

Listening to classical, pop, and metal music: An investigation of mood

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We investigated the effects of different types of music on moods. Participants were (N = 54) undergraduate college students enrolled in psychology courses. We hypothesized that type of music condition would influence participants' moods. Results showed several statistically significant differences between pre- and post-test reported moods in each of the three music conditions. Specifically, classical music increased participants' feelings of ease while heavy metal music increased feelings of tension and nervousness. Pop music had a similar effect to classical music as participants reported increases in feelings of ease and decreases in moods related to worry and tension.

Keywords: Music, mood, heavy metal, classical, pop music, musical preference.

Previous research has found that music may be capable of influencing the mood of listeners in a positive or negative manner depending on the type of music (Krumhansl, 1997; Scheel & Westefeld, 1999; Rentfrow & Gosling, 2003). In addition, people often have different reasons for listening to music when dealing with different emotions (Stratton & Zalanowski, 1997; Schwartz & Fouts, 2003). People may listen to a certain genre of music to seek a more positive mood, the listener may seek understanding from music similar to their mood, or they may listen to music they know will enhance their misery. Those possibilities relate to the issue of whether music elicits emotional responses in listeners known as the "emotivist" position, or whether music just expresses emotions that listeners recognize while listening to the music known as the "cognitivist" position (Krumhansl, 1997; Schubert, 2007). In addition, fans of a particular genre of music may be drawn to that type of music due to existing emotions or problems (Scheel & Westefeld). Different genres of music may not affect each person in the same way.

One rather unique quality of music as compared to other forms of media such as video is the lack of visual images in music (Anderson, Carnagey, & Eubanks, 2003). The volume at which music is played is also an important factor to keep in mind regarding potential affect on mood (Staum & Brotons, 2000). Investigating the relationship between music and mood is an important topic of study as people are constantly surrounded by music which they choose to listen to as well as music they are exposed to involuntarily in their daily lives (i.e. television, department stores).

We were inspired to conduct this study after reading a similar investigation of the influence of classical and heavy metal music on mood (Jordan-Mena, 2007). The results of Jordan-Mena's study found that positive moods increased and negative

moods decreased following exposure to classical music and positive moods decreased, while negative moods increased following exposure to heavy metal music. However, participants were exposed to only four minutes of two types of music, and mood was measured by an instrument created by the researcher rather than a standardized measure. In the present study, we exposed our participants to approximately 10 minutes of music and investigated three types of music. We measured mood using the State-Trait Anxiety Inventory for Adults (STAIS-AD Test form Y). That measure has been standardized and has excellent test-retest reliability.

HYPOTHESES

We hypothesized that participants who listened to classical and pop music would report more positive moods, and those who listened to heavy metal would report more negative moods. Further, in order to account for musical taste possibly influencing mood, we predicted that there would be correlations between different categories on the Short Test of Musical Preferences (STOMP) and mood reports on the post-test. For example, participants who indicated a preference for energetic and rhythmic musical styles on the STOMP would report lower levels of negative moods on the post-test in the heavy metal condition.

METHODS

Participants

Participants in this study were 54 undergraduate students enrolled in psychology courses during the fall of 2008 at Emporia State University. There were 16 men, 37 women, and one participant unspecified. Participants included 28 freshman (51.9%), 16 sophomores (29.6%), seven juniors (13.0%), one senior (1.9%), and two participants unspecified

(3.7%). The age range for participants was 18-30 years ($M = 20.07$, $SD = 2.7$). Participants received partial course credit for their participation. We obtained participants by posting sign-up sheets on the research bulletin board on the third floor of Visser Hall.

Materials

The materials we used included a compact disc player with three compact discs. Each disc was for an individual condition of the experiment, with approximately 10 minutes of music on each. Music song titles and artists for each condition were:

Pop

Peaches, The Presidents of the United States
Walking on Sunshine, Katrina and The Waves
Hey There Delilah, Plain White T's

Heavy Metal

Entombment of a Machine, Job for a Cowboy
Devoured By Vermin, Cannibal Corpse
When All is Said and Done, Napalm Death

Classical

Violin Concerto No. 5 in A, 2nd Movement, Mozart

Instruments

The Short Test of Musical Preferences (STOMP) is a 14-item measure. Participants are asked to rate how much they like certain types of music (e.g., classical, pop, heavy metal and jazz) on a Likert scale ranging from one to seven; 1 being *strongly dislike*, 4 *neither like nor dislike*, and 7 *strongly like*. Each of the 14 items is scored into four music preference dimensions with the highest possible score being a 28 and the lowest possible score on any dimension being a three. The music preference dimensions are reflective and complex, intense and rebellious, upbeat and conventional, and energetic and rhythmic. Test-retest reliability for the measure ranged from 0.77 - 0.82 (Rentfrow & Gosling, 2003).

The Self-Evaluation Questionnaire STAI Form Y-1, also known as the STAI-AD, is composed of 20 statements that people use to describe themselves (i.e. "I feel calm", "I am relaxed"). For each statement, participants select: 1 *not at all*, 2 *somewhat*, 3 *moderately so*, and 4 *very much so*. Test-retest reliability for the STAI-AD ranged from 0.73 to 0.86 (Spielberger, Gorsuch & Lushene, 1983).

Design and Procedure

Institution Review Board approval was obtained before conducting this experiment. The experimental condition included one independent variable, music condition with three

levels: classical, heavy metal, and pop. The dependent variable, change in mood, was measured by the STAI-AD. The third variable, musical preference, was measured using the STOMP and included to measure correlation between the subscales of the STAI-AD and STOMP.

We assigned participants to one of the three music conditions based upon three sign-up sheets (one for each condition). The first author read and provided participants with an informed consent form. Participants then completed a brief demographic form we developed thus leaving the STAI instrument devoid of identifying information to protect confidentiality. Students then completed the STOMP, and finally the STAI-AD. Students were then exposed to one of three music conditions and afterwards completed the STAI-AD a second time. The first author then distributed and read to them the debriefing statement, encouraged and answered questions, and thanked them for their time.

RESULTS

A test of homogeneity for pre-test scores indicated no significant differences between the groups on the STAI-AD. A one-way ANOVA indicated a statistically significant difference in post-test moods scores based on music condition, $F(2, 51) = 18.79$, $p < 0.001$. Post-hoc Tukey tests indicated that the students nested in the heavy metal music ($M = 46.28$) condition had significantly higher scores (indicating higher anxious moods) than those in both the classical ($M = 31.52$) and pop music ($M = 33.53$) conditions.

As we were interested in individual moods, rather than simply measuring overall anxiousness, we also employed independent samples *t*-tests on the individual items of the STAI-AD. There were several statistically significant effects of music on individual moods, using a Bonferroni adjustment of $p < 0.0025$ to reduce the risk of a Type I error. For the classical condition ($n = 19$), participants reported increases in feelings of calmness and relaxation and decreases in reports of worry. Participants in the heavy metal condition ($n = 17$) reported increases in jitteriness, and decreases in calmness, security, satisfaction, comfortableness, relaxation, contentedness, steadiness, and pleasantness. The pop condition ($n = 17$) elicited increased reports of comfortableness and relaxation, and decreased tension, worry, and confusion.

In order to test the hypothesis that musical taste is correlated with mood, Pearson Product Correlations were conducted between the subscales of the STOMP and reported moods on the post-test by musical condition. For the classical condition, results revealed a negative correlation between an upbeat and conventional musical preference and reported feelings of misfortune ($r = -0.56$, $p = 0.01$). Results for heavy metal condition showed negative correlations between energetic and rhythmic

musical preferences and reports of feeling strained ($r = -0.57, p = 0.01$), and upbeat and conventional musical preferences and reports of pleasant feelings ($r = -0.53, p = 0.02$). We found positive correlations between intense and rebellious musical preferences and feelings of satisfaction ($r = 0.64, p = 0.005$), and between energetic and rhythmic musical preferences and reports of relaxation ($r = 0.51, p = 0.03$).

DISCUSSION

Overall, our hypothesis that music would affect mood was supported. We found there were statistically significant differences in mood based on the effects of classical, heavy metal, and pop music. These findings support the work of other researchers (Krumhansl, 1997; Scheel & Westefeld, 1999; Rentfrow & Gosling, 2003) who found relationships between different types of music and mood.

Given that people are exposed to music on a daily basis, often not of their choosing (e.g., background music in a medical office or department store), the implications of the effects of music on mood are important areas of study. Those who make musical selections might take more care if the results of studies investigating the relationship between mood and music are well known. Familiarity with anecdotal reports of the relationship between music and mood, if not empirical studies, may be why a medical office often chooses classical music for the waiting area, while a movie track uses different genres of music to elicit feelings in the viewer.

It is difficult to generalize our findings across other populations since our sample came from a distinct group of college students, unequal in gender and limited by age range. There is also a possibility of unknown gender bias toward genres of music in this study which was not explored. Another possible bias in this study is that the classical selection was the only music condition that did not include lyrics. Music with lyrics may be experienced differently than music without lyrics.

Future studies of this topic could be expanded to include a larger sample size, a wider range of ages and a more equal distribution of men and women. Inclusion of more genres of music, such as jazz, new age or country, and more emphasis on

personality, perhaps utilizing a full personality measure, would add to the design of this study. Gender differences and differences in the experience of music with and without lyrics may also be worth exploring.

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