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ABSTRACT

Assessing the Influence of Rock Music on Emotions

Using projective and objective measures, effects of rock music on emotion were investigated. Sixty students were randomly assigned to three conditions: hard rock, soft rock, and no music. One group listened to hard rock music while taking a projective test with five ink blots and an objective test with an Emotional Assessment Scale (EAS). The same procedure was used for the second group while listening to soft rock. A control group was given the same procedure with no music. Two one way analyses of variance and a Pearson's correlation were used to determine if types of music affected one's emotions using projective and objective measures. Significant differences were discovered comparing music with: projective measures, $F(2, 59) = 4.41, p < .05$, the preference of soft rock over hard rock, $r(40) = .37, p < .01$, and six of eight emotions on the EAS. Data analyses revealed significant differences between types of rock music and their effects on emotions.

FACULTY MENTOR



Alysia D. Ritter is a professor of psychology who, during her 16 years at MSU, has taught general psychology, child development, perception, and research methods and design. She received her bachelor's degree from the University of New Orleans and her master's and doctorate degrees from University of Houston. Her research interests include sensations, perceptions, attitudes and beliefs pertaining to behavior. She actively encourages student interest and involvement in psychological research. The undergraduates she has mentored have published 16 articles and given 40 presentations at local and regional conferences.

Assessing the Influence of Rock Music on Emotions

Violence is so abundant in American society that one expects to encounter it daily through the many forms of media. It can be seen and heard on the television, radio, and even on the internet. Because these forms of media are saturated with explicit scenes and sounds of aggression and violence, it is possible that some forms of media, such as music, could contain a vast amount of negative stimuli that could impact society in many different ways.

One important component of American culture is music, which can be experienced in many forms (e.g., radio, internet, CD player). Violence and aggression are found in many songs and types of music, which could have a detrimental effect upon the listener. Based on archival information, it has been estimated that acts of aggression and sexually explicit material can be found anywhere between twenty and seventy percent of rap music as well as videos (Atkin, Smith, Roberto, Fediuk, and Wagner, 2002). There is also evidence that people who watched rock music videos conveyed more insensitive and aggressive attitudes toward women than did men who were shown nonviolent rock videos (Barongan and Nagayama Hall, 1995). Other research concluded that even a brief exposure, such as fifteen minutes, to violent music and music videos, such as heavy metal, could desensitize its viewers and change the perception of another's aggressive behavior (Atkin et al., 2002).

Music is a vast and popular form of art. To add to its perplexity, there are dozens of genres that are all labeled as music, yet some types sound completely different than others while some sound very similar. Although the definition of a genre of music would be best defined by the auditory sensory system rather than an operational definition, there are some differing characteristics that can be found between hard rock and soft rock music. Hard rock music is classified as a style of rock 'n roll that contains a harsh, amplified sound and loud electric guitars. Soft rock music is a form of rock 'n roll that tends to produce a softer, more pleasing sound. Pianos and synthesizers often accompany the electric guitars, which are typically absent from hard rock.

Some types of music contain more violence than other genres. For example, archival research performed by Smith and Boyson (2002) found that rap music had a tendency to attribute more violence in music videos than rock, adult contemporary, or rhythm and blues. They also discovered that the music channel Black Entertainment Television (BET) was significantly more likely to circulate music videos with aggression and violence than its competitors, Music Television (MTV) or Video Hits One (VH1) (Smith and Boyson). Their information was obtained by monitoring and studying the types of music videos aired during a certain time span on three different music channels.

Similar results were revealed by Atkin et al. (2002), who reported that rap songs tend to use more aggressively explicit language – even more than heavy metal songs. Two thousand, three hundred males and females between the ages of 13 through 15 received mail surveys that inquired about verbal and physical aggression and media influences upon their lives. There was a strong correlation between committing and experiencing verbal aggression, regardless of the manner in which this aggression was portrayed.

There is evidence to support the idea that content in a song or a music video can alter the perception of an individual and alter one's cognition. Atkin et al. (2002), Barongan and Nagayama Hall (1995), and Smith and Boyson (2002) noted that music filled with violence, aggression, and sexually explicit material were related to distorted cognitive perceptions, and that aggressive behavior between music conditions were heavily associated with lyrics that were within a song (Barongan and Nagayama Hall). For example, Barongan and Nagayama Hall studied a sample of fifty-four college men and their perceptions on neutral rap music and violent rap music. Their findings also suggested that violent rap music aided the development of aggressive behavior in its audience – which gave credence to the idea that the content and lyrics of a song really do affect the individual.

In order to assess the type of emotions experienced, one must undergo some form of psychological testing. One way to measure

this personality dynamic is through the use of projective tests, such as the Rorschach ink blot test. Although examining various elements of thought and behavior through projective means is still rather rudimentary in the scientific world, benefits of using this technique are possible because projective tests are virtually free of social desirability effects as well as containing no right or wrong answers, nor any guidelines. The participant simply looks for internal cues and responds to ambiguous stimuli, projecting possible fears and desires, which reproduces a measurable score of one's inner thoughts. Projective tests are somewhat controversial due to the various ways they can be interpreted. However, many reliable scales used for interpretation have been produced in order to remove any quandaries that may arise in the scoring of these tests (Masling, 2002).

Objective evaluations can also measure emotions produced through exposure to music. In contrast to an open-ended projective measure, an objective measurement, with specific response alternatives are not as likely to detect an influence in a situational variable, such as one's emotion (Greenberg and Fisher, 1971). Because music seems to affect a person's immediate mood, rather than alter personality characteristics, a projective measure would more likely discover an alteration of mood based on music rather than an objective measure. Therefore, if a change in mood is detected in both projective and objective tests, it strengthens the validity of the claim that rock music affects one's emotions.

Therefore, this study investigated how a brief exposure to music affected the emotions of an individual. It was hypothesized that soft rock songs would produce positive emotions, whereas hard rock songs would invoke negative emotions. It was also hypothesized that these emotional variants could be measured using both projective and objective measures.

Method

Participants

All sixty participants were students at Murray State University, and each voluntarily gave his/her consent to participate in this research project. Before beginning the study, all were reminded of the explicit content of some of the songs and were told that he/she could refuse to participate at any time without penalty.

Participants were cared for in agreement with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 2002).

Materials and Apparatus

Five ink blots were made for this investigation (see Appendix A). A five item self-report questionnaire was given in order to determine what each individual actually viewed in the ink blots. The responses to the ink blots were scored by the Barrier Response scoring procedure. Each response is given a score of 1 if it had a reference to clothing, buildings, vehicles with some type of containing structure, any reference that could contain or cover, all living things that have a special surface quality, all creatures that possess a shell, and all references to geographic or natural formations (Masling). Therefore, the total score cannot be higher than twenty-five. A higher score denotes a better coping ability to stress, or little to no hostile emotions at that present time. The Emotional Assessment Scale (Carlson et al., 1994) was used to measure immediate emotional responses of the participants based on the music. The EAS is a 24-item test designed to indicate the emotional state of an individual at that point in time. It contains eight emotional conditions that are seen as prevalent and fundamental across all cultures. There were three items per dimension of emotion, and the mean was used to gather the score for each condition. No emotion could exceed 100. A four-item demographics questionnaire determined age, gender, whether the individual had heard the music before, and whether the participant liked the music or not.

The music was produced using CDs played on a Panasonic RX-D12 portable stereo CD system. The songs that were used for the soft rock were "The Ocean", "Ready and Waiting to Fall", and "Anything" (Elkins, 2005, tracks 7, 12, and 13), all performed by Mae. These three soft rock songs were chosen because of their upbeat message and the continuous theme of love that is prevalent within the songs. The other three songs that were used were "Cryptorchid", "Deformography", and "Angel with the Scabbed Wings" (Warner, 1996, tracks 6, 7, and 10), performed by Marilyn Manson. These hard rock songs were chosen for their negative, downbeat tones as well as containing an overall hateful and angry theme.

Procedure

Before the investigation began, all participants were asked to read a cover letter to assure their permission was given to continue with the research. The subjects were randomly assigned to three groups. The first group contained 20 participants, and they listened to the soft rock music on a volume of 5 on a 10 point scale for approximately five minutes in order to establish a desired mood. Once the mood was established the music continued and the participants were administered the various tests. The first assessment given was the projective tests. The researcher displayed five different ink blots for two minutes each. The participant then had to produce five nouns per ink blot. The next assessment was the objective test, or the Emotional Assessment Scale, which was also given while the music continued to play. The participants were instructed to rank their mood on eight different dimensions from

least possible to most possible. The volunteer would simply make a slash mark on the 100 millimeter line to indicate how they were feeling at that moment, which would offer a self-evaluation of the participant’s current mood. The four item questionnaire was then administered. The second group also contained 20 participants, and they went through the same procedures except they listened to the hardcore rock music. The third group acted as the control, and went through the same procedures as well except they did not listen to any type of music.

Results

For this experiment, the independent variables were the types of music and types of evaluation. The dependent variables were the scores on the emotional assessment scale, given to assess the emotions of the participants, and the scoring of the ink blot tests.

**Table 1
Emotional Assessment Scale Dimension Scores for Music Types**

Dimensions	Mae (soft)		Manson (hard)		Control		
	M	Sd	M	Sd	M	Sd	
Anger	4.42	7.02	34.82	27.35	16.77	17.73	****
Anxiety	25.88	20.35	40.01	28.13	36.28	26.30	
Disgust	3.65	4.94	26.52	23.53	13.18	18.15	***
Fear	11.12	10.73	21.92	18.54	12.55	12.24	*
Guilt	8.93	9.15	29.35	17.85	14.20	17.92	***
Happiness	53.07	21.95	19.37	20.91	42.78	19.02	****
Sadness	7.42	5.20	27.62	21.92	16.33	20.41	**
Surprise	19.05	13.98	23.82	15.17	22.53	16.88	

Note. The highest possible score was 100. Higher numbers for the mean denote a stronger emotional state towards the type of music to which one was exposed.

*p < .05. **p < .01. ***p < .001. ****p < .0001.

Several one way analyses of variance were used to determine if the emotions derived from the three music conditions differed significantly. The objective test (EAS) was broken down into eight specific emotions, which were compared to the type of music played. The six emotions that showed a significant difference between the types of music were: anger, $F(2, 59) = 12.62, p < .0001$, disgust, $F(2, 59) = 8.72, p < .001$, fear, $F(2, 59) = 3.39, p < .05$, guilt, $F(2, 59) = 9.32, p < .001$, happiness, $F(2, 59) = 13.98, p < .0001$, and sadness, $F(2, 59) = 6.65, p < .01$. Descriptive statistics are shown in Table 1.

Also, there was a significant difference between the projective test scores and the types of music, $F(2, 59) = 4.41, p < .05$. A Pearson's correlation was used to determine if the participants liked the music to which they were exposed, and there was a significant tendency to like soft rock and dislike hard rock, $r(40) = .37, p < .01$.

Discussion

According to the data collected, there was a significant difference between the types of music played and the emotion the participants experienced based on the projective and objective measures. The ink blot (projective) tests distinguished more negative stressors in the hard rock music versus the control or the soft rock music. Also, the EAS (objective) tests revealed more negative emotions in the hard rock group than soft rock or the control group. The control group even displayed more negative emotions than the soft rock group. This data supported the hypothesis that even a brief exposure to the music, such as fifteen minutes, was able to produce significant differences in both the projective and objective measures. Mae, the soft rock music, produced a positive response to stress, thereby eliminating hostile emotions. Consequently, Marilyn Manson, the hard rock music, expressed a more stressful environment, thereby raising the levels of more negative emotions.

Ink blot tests are very difficult to score. Although the Barrier Response scoring system (Masling) gave a list of criteria to precisely judge the ink blot responses of the volunteers, this scoring method had a weakness. This system did not differentiate between a positively toned response, such as a beautiful red rose, and a negatively toned response, such as an ugly dead flower. Categorizing opposing responses together, as the Barrier Response may often do, may not have been the most accurate way to score the projective test used in this study.

The objective test (EAS) also clearly distinguished more negative emotion with the hard rock music than control or the soft rock music. In fact, those who listened to Marilyn Manson were angrier than the control, and those who listened to Mae were significantly less angry than those who listened to no music. This is compatible with the findings of Smith and Boyson (2002), which determined that particular genres of music contain more violence than others. In addition, the data obtained also showed that more violence is found in certain factions of music within a single genre, like rock music.

Manson evoked a more negative emotional response than Mae and the control group in the moods of disgust, guilt, happiness, and sadness. Emotions that showed no significant difference between the three groups were surprise and anxiety. Of all the emotions, one would not expect to see a strong difference between groups with these emotional states because surprise and anxiety are two of the more neutral emotional states. Although the styles of music are vastly different, both are still likely to evoke the same amount of neutral emotions.

The data analyzed also showed that those who listened to soft rock (Mae) enjoyed the music, while those who listened to hard rock (Marilyn Manson) did not. This outcome was expected because of the nature of the types of music. These findings were also congruent with the data taken from the EAS. The participants enjoyed listening to soft rock because they felt happier, less angry, sad, disgusted, etc. Likewise, the volunteers did not like listening to hard rock because they were angrier, sadder, and more disgusted. The data obtained was also congruent with the findings of Atkin et al. (2002) in that certain types of media, including music, can affect the perception and emotions of an individual. The negative hard rock music was positively correlated with negative emotions and the soft rock music was positively correlated with positive emotions, which were similar to the research done by Smith and Boyson (2002) and Barongan and Nagayama Hall (1995). According to their research, rap music tended to be the most negative and violent. Therefore, a sample of this genre of music should also be evaluated in order to strengthen this study and to understand the differences between the types of music. This would enhance the knowledge of the effects of each genre on one's mood.

When replicating this study, one might examine the idea of evaluating different genres of music to strengthen these findings

and to understand the differences between the types of music. One might also examine the idea of decreasing exposure time in order to determine exactly when one's emotional state is affected.

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Appendix A

