

‘Feeling the Gap’: Does Interoceptive Ability Mediate the Disparity Between Physiological and Subjective Emotional Response to Music Listening?

Sarah Campbell¹, Paul Sowden

School of Psychology, University of Surrey, Guildford, UK

s.e.campbell@surrey.ac.uk

ABSTRACT

Background

Emotion involves an interplay between bodily reactions (objective physiology) and cognitive processing (subjective perception). The circumplex model of emotion (Russell, 1980) characterizes emotions into four quadrants of a 2D emotion space, comprised of a valence dimension and an arousal dimension.

In music-evoked emotion research, a disparity between physiological and subjective responses has been noted. In the present study we investigate the hypothesis that the size of this disparity is a function of an individual’s ability to perceive internal bodily signals (interoceptive ability; Craig, 2002). Specifically, we expect that individuals with high awareness of their internal bodily sensations will display a subjective experience of emotion that is more strongly predicted by their physiological response.

In addition, we hypothesized that the disparity will vary as a function of emotion quadrant. This is because high arousal emotions provide a stronger physiological signal and therefore require less interoceptive awareness. Consequently, the discrepancy will be less dependent on interoception for high arousal than for low arousal emotions where the physiological signal is weaker.

Aims

The current study aimed to ascertain whether disparity between physiological and subjective responses of music-evoked emotion results from individual differences in interoceptive ability. A further aim was to examine the relationship between subjective and objective music-evoked emotional responses in each of the four emotion quadrants of a 2D emotion space.

Method

Seventy-seven participants listened to four self-selected pieces of emotional music, one for each quadrant of the emotion space: one happy, one sad, one tender, and one tense. During music listening, participants continuously reported their subjective emotional response, then completed a static emotion measure. Physiological measures shown to differentiate arousal and valence were recorded, namely facial EMG, EDA and ECG. Participants then completed subjective and objective measures of interoceptive ability.

Results

Moderation analyses showed subjective musical emotion was characterized by differentiated physiological profiles

dependent upon emotion quadrant. The disparity between objective and subjective music-evoked emotional response was moderated by interoceptive ability.

Conclusions

Different types of subjective music-evoked emotion are characterized by different physiological profiles and an individual’s ability to subjectively experience and report their emotional state is moderated by their interoceptive ability. Thus, we argue that peoples’ emotional experience of music is related to the integration between their body awareness and subjective processing. Training interoceptive ability may therefore be a useful approach to maximize the effectiveness of using music as an emotion regulation tool.

Keywords

music; emotion; psychophysiology.

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