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The Role of Music in Lyric Analysis: The Effect of Music on Participants' Emotional Changes, Perceived Disclosure Levels and Group Impression

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THE ROLE OF MUSIC IN LYRIC ANALYSIS:
THE EFFECT OF MUSIC ON PARTICIPANTS' EMOTIONAL CHANGES,
PERCEIVED DISCLOSURE LEVELS AND GROUP IMPRESSION

by

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ABSTRACT

The purpose of the study was to examine the role of music in lyric analysis with live music, recorded music and no-music conditions. In this study, group differences were examined with four categories: emotional changes, perceived disclosure levels, participants' perception of the group, and the selection of lines and lyric discussion topics which most affected the participants. Ninety participants were recruited from a university in Florida. Each of 90 participants participated in one of 3 conditions: live music condition (n = 30), recorded music condition (n = 30) and no music condition (n = 30). Research sessions were randomly assigned and were conducted with 3 participants at a time. A pre- and posttest design was used to measure the emotional changes, and posttest only design was used to measure the perceived disclosure levels and the group impression. The lyric sheets were analyzed for the selection of lyric lines and the discussion topics. A One-way Analysis of Variance (ANOVA) revealed significant differences in the post feeling of sadness in the live music condition, and in the participants' perceived disclosure levels in the recorded music condition. There were no other significant differences by types of music.

CHAPTER 1

INTRODUCTION

The power of music has been recognized from very early in history. Early literature shows us how people viewed this power (Hinohara, 2001; Kuribayashi, 1998; Merriam, 1964). There is a story in the bible, in the Old Testament, I Samuel, Chapter 16, verse 23, that is about King Saul who became ill because of an evil spirit, but he was healed by music played on the harp by David. The story of Orpheus and Eurydice from Greek mythology is another example. When Orpheus, who was the most famous singer on the earth, sang and played his lute, his enchanted music could calm the fiercest of beasts and melt a listener's heart. His music was so powerful that it even affected the King of Death (Katz, 2004).

Throughout history the power of music has been used in various fields such as medical, psychiatric, psychological, religious and personal use. In ancient Egypt, people "called music 'physic for the soul'" (Merriam, 1964, p. 111). People considered music as having an influence on human emotions, thoughts, and physical health (Kuribayashi, 1998). Philosophers such as Plato and Aristotle thought that music had a positive effect on the human mind and body (Gilman & Paperte, 1952); and Pythagoras thought that music could be used to cure mental disorders (Merriam, 1964). Although magical and religious healing faded by B.C. 600 because of the development of medicine in Greece, music was still used as a cure for psychiatric symptoms in Europe in the Renaissance era (Kuribayashi, 1998). Music was not only used for the treatment of psychiatric disorders, but was also prescribed as prevention medicine. Music, when prescribed properly, was considered to have great effects on stabilizing psychological and emotional states (Kuribayashi, 1998).

In the nineteenth-century, researchers started to study the effect of music systematically and scientifically. In the late eighteenth-century, an article about the affect of music, author unknown, was published in *Columbia Magazine*. In the article, the affect of music on human emotion was discussed and a therapeutic use of music was recommended (Kuribayashi, 1998). In the nineteenth-century, more publications and research on the effects of music emerged in the field of medicine. For example, E. Atlee wrote about the effect of music in medical treatment; S. Mathew wrote about the effect of music on the alleviation and the treatment of medical and psychiatric conditions; and J. Dogiel published his experimental results on music's ability to affect physiological changes (Davis, 1987; Hinohara, 2000; Kuribayashi, 1998).

However, it was in the twentieth-century that the use of music again flourished in the field of healthcare. The effectiveness of using music in hospitals was greatly recognized after World War I and World War II. Then, shortly afterwards, the field of music therapy was created with the establishment of a music therapy degree program at Michigan State University in 1944 (American Music Therapy Association, 1999). Since then, music therapists and researchers have contributed to the development of music therapy and to society.

In order to deliver effective music therapy services, music therapists carefully select music and music therapy techniques for each session. To utilize music effectively in therapeutic settings, researchers have studied the effect of different types of music, different components of music, and different music therapy techniques. The studies have been conducted with various populations in different settings: from premature babies in NICU to elderly people in nursing homes and hospice care.

For premature infants, music played an important role for their survival (Standley, 1991); music significantly increased their daily average weight, and decreased length of hospital stay and stress behaviors (Caine, 1991). Music also positively influenced oxygen saturation levels, heart rate and respiration rate of premature infants (Cassidy & Standley, 1995). For pediatric patients, music therapy helped reduce anxiety and fear of surgery and needle insertion (Chetta, 1981; Malone, 1996). A meta-analysis by Whipple (2004) indicated that music therapy was an effective intervention for children and adolescents with autism.

A study by Thaut (1989) showed that group music therapy with psychiatric prisoner-patients resulted in significant improvement on their state of relaxation, their mood and emotions, and their self-image. Music therapy was used effectively in the treatment of patients with substance abuse problem. Music therapy intervention positively influenced patients' self-expression, self-esteem and self-image; engagement in groups; and development of social skills and leisure skills. (Bednarz & Nikkel, 1992; James, 1988; Treder-Wolff, 1990). A meta-analysis by Silverman (2003) indicated the significant effect of music on desired behavior change and on reduction of the symptoms of psychosis for adult patients with psychotic symptoms.

Hilliard (2003) found that terminal cancer patients who received music therapy reported a higher quality of life than those who did not receive music therapy services. Music therapy was also effective for elderly people with dementia. The patients who received music therapy reality orientation sessions showed significant improvement compared to the patients who had traditional reality orientation without music (Riegler, 1980). Reminiscent music therapy was effective for reducing depressive symptoms and improving mood and interaction skills (Ashida, 2000). Patients demonstrated decrease in agitating behavior during and after music therapy than before music therapy (Brotons & Pickett-Cooper, 1996). Music therapy also helped improve the abilities of face-name recognition in patients with memory loss (Carruth, 1997).

Outside the world of research, people's lives are also filled with music; people are surrounded by music from an early age and grow up with it (Shinoda, 2001). Music is played in stores, on the radio, on television, and even on the phone. Some people listen to music when they drive their cars, when they eat and when they work or study. Not everyone may listen to music with clear intentions or with recognition of musical effects when they turn on the CD player or the radio. However, knowingly or unknowingly, many people listen to music to relax, to increase productivity, or to alter mood (Shinoda, 2001). Adolescents in America and England listen to music mainly to have fun and to help them fall asleep. Their music listening is in association with self-actualization and the fulfillment of emotional and social needs (Hargreaves, North & Tarrant, 2000).

Music is so much a part of people's lives, that using music in group therapy sessions is an advantage. Because of its nature, music can create a non-threatening

environment which is an important part in therapy sessions. Garvin (1990) and Yalom (1995) stated that a safe and supportive environment where group members could speak freely and express feelings honestly was a very important condition in counseling and psychotherapy sessions. Music can also help people express their thoughts, emotions and feelings in therapy sessions (Clendenon-Wallen, 1991).

CHAPTER 2

REVIEW OF LITERATURE

Group Counseling/Psychotherapy

In counseling and psychotherapy, emotion plays a substantial role because it is a factor of both psychological and psychiatric problems, and of a successful therapeutic process (Thoits, 1985; Yalom, 1995). Butcher and Koss (1986) stated that an appropriate amount of emotional arousal might facilitate therapeutic changes. This was evidenced by findings from past researches in which some associations were found between clients' attitude changes and their heightened emotional arousal. Emotional arousal can be provoked by a therapist's comments and feedback, therapist's behavior and facial expression, their recalling of certain events, or group members' feedback. Emotion is also involved in Yalom's eleven primary therapeutic factors which he stated as the key factors for therapeutic changes: 1) instillation of hope, 2) universality, 3) imparting information, 4) altruism, 5) the corrective recapitulation of the primary family group, 6) development of socializing techniques, 7) imitative behavior, 8) interpersonal learning, 9) group cohesiveness, 10) catharsis and 11) existential factors (p.2). For some factors emotion has an indirect influence, and for others emotion has a direct influence. One of the factors that is closely related to human emotion is group cohesion.

Group cohesion is "one of the group conditions that most accounts for the effects of the group upon its members" (Garvin, 1990, p. 523). It is a factor for the successful group therapy outcome and a necessary precondition for the other therapeutic factors to function adequately (Yalom, 1995). Group cohesion does not happen by itself with time. A therapist needs to give deliberate attention to the group and to guide the group members. Group cohesion is formed not only by the positive feelings the members show

to each other such as love and comfort, but also by the negative feelings such as hostility and conflict (Yalom, 1995). If negative feelings were concealed, it would interfere with the therapeutic process and group cohesion would not develop (Achter, Kahn & Shambaugh, 2001; Yalom, 1995). Therefore, both the therapist and the clients need to work through the positive and the negative emotions in order for the group to become more intimate.

The honest expression of emotion and feelings, especially toward the other members of the group and toward the therapist, will lead the group to successful outcomes in therapy sessions (Garvin, 1990). How group members feel in the group is an important part of group therapy. When clients have feelings of satisfaction about therapeutic goals, tasks, and the relationship with the group members; they feel satisfied with group therapy (Garvin, 1990). People feel more comfortable speaking honestly and expressing their thoughts and feelings in a group that is cohesive. When an individual believes that social support is available, he or she tends to disclose more distressing personal information (Achter, Kahn & Shambaugh, 2001).

Self-disclosure is another element that is closely related to emotion in the therapeutic process. Self-disclosure is important in the personal therapeutic process as well as in group cohesion. However, the necessity of self-disclosure in counseling and therapy sessions is controversial. Some researchers suggest that self-disclosure is not necessary for a successful outcome while others suggest that self-disclosure is a very important factor for the client's success in the therapeutic process. Kelly (2000) stated that clients might be at risk for creating an unwanted image of themselves by revealing private, unfavorable information to the therapist. Clients might need to express accumulated negative feelings in order to feel better about their problems, but she stated that the effect of therapeutic catharsis was uncertain. A study by Carver, Lamnin & Murray (1989), on the other hand, supported the positive effect of self-disclosure. They stated that in therapy sessions, clients were not only expressing themselves and their emotions, but were also receiving help from the therapists to resolve their feelings. The resolution of emotion and feelings would lead clients to a basic change in their attitude. Donnelly and Murray (1991) suggested that supporting clients to face their emotional trauma might be the key role of the therapist.

Emotion

It is difficult to explain what emotion is because “emotion has an imprecise meaning that is defined mostly by example” (Kalat, 1996, p. 510). Because emotion relates to every part of a person’s life, researchers in many different areas have studied emotion such as philosophers, historians, neuroscientists, sociologists and psychologists. Although there are many theories of human emotion from all areas of study and although neuroscientists have started to understand the anatomical organization of fear, further research is required to fully understand the mechanism of human emotion (LeDoux & Phelps, 2000; Kalat, 1996; Kemper, 2000).

People live their entire lives under the influence of emotion; the production of which is related to all the groups and categories to which they belong such as gender, race and ethnicity, families, schools, and culture (Kemper, 2000). Needless to say, the impact of emotion in human life is enormous.

In our society, there are unspoken rules of emotional expression, in other words, the manner of expressing emotion. The appropriate emotional expression is expected and varies in different social groups as well as in different cultural backgrounds (Kemper, 2000). An individual can express emotion more freely when he or she is with family members or with close friends, however, some level of emotional regulation is required in a professional life. When someone’s expression exceeds or diminishes greatly from the norm, this individual may be considered as socially inappropriate (Kemper, 2000).

There are also “feeling rules” that determine the appropriate amount, duration and suitability of emotion (Kemper, 2000, p. 51). A person is expected to feel sad when he or she has lost something or someone, and the amount and duration of the sadness depends upon what or who was lost. When a person’s feeling exceeds or diminishes greatly from the norm, or a person’s feeling is not suitable to the situation, this individual may be considered as having some sort of psychological or psychiatric problem (Kemper, 2000).

According to Thoits (1985), most of the disorders in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III; American Psychiatric

Association, 1980) are related to deviant emotions. He stated that “ behavior thoughts and sensory perceptions classified as evidence of more serious disorder (e.g., drug dependence, paranoia, schizophrenia) almost always have deviant emotional states as additional defining features or as associated features of the disorder” (p. 241). Therefore, management of emotion becomes crucial and necessary for people to live in this society.

The management of emotion requires effort. Kemper (2000) stated that there were two types of “emotion work(s);” there are “surface acting” and “deep acting” (p. 51). Surface acting is when people put on a facial expression that is different from what they are actually feeling. A person smiles when he or she feels sad. The reason behind surface acting may differ from person to person. One person may put on a smile because he or she is with other people and does not consider his or her true attitude as being appropriate to the atmosphere. Another person may smile in order to prevent themselves from being as sad as they truly are. Deep acting is an attempt “to change the feeling by changing the determinants of feeling-mainly the mental construction or appraisal that gave rise to the feeling, but also including such underlying physical elements as muscle tone and heart rate” (Kemper, pp. 51-52). This may include relaxation techniques and thinking of the gender-role like “a man is not supposed to feel sad and cry when someone was mean to him.”

Shott (1979) presented a theory for the production of negative emotions such as guilt, shame and embarrassment. Those emotions occur when a person looks at himself or herself from the view point of others and finds some discrepancies between another person’s view and his or her own self-view. A person may experience guilt when he or she thinks or believes that other people morally judge his or her actions as inadequate. Shame may be experienced when a person realizes that his or her self-image is not accepted by other people. Embarrassment may occur by the realization that a person’s self-presentation is not accepted by other people (see Shott, pp. 1323-1324). Therefore a person may feel strong negative emotion when he or she finds out that there is a large gap between his or her self-view and the view of others. When a person has too much negative emotion, he or she may suffer from some sort of psychological or psychiatric problem, and in some cases, professional assistance may be necessary.

Music Therapy

The emotional aspect of music, therefore, is essential in music therapy in the psychiatric setting. Although individuals react to music differently, studies have shown the effectiveness of music and music therapy on relaxation and behavioral changes.

Knight & Rickard (2001) conducted a study on the effect of familiar, relaxing music. Participants reported that they felt less stressed when they familiar, relaxing music was played in the background after a stressor was presented. The exposure to the relaxing music prevented the significant increase in subjective anxiety, systolic blood pressure, and heart rate which was observed in the control group. Davis and Thaut (1989) found that participants' state anxiety level was significantly decreased and that they were more relaxed after listening to relaxing music.

Hargreaves, North and Tarrant (2004) studied the effects of music on the helping behavior of university students who used a university gym to work out. They found that students who listened to uplifting music in the background while they worked out were more likely to offer help on a high-cost, leaflet-distributing task than those who listened to annoying music in the background while they worked out. The increase in helping behavior may have occurred because of the initial positive emotional change caused by the uplifting music. People tend to be friendly and supportive of other people when they feel happy. Bradley, Harris and Titus (1992) found that easy listening and country/western music promoted more appropriate behaviors while hard rock and rap music promoted more inappropriate behaviors from clients in a state mental health hospital. The negative behavioral change in the patients may have occurred because of the underlying message in the songs or because the patients associated the song/music with inappropriate behavior. Either way, there was a possibility that their behavioral change was partly because of the music influencing their emotion. Music also had a positive effect on patients with chronic pain. When patients exercised with music playing in the background, they exercised more than when there was no music. Those patients continuously requested music to be played during their exercise time (Wolfe, 1978).

Mezzano and Prueter (1973) studied the effect of background music on the initial counseling interaction between counselor and client. They found that soothing music in the background promoted a more affective interaction between counselor and client than stimulating music or no music. Background music also influenced clients' self-disclosure (Jensen, 2001). Jensen designed a study to compare clients' self-disclosure by writing or talking with instrumental classical music in the background or no music. She found that background music had some effects on clients' choice of disclosure topics, promoted cognitive suggestion and expression, and increased the enjoyment of listening to classical music. She also found that with some clients in a music/speaking condition, their speech cadence, the pitch of their voices and the pacing of their conversation matched with the musical cadence, pitch, harmony and tempo of the background music. Clients in music conditions reported that music suggested the ideas to speak or to write significantly more often than those who spoke or wrote in silence. Some clients in music conditions reported that their emotional state was congruent with the music, emotional intensity was congruent with musical intensity and unexpected emotions were induced by the music. Although Jensen stated that these clients' reports were inconclusive, there was certainly some association between music and emotion.

Music and Emotion

Although there are controversial argument about music and emotion (Matravers, 2003; Zangwill 2004; Zemach 2003), there is no doubt that many people describe music with emotional terms and relate their feelings to music. People often say things like "that music was very sad," "it was exciting music," "his music was very funny," "the happy music" and so on. Although Zangwill stated that, "music, in itself, has nothing to do with emotion" (p. 29), people associate musical content and musical performance to emotion. However, it is difficult to study exactly how music relates to human emotion because of the nature of the relationship between human emotion and music. To understand something that is the combination of complex human anatomy and an intricate art form is exceedingly complicated.

Hevner (1935) designed a study to examine the listeners' perception of emotional characteristics of major and minor modes. In her research, the only difference of the pieces compared was the mode. She kept other musical contents exactly the same such as the rhythm, the tempo, the dynamics, the harmony and the melody except the mode difference by transposing a major piece to a minor, and a minor piece to a major. The results showed that listeners associated major mode with positive emotional adjectives such as happy, cheerful, joyous and gay; on the other hand, they associated minor mode with negative emotional adjectives such as melancholy, mournful, sad and depressing. Hevner developed an adjective checklist which consisted of 67 adjectives in eight clusters. It was revised and improved by Farnsworth in 1954 and 1969, and by Schubert in 2003 (Farnsworth, 1954; Schubert, 2003). Repp (2004) found that emotional intelligence and the recognition of basic emotions (happy, sad, angry and fearful) in musical performances are significantly correlated. Even though some musical compositions used in his study had an inherent mood, participants were able to identify the intended emotion of the performer to a certain extent. Children as young as four-years-old were capable of identifying emotions in music in a way that was similar to those of adults (Nawrot, 2003). Nawrot also found that the judgments of the type of emotions for most of the musical selections were consistent between children and adults. These studies showed that the association between music and emotion was formed quite early in a person's life and that people identify emotion in music in a similar way across generations.

Some researchers have tried to identify musical content which affected a person's identification of emotion in music. Sloboda (1991) conducted a research to identify the structural features in music that induced emotion. His findings show some association between musical characteristics and an emotional response to music. Melodic appoggiaturas and melodic or harmonic sequences induced emotional responses that he categorized as "tears" such as crying and lump in the throat. The emotion that he categorized as "shivers" such as goose pimples and shivers down the spine was associated to new or unprepared harmony. Kamenetsky, Hill & Trehub (1997) found that variation in dynamics, but not in tempo, affected the listener's perception of emotion in music as well as their musical preference. Female listeners interpreted music as more emotionally expressive than did male listeners. The findings of Costa, Fine and Ricci

Bitti (2004) suggested that the mode, the tonality, and the intervals used in musical melodies also affected a person's perception of emotion in music. For example, people associated happiness and serenity with the major mode. When unisons and octaves occurred frequently in a melody, people chose words like "potency," "energy," and "vigor" to explain the music. Gagnon and Peretz (2003) found that melodies in the major mode and in a fast tempo conveyed happiness while melodies in the minor mode and in a slow tempo conveyed sadness. In their study, as opposed to the findings of Kamenetsky, Hill & Trehub, tempo was the greater determinant for the happy-sad judgments than the mode. Although these studies may suggest that a certain level of agreement exists amongst individuals in their recognition of emotion in music, the problem that remains is how generalizing those findings is possible for musical works of all different genres when music is greatly varied.

Purpose of the Study

Because of the variety of music and of people's reaction to music, looking at music from various aspects is necessary in music therapy settings. Knowing how music influences a person's emotion and behavior would be a great help for music therapists in delivering effective interventions to clients. In this study, the role of music in lyric analysis was examined.

Lyric analysis and song writing are often used in psychiatric settings with different populations: children with severe emotional disturbances (Hong & Hussey, 1998), adolescents with chemical dependency (James, 1988), adolescent delinquents (Moss, 2004) and adult patients with depression (Cordobes, 1997). To increase relaxation, communication and leisure skills is a main issue in music therapy in psychiatric settings because patients are often socially isolated and often have difficulty relaxing, concentrating, dealing with stressful situations, expressing themselves adequately, expressing emotions appropriately, and having fun in their lives (Wolfe, 2000). Lyric analysis and song writing can facilitate the expression of feelings and

emotions and self-disclosure, and can improve coping skills and help form group cohesion (Clendenon-Wallen, 1991; Goldberg, 1989; Wolfe, 2000).

In Cordobes' study, writing a song together developed a feeling of partnership between group members. She also found that patients used a higher level of emotional words in group song writing and suggested the use of song writing as a way to address treatment issues. James (1988) stated that music therapists could positively influence adolescents' perception of self such as self-concept and the sense of control over one's environment by using lyric analysis and song writing. Using song lyrics in a discussion group is a safe and non-confrontative tool which can also become a common starting place for group discussion (Clendenon-Wallen, 1991). Some clients cannot express how they feel or what they think with their own words regardless of their ages because it is embarrassing for them or because they are scared to verbalize it. For those people, song lyrics can be a great tool in the expression of thoughts and feelings (Murai, 2001; Wolfe, 2000). Children could identify negative emotions and express their feelings, as well as learn a healthier way of living by using song lyrics (Hong & Hussey, 1998).

When using lyric analysis, there are two ways to introduce a song: either by the therapist singing or by playing a CD. Live music is preferred by some music therapists and others may prefer to play CDs. Past studies of live versus recorded music did not show a clear result although both music interventions were effective (Bailey, 1983; Baker, 2001). Although recorded music is what people usually listen to in their daily life, it is not certain whether or not the difference between live and recorded music would have any influence on patients' emotional states, level of self-disclosure and involvement in the groups. In this study, the role of music in a lyric analysis technique with small groups was examined. A popular song (see Appendix D) was used in live music, recorded music and no music conditions.

The research questions are as follows:

- 1) Were participants emotionally influenced by type of music?
- 2) Were participants' perceived disclosure levels influenced by type of music?
- 3) Were participants' perception of others influenced by type of music?
- 4) Were participants' choices of discussion topics and most intense lyric lines influenced by type of music?

CHAPTER 3

METHOD

Subjects

Ninety people were recruited from a state university in Florida. Participants were currently taking classes at the university or had recently graduated from the university. As long as they were taking classes at the university or were recent graduates, no criteria were set for participating in this study. They were asked to participate in the study voluntarily. When they had agreed to participate, they were asked to sign up in a sign-up sheet which had dates and times. Each of 90 participants participated in one of 3 conditions: live music ($n = 30$), recorded music ($n = 30$) and no music ($n = 30$). Research sessions were randomly assigned and were conducted with 3 participants at a time.

Demographic Information

Of the 90 participants, 60% were female, 64.4% were Caucasian, and 93.3% were native English speakers (see Table 1). As shown in Table 2, females were the majority in the live music condition and the recorded music condition, but numbered a little less than half in the no-music condition. Caucasian and native English speakers were the majority groups in all three conditions. The age ranges were from 18 to 37 ($M = 22.93$, $SD = 4.425$) in the live music condition, from 18 to 40 ($M = 23.23$, $SD = 5.056$) in the recorded music condition, and from 18 to 34 ($M = 23.63$, $SD = 4.657$) in the no-music condition.

Table 1.
Participants' Demographic Information

Type of information	The number of participants	Percentage
Gender		
Male	36	40
Female	54	60
Age range (Mean)	18 - 40 (23.27)	
Major		
Music	56	62.2
Non-music	34	37.8
Ethnicity		
Asian	12	13.3
Black	8	8.9
Hispanic	6	6.7
White	58	64.4
Other	6	6.7
Language		
English	84	93.3
Non-English	6	6.7

Table 2.
Demographical Information by Group

Type of Information	Live (n = 30)	Recorded (n = 30)	No-music (n = 30)
Age range (Mean) (Standard Deviation)	18-37 (22.93) (4.425)	18-40 (23.23) (5.056)	18-34 (23.63) (4.657)
Gender			
Male (%)	12 (40.0)	8 (26.7)	16 (53.3)
Female (%)	18 (60.0)	22 (73.3)	14 (46.7)
Ethnicity			
Asian (%)	2 (6.7)	6 (20.0)	4 (13.3)
Black (%)	3 (10.0)	3 (10.0)	2 (6.7)
Hispanic (%)	2 (6.7)	1 (3.3)	3 (10.0)
White (%)	20 (66.7)	20 (66.7)	18 (60.0)
Black/Asian (%)	1 (3.3)	0	1 (3.3)
Hispanic/Asian (%)	0	0	1 (3.3)
Other (%)	2 (6.7)	0	1 (3.3)
Language			
English (%)	28 (93.3)	27 (90)	29 (96.7)
Non-English (%)	2 (6.7)	3 (10)	1 (3.3)

Procedure

A classroom in a university music building was used for the research sessions. Before the first session, unnecessary chairs were removed to the side of the room. Three chairs were set in the open space in a small semi-circle and a chair for the researcher was placed to face those three chairs.

The research sessions started with an introduction that included introducing the researcher, the purpose of the session, and brief procedure of the session. After the introduction, participants were asked to fill out the informed consent form (Appendix B) and the pre-emotion questionnaire (Appendix C). Participants were asked to fill out the intensity of the emotions that they had at the moment. When everyone finished, the researcher collected the questionnaire and handed out the beginning questionnaire (Appendix C). After collecting the beginning questionnaire, the researcher handed out the lyrics sheet (Appendix D) and asked the participants to mark words or phrases that stood out for them while they listened to or read the song. The participants were told that they could choose words or phrases which affected them either positively or negatively. Then the experimenter sang, played the CD, or let the participants read through the lyrics. When participants finished marking, they were asked to pick the top 3 words or phrases and number them according to the ones which most affected them. Then they were asked to fill out the music questionnaire (Appendix C). After collecting the music questionnaire, the researcher asked the participants to choose one of the top 3 words or phrases. Then participants were asked to talk about the reasons they picked the specific words or phrases, and to explain their personal experiences related to it. The researcher informed all the participants to feel free to ask questions or to comment on each other's responses, so the talk would be in a small discussion style. Unless there was a volunteer who started, the researcher asked whoever sat on the right to start and moved to the next person to the participant's right. After everyone talked, the researcher asked participants to mark with an asterisk the place on the lyric sheet with content they discussed. Then these sheets were collected. Then participants were asked to fill out the post-emotion questionnaire and the posttest (Appendix C).

Each session lasted approximately thirty minutes. Approximately 10 minutes were spent on the introduction, filling out the consent form, pre-emotion questionnaire, beginning questionnaire, listening/reading, filling out the music questionnaire and lyrics sheet. Approximately 5 minutes were spent per participant on discussion and five minutes for the post-emotion questionnaire and posttest together.

Material

The song used for this research was “Beautiful” by Christina Aguilera (Appendix D). The guitar used for the live music condition was the Eterna EC-10. A Durabrand CD-109 CD player was used in the recorded music condition to play the selection from CD album “Stripped” (the RCA Records) by Christina Aguilera.

Data Collection

There were a total of five questionnaires: pre- and post-emotion questionnaires, beginning questionnaire, music questionnaire, and posttest. Seven-point Likert scales were used in all questionnaires except emotion questionnaires.

The emotion questionnaires (Appendix C) asked the intensity of four basic emotions (fear, anger, sadness and happiness). Participants were asked to mark the intensity of emotions they had on the horizontal lines next to each emotion words: the right end indicated maximum feeling of an emotion and the left end indicated none. There were also three blank spaces with the intensity lines for the participants to list any other feelings or emotions that they had at the moment. The questionnaires were filled out at the beginning and the end of the session.

The beginning questionnaire (Appendix C) consisted of five questions which asked the participants’ physical and psychological states. It was filled out after the pre-emotion questionnaire.

The music questionnaire (Appendix C) had three questions: familiarity, preference, and effectiveness of the song. This questionnaire was handed out right after participants listened to or read the song.

The posttest (Appendix C) consisted of nine questions: 1) self-rating self-disclosure, 2) ratings for a group members' disclosure, 3) ratings for another group members' disclosure, 4) ratings for the supportiveness of the group members, 5) ratings for the supportiveness of the leader, 6) ratings for connected feelings to the group members, 7) ratings for connected feelings to the leader, 8) willingness to do the session again with the same group members, and 9) willingness to do the session again with different group members. The posttest was handed out at the end of the session after the post-emotion questionnaire.

Scoring of Measures

Intensity of each emotion was quantified with a ruler by measuring a vertical line indicated by a participant on the horizontal intensity line. The length of each line was 7cm; where 0 represents feeling of no emotion and 7 represents feeling of enormous emotion. The intensity was measured to two decimal places. After measuring all emotions of all participants for both emotion questionnaires, the emotional changes were calculated by subtracting the number of the pre-emotion questionnaire from the number of the post-emotion questionnaire. All changes were calculated separately using a Microsoft Excel sheet.

On the beginning questionnaire, score 7 on the seven-point Likert type scale indicated most healthy on questions 1 and 2; however, score 1 indicated most healthy on questions 3, 4 and 5. Therefore, the subjects' answers on questions 3, 4 and 5 were adjusted to match the questions 1 and 2: score 1 was changed to score 7, score 2 was changed to score 6, score 3 was changed to score 5 and so forth.

The first question on the posttest asked the level of self-disclosure. Each participant was identified with a number 1, 2 or 3 and they rated their own self-disclosure level. They rated other group members' disclosure level using their identify numbers.

For instance, participant 1 rated his own self-disclosure level on the scale “Group Member 1.” He also rated the disclosure of participant 2 and 3 on the scales “Group Member 2” and “Group Member 3” respectively. Participants’ own ratings of disclosure level were taken out from the results so that self-rating disclosures and group member-rating disclosures were separated.

On the lyrics sheet, participants ranked the top three places where they felt most attached or affected, and identified with an asterisk where they spoke in the discussion. The number of participants choosing each line was computed. A mark on a word was considered as a whole line selected and all marked lines were counted.

CHAPTER 4

RESULT

A One-Way Analysis of Variance (ANOVA) was used to analyze the total emotional changes, the perceived disclosure level, and participants' impression of the groups. The SPSS software in a university computer lab was utilized. An Excel work sheet was used to make a graph. The alpha level, $\alpha < .05$, was used for all the statistical tests. All the data of all ninety participants were used.

Since participants were not matched prior to the research sessions, an ANOVA was used to test the participants' physical and psychological states on the beginning questionnaire, and the participants' beginning emotional states on the pre-emotion questionnaire.

The result shows no significant differences between groups on the beginning questionnaire (Table 3) as well as on the pre-emotion questionnaire (Table 4). Therefore, there were no significant differences among groups on the participants' physical, psychological and emotional states at the beginning of the research sessions.

Table 3.
Analysis of the Beginning Questionnaire

Variable	df	F	p
Physical and emotional states	2, 87	.265	.768

Table 4.
Analysis of the Beginning Emotional State

Emotions	df	F	p
Fear	2, 87	2.702	.073
Anger	2, 87	.800	.453
Sadness	2, 87	2.003	.141
Happiness	2, 87	2.954	.057

Research Questions

1. Were participants emotionally influenced by type of music?

An ANOVA was used to test the effect of music on participants' emotional states at the end of the session. Table 5 indicates that a significant difference was found on feelings of sadness ($F = 3.724$; $df = 2, 87$; $p < .05$). A Multiple Comparisons Test was used to further examine the difference. The significant difference was between the live music condition and the no-music condition (Table 6). The participants in the live music condition reported the feeling of sadness significantly higher than the participants in the no-music condition (Table 7). There were no significant differences among the other comparisons.

No significant differences were found among groups on the total emotional changes (see Tables 8).

These results show that only participants' emotional state of sadness was influenced by the live music condition versus the no-music condition. There were no differences between the live and the recorded music or the recorded and the no-music conditions.

Table 5.
Analysis of the Post Emotional States

Emotions	df	F	p
Fear	2, 87	1.109	.334
Anger	2, 87	.019	.981
Sadness	2, 87	3.724	.028*
Happiness	2, 87	.962	.386

* $p < .05$.

Table 6.
Multiple Comparisons for Post-sadness

Emotion	(I) Group	(J) Group	Mean differences	p
Sadness	Live	No-music	.890*	.032
		Recorded	.167	.881

* $p < .05$.

Table 7.
Means of the Feelings of Post-sadness

Emotion	Groups	Mean
Sadness	Live	1.51
	Recorded	1.35
	No-music	0.62

Table 8.
Analysis of Total Changes of Emotions

Emotions	df	F	p
Fear	2, 87	.184	.832
Anger	2, 87	.403	.670
Sadness	2, 87	1.835	.166
Happiness	2, 87	1.865	.161
Total changes	2, 87	.504	.606

2. Were participants' perceived disclosure levels influenced by type of music?

An ANOVA was used to test the participants' perceived disclosure levels. As shown in Table 9, a significant difference was found ($F = 3.730$; $df = 2, 87$; $p < .05$). The data were further examined with a Multiple Comparisons Test. Table 10 indicates that the significant difference was between the recorded music and the live music conditions. The participants' perceived disclosure levels were significantly higher in the recorded music condition than in the live music condition (Table 11).

Table 9.
Analysis of the Perceived Disclosure Levels

Dependent variable	df	F	P
Total disclosure levels	2, 87	3.730	.028*

* $p < .05$.

Table 10.
Multiple Comparisons for Perceived Disclosure Levels

Dependent Variable	(I) Group	(J) Group	Mean differences	p
Total disclosure	Recorded	Live	1.83333*	.039
		No-music	.20000	.960

* $p < .05$.

Table 11.
Means of the Perceived Disclosure Levels

Dependent Variable	Groups	Mean
Total disclosure levels	Live	4.78
	Recorded	5.39
	No-music	5.32

3. Was participants' perception of others influenced by type of music?

In order to see the participants' perception of the group, the posttest questionnaire was analyzed using an ANOVA. The posttest questions from 2 to 7 were examined for the impression of the other group members and the group leader.

No significant differences were found on the posttest questionnaire (see Table 12). Therefore, participants' perception of others was not influenced by type of music.

Table 12.
Analysis of the Group Impression

Dependent variable	df	F	p
Posttest questions 2-7	2, 87	1.238	.295

4. Were participant's choices of the discussion topics and most intense lyric lines influenced by type of music?

The lyric sheets were examined for the participants' choices of discussion topics and most intense lyric lines. On the lyric sheets, participants marked with an asterisk the ranking number about which they talked in the discussion. Each asterisked ranking number was counted separately by group and reported on Table 13.

Table 13 shows participants' choice of discussion topic. The highest number of participants who spoke about their most affected lines was in the recorded music condition (73.3%). The no-music condition had the second highest number of participants (63.3%) who spoke on their first choice and the live music condition least (53.3%). In the no-music condition, four participants spoke about lines which they did not mark as one of their top three most affected words or phrases.

Figure 1 shows that the line that affected people's emotions most was the same across all three conditions; however, the number of participants who selected the line in the live music condition was 35% less than the recorded music condition and 31.6% less than the no-music condition. Participants' selection of lines from 20 to 24 was similar across the three groups; however, participants in the live music condition, again selected less compared to participants in the recorded music condition and the no-music condition. None of the participants in the no-music condition chose lines from 26 to 31 which were the last paragraph of the song lyrics (see Appendix D). The top five lines selected by participants were different across groups. In the live music condition, the top five selected lines were line 23, line 3, line 11, line 12, and lines 1 and 25. In the recorded music condition, the top five selected lines were line 23 and lines 5, 6, 9 and 22. In the no-music condition, the top five selected lines were line 23, line 22, line 26, and lines 2 and 9 (see Table 14).

These results indicate that participants' choices of discussion topics and most intense lyric lines were different among groups.

Table 13.
Participants' Choice of the Discussion Topic

Groups	Selected Choice			
	1	2	3	Other
Live Music (n = 30)	16 (53.3)	10 (33.3)	4 (13.3)	0 (0)
Rec. Music (n = 30)	22 (73.3)	4 (13.3)	4 (13.3)	0 (0)
No-Music (n = 30)	19 (63.3)	4 (13.3)	3 (10.0)	4 (13.3)

Note. Parentheses indicate the percentage.

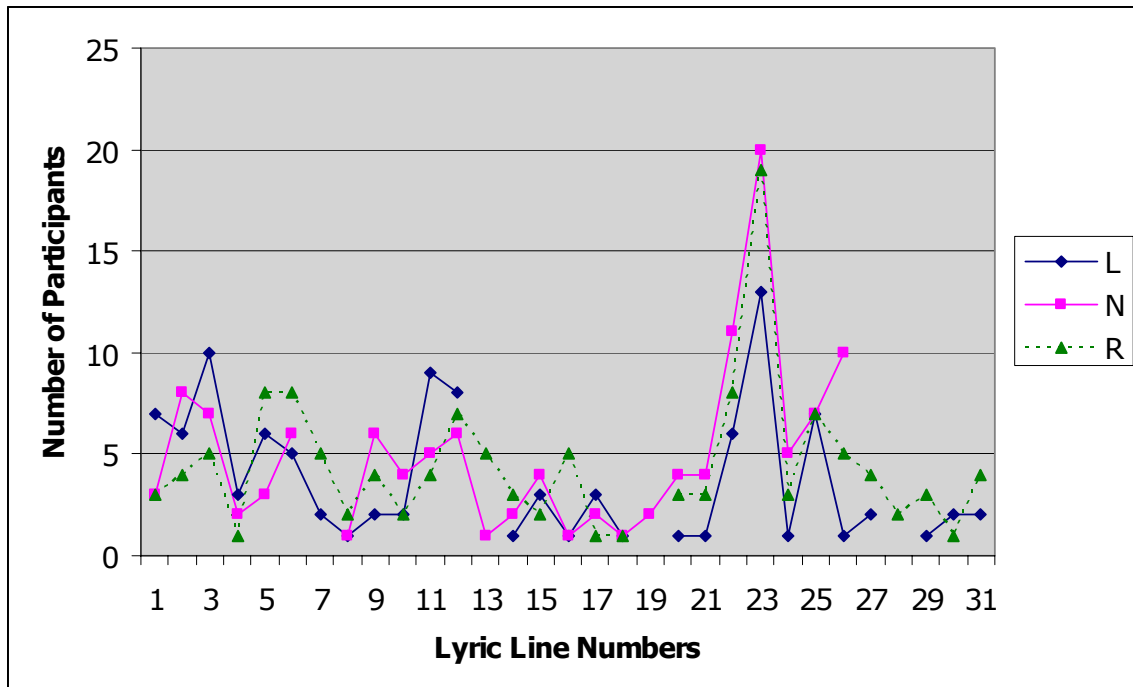


Figure 1. Lyric lines chosen by participants.

Table 14.

Top Five Most Affected Lines by Group

Ranking	Lines from the songs		
	Live	Recorded	No-music
1	(23) Full of beautiful mistakes	(23) Full of beautiful mistakes	(23) Full of beautiful mistakes
2	(3) Now and then, I get insecure	(5) I am beautiful no matter what they say (6) Words can't bring me down (9) So don't you bring me down today (22) We're the song inside the tune	(22) We're the song inside the tune
3	(11) So consumed in all your doom		(26) And tomorrow we might awake on the other side
4	(12) Trying hard to fill the emptiness		(2) then suddenly, it's hard to breathe (9) So don't you bring me down today
5	(1) Every day is so wonderful (25) The sun will always shine		

Note. Parentheses indicate line numbers of the lyrics.

CHAPTER 5

DISCUSSION

In this study, group differences were examined with four categories: emotional changes, perceived disclosure levels, participants' perception of the group, and the selection of lines and lyric discussion topics which most affected the participants. An ANOVA revealed significant differences in the post feeling of sadness in the live music condition and in the participants' perceived disclosure levels in the recorded music condition. There were no other significant differences by types of music.

Results suggest that participants' view of the group and group involvement were highest in the recorded music condition and were lowest in the live music condition although the overall ratings in both conditions were high. Playing a CD may have contributed to the level of group involvement in the recorded music condition. Kato (1998) stated that music could evoke emotions that relate to his or her past experiences. Therefore, if participants listen to popular music often in their pastime, they may have been more able to feel relaxed and comfortable with the recorded music.

Although the result did not yield a significant difference in the self-rating disclosure levels (see Appendix E), fewer participants in the live music condition (53.3%) reported their disclosure as personal (5 and higher in the rating scale) compared to the recorded music (73.3%) and the no-music (73.3%) conditions. Since there was not much increase in feelings of happiness and more increase in sadness, participants in the live music condition may have experienced a more serious atmosphere than the other conditions. Their disclosure may have been more serious as Stiles (1984) stated that clients who have disclosed more subjective information tend to experience negative feelings. However in this study, the finding did not clearly tell the quality of the self-disclosure. Since disclosure of non-distressing personal information may interrupt the

therapeutic process (Achter, Kahn & Shambaugh, 2001), further study is necessary to examine the influence of different music settings on the quality of self-disclosure.

The live music condition had the lowest self-rating disclosure levels although the participants rated highest on liking and effectiveness of the song, and selected more lyric lines that expressed deeper feelings. This may indicate the importance of a music therapist. In this research sessions, the role of the group leader was rather passive: just to listen to the participants. Therefore, the participants probably were not able to fully express themselves because the group leader did not lead them to a deeper self-expression nor create an environment for them to explore their feelings and thought. In music therapy sessions, music is a tool; therefore, a music therapist needs to use it wisely.

These findings may suggest using live music and recorded music depending on the group members and on the purpose of the session. Since feelings of belonging and connecting to the group contribute to successful therapeutic outcomes (Corsini, 2000), using recorded music may help group members who do not yet feel comfortable with each other. A music therapist may be able to use live music in order to control the impression of specific words or phrases of a song. When a more intense discussion is desired, live music may be used.

Because musical taste is different from person to person, much more study is necessary; using a different song and a different singer may have different results from those of this study. Adolescents are deeply involved in popular music; therefore, they may have different reactions to live versus recorded music. In this study, the no-music condition was as effective as the recorded music condition. However, the age of the participants and their cognitive comprehensive ability must be considered. The use of live music may be preferred with younger patients or with patients who have poor concentration or comprehension of language because the therapist has more control over emphasizing certain words. Since participants in the no-music condition did not choose any lines from the last phrase, it may indicate that music helped keep participants' attention to the end of the lyrics by following the words that the singer sang. In that case, using music is beneficial for patients who have problem focusing.

We cannot conclude the role of types of music on lyric analysis from this study alone. Since the influence of emotion upon other dependent variables is uncertain, it is

difficult to draw a conclusion on the relationship between the music settings and participants' performance in the session. Further study is necessary taking another emotion measurement right after the introduction of the song. More research is necessary to find a stronger relationship between music, emotion and patients' performance in the session.

APPENDIX A

Human Subject Committee Approval



Office of the Vice President
for Research
Tallahassee, Florida 32306-2763
(850) 644-5260 • FAX (850) 644-4392

APPROVAL MEMORANDUM (for change in research protocol)
from the Human Subjects Committee

Date: November 14, 2003

From: David Quadagno, Chair *DQ/HH*

To: Yuka Fujioka
Dept: 125 Chapel Drive, No. 21
Tallahassee, FL 32304

Re: Use of Human subjects in Research
Project entitled: **The Effect of Music/Songs on the Clients' Mood Changes and Self-Disclosures**

The memorandum that you submitted to this office in regard to the requested change in your research protocol for the above-referenced project have been reviewed and approved. Thank you for informing the Committee of this change.

A reminder that if the project has not been completed by April 8, 2004, you must request renewed approval for continuation of the project.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446..

cc: J. Standley
chgapp.doc
APPLICATION NO. 03.196-R

APPENDIX B

Informed Consent Form

Informed Consent Form

I am a graduate student under the direction of Professor Jayne Standley in the Department of Music Therapy at Florida State University. I am conducting a research study to better understand the effect of popular song on people.

Your participation will involve paper and pencil questionnaires at the beginning, middle and the end of the session, as well as a short discussion about a song. The total time commitment will be about 30 minutes. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty (it will not affect your class grade). The results of the research study may be published, but your name will not be used.

There is a minimal risk if you agree to participate in the study. The possible risk is a emotional discomfort from talking about yourself and your feelings.

The possible benefit of your participation in this research is to improve awareness of self and own feelings as well as other people and their feelings. You will also be providing feedback for the sessions. This knowledge can assist music therapists to help clients in therapeutic interventions.

If you have any questions concerning this research study or your child's participation in the study, please call Dr. Standley at (850)644-4565 or e-mail me at yukaf_research@hotmail.com.

Sincerely,

Yuka Fujioka

* * * * *

I give consent to participate in the above study. I understand that the information obtained during the course of the study will remain confidential, to the extent allowed by law. The data will be kept by the researcher in a locked filing cabinet and only the researcher will have access to it. The data will be destroyed by April 31, 2004.

Name: _____ Age: _____ Major: _____

Gender: Male Female

Race: White, Black, Hispanic, Asian, other

Nationality: _____

Signature: _____ (Date) _____

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Vice President for the Office of Research at (850) 644-8633.

APPENDIX C
Data Collection Forms

Emotion Questionnaire

Mark the intensity of each emotion that you have right now, at this very moment.

Ex.) Fear _____ | _____
Not at all a lot

Fear _____
Not at all a lot

Anger _____
Not at all a lot

Sadness _____
Not at all a lot

Happiness _____
Not at all a lot

If you have more emotion/feelings, write them down and mark the intensity

() _____
Not at all a lot

() _____
Not at all a lot

() _____
Not at all a lot

Beginning Questionnaire

I feel physically healthy.

(not at all) (a great deal)
1 2 3 4 5 6 7

I feel emotionally/psychologically healthy.

(not at all) (a great deal)
1 2 3 4 5 6 7

I feel depressed.

(not at all) (a great deal)
1 2 3 4 5 6 7

I have some problems that affect my school work.

(not at all) (a great deal)
1 2 3 4 5 6 7

I have some problems that affect my personal life or relationship with people.

(not at all) (a great deal)
1 2 3 4 5 6 7

Music Questionnaire

I know this song

(not at all) (very well)
1 2 3 4 5 6 7

I like this song.

(not at all) (a great deal)
1 2 3 4 5 6 7

I can relate to this song.

(not at all) (a great deal)
1 2 3 4 5 6 7

Posttest

1. How personal do you think each group member's talk was?

Group Member 1

(not at all) (very personal)
1 2 3 4 5 6 7

Group Member 2

(not at all) (very personal)
1 2 3 4 5 6 7

Group Member 3

(not at all) (very personal)
1 2 3 4 5 6 7

2. I feel that the group members were supportive.

(not at all) (a great deal)
1 2 3 4 5 6 7

3. I feel that this group leader was supportive.

(not at all) (a great deal)
1 2 3 4 5 6 7

4. I felt connected with the group members.

(not at all) (a great deal)
1 2 3 4 5 6 7

5. I felt connected with this group leader.

(not at all) (a great deal)
1 2 3 4 5 6 7

6. I would like to have another group with these members again.

(not at all) (a great deal)
1 2 3 4 5 6 7

7. I would like to have another group with different members again.

(not at all) (a great deal)
1 2 3 4 5 6 7

APPENDIX D

Lyric Sheet

“Beautiful”
by
Christina Aguilera

Every day is so wonderful
Then suddenly, it's hard to breathe
Now and then, I get insecure
From all the pain, I'm so ashamed

I am beautiful no matter what they say
Words can't bring me down
I am beautiful in every single way
Yes words can't bring me down
So don't you bring me down today

To all your friends you're delirious
So consumed in all your doom
Trying hard to fill the emptiness
The piece is gone
Left the puzzle undone, is that the way it is

You are beautiful no matter what they say
Words can't bring you down
'Cause you are beautiful in every single way
Yes words can't bring you down
So don't you bring me down today

No matter what we do
No matter what we say
We're the song inside the tune
Full of beautiful mistakes

And everywhere we go
The sun will always shine
And tomorrow we might awake on the other side

'Cause we are beautiful no matter what they say
Yes words won't bring you down no
We are beautiful in every single way
Yes, words can't bring us down
So don't you bring me down today

*The song lyrics was also available on-line at:
<http://www.lyricsondemand.com/c/christinaaguileralyrics/beautifullyrics.html>

APPENDIX E

Raw Data

Beginning Questionnaire: Live music

Sub.#	Q1	Q2	Q3	Q4	Q5
7	5	6	2	2	2
8	4	6	1	2	3
9	5	5	2	2	2
10	7	6	1	3	2
11	4	4	3	3	5
12	7	7	1	1	1
22	5	4	5	2	6
23	6	6	2	2	3
24	5	6	1	1	1
28	5	4	3	3	3
29	6	7	1	1	1
30	6	6	3	2	3
34	5	5	3	3	3
35	5	5	1	1	1
36	5	4	4	5	2
46	5	3	4	2	2
47	5	6	4	2	1
48	3	6	2	3	3
61	3	3	2	3	2
62	5	5	2	3	3
63	6	6	3	3	2
73	6	6	3	2	3
74	4	3	4	3	1
75	6	5	1	1	2
82	7	7	1	4	2
83	2	3	6	4	4
84	3	6	2	7	4
85	7	7	1	2	1
86	6	6	4	2	2
87	4	4	2	4	2

Beginning Questionnaire: Recorded music

Sub.#	Q1	Q2	Q3	Q4	Q5
4	5	6	2	2	2
5	2	5	4	4	5
6	6	6	2	4	3
16	4	4	5	4	3
17	7	5	4	4	5
18	5	5	2	4	4
25	5	2	2	5	5
26	4	7	1	2	2
27	6	5	3	6	2
37	6	6	2	5	2
38	5	6	2	2	4
39	6	5	1	3	5
43	5	3	3	2	3
44	6	6	2	2	2
45	5	5	3	5	5
49	5	6	2	5	2
50	6	5	5	5	3
51	4	6	3	3	3
55	7	7	1	2	1
56	6	6	2	2	4
57	6	5	5	5	5
70	7	7	1	1	1
71	5	6	4	3	3
72	7	7	1	6	4
79	6	7	1	4	2
80	5	6	2	2	1
81	5	6	4	5	3
88	6	5	2	1	2
89	5	5	3	2	2
90	7	5	1	6	1

Beginning Questionnaire: No music

Sub.#	Q1	Q2	Q3	Q4	Q5
1	5	7	1	2	2
2	4	5	4	3	3
3	7	6	1	2	1
13	6	7	1	1	2
14	5	7	1	1	2
15	5	5	1	2	3
19	6	6	2	2	1
20	4	5	3	4	2
21	6	7	1	2	2
31	7	6	1	2	3
32	5	6	2	5	4
33	5	5	3	6	4
40	7	6	1	2	4
41	3	4	4	6	4
42	5	3	2	2	2
52	4	5	2	1	3
53	5	3	5	4	6
54	4	5	3	2	1
58	5	5	2	3	3
59	5	6	1	1	2
60	1	3	5	6	6
64	6	7	2	4	3
65	5	6	2	3	2
66	6	6	2	1	1
67	6	3	4	5	5
68	6	6	2	4	4
69	5	4	1	7	1
76	3	5	4	4	3
77	5	5	2	2	4
78	6	6	2	3	4

Pre-Emotion Questionnaire: Live music

Sub.#	Fear	Anger	Sadness	Happiness
7	0.45	0.4	0.5	5.9
8	0	0.1	1.7	5.1
9	1.4	0.1	2.9	3.6
10	0	0	0.9	6
11	1.7	0.1	2	3
12	0.7	0.1	0	6.9
22	3.4	1.1	3.4	5.3
23	0	0	0	4.7
24	0.15	0	0	4.3
28	1.25	1.3	1.4	6.45
29	0	0	0	4.7
30	1.6	2.5	3	4.2
34	1.4	0.35	1	6.4
35	0	0	1.3	5.3
36	0.6	0.6	0.7	6.2
46	0	0	0	5.5
47	0	0	1.3	3.4
48	0	0	0	7
61	1.35	1.25	1	3.5
62	2.1	1.8	0.7	6.1
63	1.9	0.75	2.95	5.5
73	4.7	5.45	4.05	4.1
74	4.7	0.15	0.15	1.5
75	0.9	0.15	0.1	4.95
82	0	0	0	6
83	4.9	2.4	5.4	3
84	0.3	0.45	1.3	1.4
85	0	0	0	7
86	4.3	1.5	3.5	3.5
87	0.6	0.6	0.6	3.8

Pre-Emotion Questionnaire: Recorded music

Sub.#	Fear	Anger	Sadness	Happiness
4	1.1	0.2	1.6	4.9
5	1.3	0.3	1.6	3.1
6	1.15	0	0	2.1
16	0.4	0.35	0.45	3.5
17	0.25	0.1	1.75	3.5
18	0.15	0.1	0.9	1.6
25	3.7	0	4.6	2.7
26	0.75	0.4	0.2	6.3
27	0.15	0	3.7	2.4
37	0.4	0.4	1.4	5.4
38	2.75	1.2	1.55	5.1
39	0.1	0.1	2.1	6.05
43	0.65	4.7	5.4	2.7
44	1.2	0	2.4	4.45
45	0.9	1.2	1	6
49	0	0	0	4.5
50	0.35	0.25	2.3	5.7
51	1.2	0	0	2.7
55	0.05	0	0	5.8
56	0.9	0	0	5
57	0	0	0	3.5
70	0.1	0.1	0.15	3
71	0.1	0.1	2.4	3.5
72	0.2	0.2	0.15	3
79	0.05	0	0	3.5
80	0.5	0.45	0.6	3.9
81	0.15	0	0.05	3.5
88	0.7	0.5	0.6	2.1
89	0.6	1	3.05	3.6
90	0	0	0	4.6

Pre-Emotion Questionnaire: No music

Sub.#	Fear	Anger	Sadness	Happiness
1	1	0	0	5.3
2	1.3	0.5	1.3	3.65
3	0	0	0	3
13	0	0	0	7
14	0.6	0	0	6
15	0.9	2	1.3	3.4
19	0.5	0.1	0.9	5.05
20	0	0	0.1	4.9
21	1.2	0.2	0.15	5.7
31	0	0	0	3.6
32	0	0	1.6	5.8
33	0.6	5.3	2.1	5.5
40	0.35	0.4	0.3	6.1
41	1.9	0.55	1.8	3.4
42	0	1.1	0	4.7
52	0.7	0.5	0.5	4.85
53	3.5	0	0	0
54	1.6	0.3	0.4	2.25
58	1.5	0.9	0.7	4.4
59	0.8	0.45	0.5	4.9
60	1.1	0	2.4	3.3
64	0.65	0.55	0.7	5
65	0.8	0.45	2.1	3.7
66	0.15	0.1	0.2	5.6
67	0	0	0	5.5
68	0	0.05	0.65	5.2
69	0	0	0	3.5
76	1.3	0.05	2.2	5.75
77	1	0.1	0.6	2.3
78	0.9	0.05	1.4	5.4

Post-Emotion Questionnaire: Live music

Sub.#	Fear	Anger	Sadness	Happiness
7	0.65	0.55	1.1	5.3
8	1	0	0.7	4.6
9	0.25	0.25	5.3	2.1
10	0	0	0	6.6
11	0.5	0	0.6	5.9
12	0.1	0.1	0	6.95
22	3.1	0.9	3.5	4.1
23	0	0	0	4.5
24	0.2	0	0.1	4.5
28	0.65	0.7	0.7	6.9
29	0	0	0	6.35
30	1.8	0.9	1.8	4
34	1.4	0.3	0.9	6.9
35	0.05	0.05	1.8	3.5
36	2.3	0.8	2.3	5.2
46	0	0	3.4	3.5
47	0.7	0	2.6	2.6
48	0	0	0.8	7
61	1.15	0.7	0.95	3.5
62	0.7	0.7	0.8	5.85
63	0.75	0.6	1.2	6.7
73	2.7	2.9	2.05	5.2
74	3.7	0.25	0.4	1.4
75	1.25	0.6	0.3	4.2
82	0	0	0	7
83	3.5	2.3	3.75	3.5
84	0.5	1.5	0.4	3.2
85	0	0	0.15	7
86	2.4	0.55	4.9	5.05
87	0.6	0.6	4.9	1.8

Post-Emotion Questionnaire: Recorded music

Sub.#	Fear	Anger	Sadness	Happiness
4	1.05	0	0.65	5.3
5	0.4	0.3	1.45	4.6
6	2.8	0	0	3.7
16	0.6	0.4	0.3	5.25
17	0.15	0	0.55	5.1
18	1.55	0.1	2.8	2.1
25	0.4	0	1.8	5.3
26	0.35	0.3	0.3	6.35
27	0.05	0	1.3	5
37	0.25	0.1	0.6	6.7
38	1.8	0.1	0.15	5.85
39	0.3	0.15	0.9	6.5
43	0.8	4.05	3.15	3.7
44	0.3	0	1.6	5
45	1	0.9	1	5.9
49	0	0	1.3	4.6
50	0.35	0.2	2.2	5
51	0.4	0	0.9	4.9
55	1.7	0.2	0.3	4.9
56	0	0	0	6.3
57	4.6	4.1	4.45	1.55
70	0.1	0.2	0.1	3.05
71	0.05	0.05	3.2	5.45
72	0	0	0.1	0.2
79	0	0	0	3.5
80	0.4	0.5	1.5	4.5
81	0.4	0.55	2	1.55
88	0.45	0.45	5	1.5
89	1	1.35	2.8	2.6
90	0	0	0	5.5

Post-Emotion Questionnaire: No music

Sub.#	Fear	Anger	Sadness	Happiness
1	0.1	0.9	0	5.7
2	0.6	0.85	0.15	4.25
3	0	0	0	3.7
13	0	0	0	7
14	0	0	0.35	6.95
15	0.4	0.5	0.5	5
19	0	0	0	5.55
20	0	0	0	5.7
21	0.6	1	0	3.9
31	0	0	0	5
32	0.1	0	0	6.3
33	4.2	2.7	4.05	4
40	0.7	0.1	0.3	6.2
41	0.9	0	1.4	3.4
42	0	0.2	0	5
52	0.4	0.4	0.4	6
53	1.05	0.05	0	1.1
54	0.9	0.5	0.4	2.45
58	1.1	0.9	1.15	4.45
59	0.3	2.2	2.1	4.2
60	0.25	0	2.3	4.7
64	4.75	1.1	0	6.45
65	0.6	0.6	0.5	3.8
66	0.6	2.3	2.9	4.8
67	0	0	0	6.3
68	0	0.05	0.05	5.5
69	0	0	0	5.75
76	0.05	0	0.75	5.25
77	0.35	0.3	0.5	3.05
78	0	0.05	0.9	5.85

Music Questionnaire: Live music

Sub.#	Q1	Q2	Q3
7	7	7	6
8	6	7	7
9	1	4	4
10	7	5	5
11	5	7	7
12	3	3	2
22	6	6	5
23	7	7	5
24	3	3	5
28	6	6	6
29	7	6	4
30	7	6	5
34	5	6	5
35	5	3	3
36	7	5	6
46	5	7	6
47	5	4	5
48	7	7	6
61	2	5	5
62	1	2	2
63	5	5	6
73	6	1	5
74	5	1	5
75	7	6	6
82	5	7	6
83	5	5	4
84	5	4	4
85	2	7	7
86	3	5	4
87	1	5	3

Music Questionnaire: Recorded music

Sub.#	Q1	Q2	Q3
4	1	3	3
5	6	4	6
6	2	2	1
16	7	7	7
17	7	7	5
18	5	6	6
25	6	4	4
26	4	6	6
27	7	7	7
37	7	6	3
38	5	6	5
39	5	6	5
43	3	5	4
44	7	6	6
45	6	4	5
49	6	5	6
50	1	2	5
51	7	2	2
55	4	7	5
56	7	7	7
57	7	6	6
70	7	2	3
71	7	7	5
72	2	2	4
79	1	3	5
80	5	4	5
81	5	4	3
88	1	2	3
89	4	2	4
90	6	6	5

Music Questionnaire: No music

Sub.#	Q1	Q2	Q3
1	3	2	3
2	6	6	6
3	7	7	7
13	6	6	6
14	6	4	3
15	6	6	7
19	1	5	5
20	6	5	5
21	7	4	4
31	6	7	7
32	5	4	4
33	1	4	6
40	4	5	5
41	7	6	6
42	1	2	2
52	1	3	5
53	5	1	5
54	7	7	5
58	4	3	6
59	2	2	4
60	1	2	3
64	7	5	5
65	6	6	5
66	4	3	3
67	7	7	7
68	6	7	7
69	1	3	2
76	5	3	6
77	5	2	2
78	2	4	5

Posttest: Live music

Sub.#	Q1	Q1-2	Q1-3	Q2	Q3	Q4	Q5	Q6	Q7
7	5	6	6	6	7	5	5	5	5
8	6	6	6	7	7	5	5	7	3
9	3	5	6	7	7	5	6	4	2
10	7	6	7	7	7	7	7	7	4
11	3	7	6	7	7	7	7	7	5
12	4	5	5	7	7	6	6	6	6
22	4	4	5	6	7	3	3	3	1
23	5	3	3	5	6	2	4	2	2
24	4	4	5	6	7	4	6	5	5
28	3	5	5	6	6	6	6	6	6
29	5	5	6	6	7	6	6	4	4
30	5	5	4	6	6	5	5	5	3
34	6	5	3	4	7	4	7	3	6
35	6	3	4	4	7	3	5	4	4
36	6	5	4	6	7	5	5	5	2
46	2	7	2	6	7	2	5	4	7
47	3	4	4	5	7	5	6	5	7
48	4	6	4	4	6	6	6	6	4
61	3	5	3	3	6	2	5	3	5
62	5	6	6	4	6	3	5	5	4
63	3	2	7	6	7	6	7	4	4
73	6	3	2	3	6	4	6	4	4
74	5	3	4	4	5	4	5	4	4
75	6	5	3	5	6	2	5	3	3
82	6	6	6	7	7	7	7	7	1
83	6	5	6	5	7	6	6	6	1
84	6	3	5	7	7	6	6	5	4
85	7	6	7	7	7	7	7	7	3
86	6	4	4	5	6	6	5	5	5
87	6	5	2	5	5	3	3	5	4

Posttest: Recorded music

Sub.#	Q1-1	Q1-2	Q1-3	Q2	Q3	Q4	Q5	Q6	Q7
4	4	5	5	6	5	5	4	6	6
5	6	4	5	6	7	6	7	6	5
6	6	4	6	7	7	5	6	7	6
16	7	3	5	7	7	5	4	5	5
17	6	4	6	7	7	5	7	5	7
18	7	5	7	5	6	4	7	6	1
25	6	4	5	6	7	5	7	4	6
26	7	6	7	7	7	5	5	6	7
27	7	7	7	7	7	7	7	7	7
37	6	6	6	6	7	6	6	4	5
38	3	3	5	5	6	2	4	4	3
39	4	5	6	6	6	3	3	6	7
43	5	6	6	6	7	5	7	5	4
44	6	7	5	5	7	5	7	5	6
45	7	6	6	6	6	5	5	5	5
49	5	4	5	5	7	4	6	4	4
50	6	5	6	7	7	6	7	6	4
51	5	3	6	6	7	4	6	3	3
55	5	4	7	6	6	4	4	5	5
56	3	6	6	6	6	6	6	6	5
57	6	6	7	6	6	5	4	6	6
70	6	7	7	6	7	7	7	7	1
71	7	7	7	7	7	7	6	6	2
72	6	6	7	7	7	7	6	6	1
79	6	5	5	6	6	7	6	6	4
80	6	2	2	6	7	5	6	6	4
81	4	4	3	5	4	6	4	4	4
88	3	5	5	5	7	3	5	4	4
89	5	6	5	5	6	5	5	5	4
90	4	7	4	7	7	5	7	1	1

Posttest: No music

Sub.#	Q1-1	Q1-2	Q1-3	Q2	Q3	Q4	Q5	Q6	Q7
1	5	6	4	5	6	3	4	4	3
2	7	5	6	6	7	4	5	5	3
3	5	4	4	6	6	4	4	3	3
13	7	7	7	7	7	7	7	7	3
14	7	7	6	7	7	7	7	7	7
15	5	5	4	7	7	7	7	7	1
19	6	5	6	7	7	6	6	7	5
20	5	3	4	5	6	4	5	4	5
21	6	3	7	7	7	5	4	6	6
31	5	5	5	6	7	7	7	6	5
32	6	6	6	7	7	7	6	4	1
33	5	6	5	6	6	5	5	4	4
40	4	6	4	5	7	2	4	3	3
41	4	6	3	4	6	2	6	2	5
42	7	7	7	7	6	4	5	4	3
52	5	6	4	6	6	5	5	6	6
53	4	5	5	4	5	3	4	5	4
54	4	5	4	6	6	4	6	6	1
58	4	5	5	5	6	6	6	5	3
59	6	7	6	6	6	6	6	6	5
60	6	7	6	7	7	6	6	7	3
64	5	6	4	6	7	5	7	5	4
65	6	7	5	4	6	5	6	5	3
66	5	6	5	6	7	6	6	5	4
67	7	7	7	7	7	7	7	7	4
68	5	6	2	6	7	5	5	4	5
69	7	7	5	6	7	3	5	4	3
76	7	5	7	6	6	5	5	5	5
77	5	1	4	5	6	4	6	4	4
78	5	3	3	6	7	4	6	5	5

Lyrics lines chosen

Line#	Live	Recorded	No-music
1	7	3	3
2	6	8	4
3	10	7	5
4	3	2	1
5	6	3	8
6	5	6	8
7	2	0	5
8	1	1	2
9	2	6	4
10	2	4	2
11	9	5	4
12	8	6	7
13	0	1	5
14	1	2	3
15	3	4	2
16	1	1	5
17	3	2	1
18	1	1	1
19	0	2	0
20	1	4	3
21	1	4	3
22	6	11	8
23	13	20	19
24	1	5	3
25	7	7	7
26	1	10	5
27	2	0	4
28	0	0	2
29	1	0	3
30	2	0	1
31	2	0	4

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