the diagnostic criteria for a diagnosis of major depression. This is important, as previous research has primarily
focused on the latter, and thus the results of the current study may be more applicable to the general population.

Future research would benefit from a closer look at the relationship between personality traits and music enjoyment/preference. Results from the current study suggest that using specific music-related assessments may be more effective than global trait assessments at establishing connections between personality traits and music enjoyment/preference. However, more research is needed to provide evidence for this hypothesis. Other studies should also further explore the possible connection between depression and music enjoyment/preference by using a sample with more varied depressive scores than in the current investigation.

Ultimately, music enjoyment and listening behaviors can be as varied as the individuals who listen to music. Nevertheless, research has been able to identify specific factors that have a substantial effect on song enjoyment and preference. For example, the current study demonstrated the link between empathy and enjoyment of sad music. This finding could be generalized to explain why an individual enjoys any stimulus that portrays negative emotions, such as sad movies or books. An enjoyment of negative emotions may not necessarily indicate a melancholy individual, but rather someone who is more aware of and connected with emotions in general. However, given the complexities of human cognition, numerous other factors likely contribute to music enjoyment/preference. As more studies investigate these relationships, it is likely that music listening habits will be viewed with more insight and a higher level of predictability.

**Bibliography**


Appendix

Questionnaire.

Music selection #__________:

1. How much did you like or dislike the music you just listened to? Please circle a number.

<table>
<thead>
<tr>
<th></th>
<th>-6</th>
<th>-5</th>
<th>-4</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disliked extremely</td>
<td>Disliked quite a bit</td>
<td>Disliked slightly</td>
<td>Neutral</td>
<td>Liked slightly</td>
<td>Liked quite a bit</td>
<td>Liked extremely</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

2. How would you evaluate this song as a piece of art? Please circle a number.

<table>
<thead>
<tr>
<th></th>
<th>-6</th>
<th>-5</th>
<th>-4</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely unpleasant</td>
<td>Quite unpleasant</td>
<td>Slightly unpleasant</td>
<td>Neutral</td>
<td>Slightly pleasant</td>
<td>Quite pleasant</td>
<td>Extremely pleasant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How much did you relate to this song? Please circle a number.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Did not relate to it at all</td>
<td>Related to it slightly</td>
<td>Related to it quite a bit</td>
<td>Related to it very much</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Did you recognize the artist or the song? Circle one: YES NO

If you did recognize the artist or the song, please write their name and/or the song title.

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Table 1. Multiple regression analyses of song enjoyment using planned predictors.

<table>
<thead>
<tr>
<th></th>
<th>Happy song</th>
<th>Neutral song</th>
<th>Sad song</th>
</tr>
</thead>
<tbody>
<tr>
<td>F ratio</td>
<td>1.32</td>
<td>.769</td>
<td>4.83</td>
</tr>
<tr>
<td>R²</td>
<td>.060</td>
<td>.036</td>
<td>.189</td>
</tr>
<tr>
<td>Openness</td>
<td>.093</td>
<td>.108</td>
<td>.129</td>
</tr>
<tr>
<td>Empathy</td>
<td>.146</td>
<td>-.013</td>
<td>.387**</td>
</tr>
<tr>
<td>Depression</td>
<td>-.125</td>
<td>-.162</td>
<td>.018</td>
</tr>
</tbody>
</table>

Note: *p < .10. **p < .05
Table 2. Post-hoc multiple regression analyses of song enjoyment.

<table>
<thead>
<tr>
<th></th>
<th>Happy song</th>
<th>Neutral song</th>
<th>Sad song</th>
</tr>
</thead>
<tbody>
<tr>
<td>F ratio</td>
<td>30.5**</td>
<td>28.9**</td>
<td>22.8**</td>
</tr>
<tr>
<td>R²</td>
<td>.756</td>
<td>.746</td>
<td>.699</td>
</tr>
<tr>
<td>Viewing a happy song as art</td>
<td>.667**</td>
<td>.045</td>
<td>-.146</td>
</tr>
<tr>
<td>Relating to a happy song</td>
<td>.294**</td>
<td>.021</td>
<td>.094</td>
</tr>
<tr>
<td>Viewing a neutral song as art</td>
<td>.007</td>
<td>.595**</td>
<td>-.016</td>
</tr>
<tr>
<td>Relating to a neutral song</td>
<td>.035</td>
<td>.32**</td>
<td>.144</td>
</tr>
<tr>
<td>Viewing a sad song as art</td>
<td>-.004</td>
<td>.069</td>
<td>.769**</td>
</tr>
<tr>
<td>Relating to a sad song</td>
<td>-.013</td>
<td>.016</td>
<td>.068</td>
</tr>
</tbody>
</table>

Note: *p < .10. **p < .05.

Table 3. Post-hoc multinomial regression of song preference.

<table>
<thead>
<tr>
<th></th>
<th>Odds ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral song versus happy song</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viewing happy song as art</td>
<td>1.94</td>
<td>.842, 4.46</td>
</tr>
<tr>
<td>Relating to happy song</td>
<td>3.40**</td>
<td>1.06, 10.9</td>
</tr>
<tr>
<td>Viewing neutral song as art</td>
<td>.494*</td>
<td>.241, 1.01</td>
</tr>
<tr>
<td>Relating to neutral song</td>
<td>.442</td>
<td>.147, 1.33</td>
</tr>
<tr>
<td>Viewing sad song as art</td>
<td>.921</td>
<td>.574, 1.48</td>
</tr>
<tr>
<td>Relating to sad song</td>
<td>.36</td>
<td>.101, 1.29</td>
</tr>
</tbody>
</table>

Neutral song versus sad song

<table>
<thead>
<tr>
<th></th>
<th>Odds ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewing happy song as art</td>
<td>1.04</td>
<td>.444, 2.41</td>
</tr>
<tr>
<td>Relating to happy song</td>
<td>.633</td>
<td>.137, 2.93</td>
</tr>
<tr>
<td>Viewing neutral song as art</td>
<td>.453**</td>
<td>.210, .978</td>
</tr>
<tr>
<td>Relating to neutral song</td>
<td>.39</td>
<td>.104, 1.47</td>
</tr>
<tr>
<td>Viewing sad song as art</td>
<td>2.25**</td>
<td>1.054, 4.81</td>
</tr>
<tr>
<td>Relating to sad song</td>
<td>2.29</td>
<td>.610, 8.5</td>
</tr>
</tbody>
</table>

Note: *p < .10. **p < .05.