

Musical Emotions: Perceived Emotion and Felt Emotion in Relation to Musical Structures

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ABSTRACT

Background

In general, musical emotions are an integration of two kinds of emotions: perceived emotion (expressed by musical pieces) and felt emotion (induced in listeners). In studies related to musical emotions, it is important to distinguish perceived emotion from the felt one. However, most such studies have been ambiguous in this respect, and to our knowledge, no study has measured the perceived and felt emotions simultaneously from the perspective of musical structures.

Aims

The aim of our study was to identify musical structures in which perceived emotion differed from felt emotion. Moreover, we investigated whether the musical experiences affected these two kinds of emotions.

Method

Twenty-four participants listened to 21 different musical stimuli that were newly composed. Musical structure was thought to express and elicit various emotions. The selection of musical stimuli was based on some previous researches and books (Table 1). They demonstrated that particular musical structures were associated with certain emotions. Participants rated the intensity of the two kinds of emotions (perceived emotion and felt emotion) using two-dimensional evaluation: arousal (active/passive) and valence (pleasant/unpleasant). The perceived emotion indicated a judgment on how the musical stimulus “should be felt” generally; therefore, we used the following instruction to measure it as an alternative to traditional instruction—how do ordinary people feel when listening to this musical stimulus. On the other hand, we used the same instruction with a traditional one to measure the felt emotion—how did you yourself feel when listening to this musical stimulus. In order to investigate the effect of musical experiences, we separated listeners according to whether they were formally educated in classical music before analysing the data. Participants who had received more than three years of musical education were placed in a high-experience (HE, $n=14$) group, and those with fewer than three years of education or no musical education were placed in a low-experience (LE, $n=10$) group.

Results

Results showed that the perceived emotion did not always coincide with felt emotion. In particular, the rating given by participants with more musical experience for perceived emotion was significantly different from that for felt emotion, in response to low consonant and high note density music. While musically-trained people judged the perceived emotion as unpleasant for low consonant stimuli, they did not experience an equally unpleasant emotion in response to the same stimuli; on the contrary, they experienced a less unpleasant emotion. Additionally, the respondents experienced more pleasant emotions in response to high note density melodies in both minor and major keys, while they judged the perceived emotion as unpleasant and less pleasant, respectively.

Conclusions

Past research has shown that perceived emotion does not always coincide with felt emotion (Gabrielsson, 2002), and we confirmed this finding in the present study. In addition, participants with more musical experience felt less unpleasant or more pleasant than the perceived emotion in response to low consonant and high note density music. The finding may lead to a better understanding of why we sometimes “enjoy” sad music. The respondents also experienced pleasant emotions in response to high note density melodies in both minor and major keys, but they judged the perceived emotion as more unpleasant and less pleasant, respectively. Participants in the HE group may have attended disproportionately to the mode when judging the perceived emotion and to the note density when judging the felt emotion.

Keywords

musical emotions, perceived/felt emotions, musical structures, minor-key/dissonant/high note density music, musical experiences

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Table 1

The 21 Musical Stimuli that Include Various Musical Structures

NOTE. We describe details of our 21 musical stimuli in three columns: musical structures, relevant emotions and author citations. Based on previous studies, we used various melodies, intervals, and chords associated with certain emotions.

	Musical Structures	Relevant Emotions	Author citation
1	A melodic fragment repeated several times	Expectation	Meyer (1956)
2	An ascending melody (major key)	Happiness	Gerardi and Gerken (1995)
3	An ascending melody (minor key)	Sadness	Gerardi and Gerken (1995)
4	A descending melody (major key)	Happiness	Gerardi and Gerken (1995)
5	A descending melody (minor key)	Sadness	Gerardi and Gerken (1995)
6	A dissonance	Unpleasantness	Blood, Zatorre, Bermudez, and Evans (1999)
7	A consonance	Pleasantness	Blood, Zatorre, Bermudez, and Evans (1999)
8	A minor second interval	Melancholy	Maher and Berlyne (1982)
9	A perfect fifth interval	Carefree	Maher and Berlyne (1982)
10	A major third interval	Joy, triumph	Cooke (1959)
11	A major sixth interval	Carefree	Maher and Berlyne (1982)
12	An augmented fourth interval	Hostility, disruption	Cooke (1959)
13	An octave interval	Carefree	Maher and Berlyne (1982)
14	A high note density melody (major key)	Happiness, fear	Schellenberg, Kryscial, and Campbell (2000)
15	A high note density melody (minor key)		
16	A low note density melody (major key)	Sadness	Schellenberg, Kryscial, and Campbell (2000)
17	A low note density melody (minor key)		
18	An intervallic-leap melody	Excitement	Thompson and Robitaille (1992)
19	A stepwise melody	Dullness	Thompson and Robitaille (1992)
20	A melody containing a perfect fourth interval and a minor seventh interval	Pleasantness, agreeability	Costa, Fine, and Ricci Bitti (2004)
21	A melody containing unison and an octave	Potency, power, vigor	Costa, Fine, and Ricci Bitti (2004)