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Thompson, William Forde; Russo, Frank A.

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VISUAL INFLUENCES ON THE PERCEPTION OF EMOTION IN MUSIC

William Forde Thompson & Frank A. Russo,

University of Toronto

ABSTRACT

Musicians use facial expressions, expressive gestures, and body movements in their performances. The physical demands of sound production account for much of this aspect of performance, but certain movements and facial expressions are introduced for expressive purposes. We investigated whether facial expressions that accompany music performances influence the perception of emotion in music. Participants watched a video recording of a performer singing a melodic interval. They then judged the emotion conveyed by the music. The interval was either a major third or a minor third. The auditory component was paired with the original facial expression, or it was synchronized with the facial expression of another sung interval. This manipulation resulted in four conditions: major audio with major visual; major audio with minor visual; minor audio with major visual; and minor audio with minor visual. Judgments of emotional meaning were strongly influenced by both audio and visual information, even though participants were instructed to attend only to the music. Overall, judgments of emotional meaning were more strongly influenced by facial expressions than by the music. We discuss the implications of the findings for theories of musical emotion.

BACKGROUND AND AIMS

Music performance is inherently multi-modal: it not only involves the production of sound; it involves a continuously changing and meaningful use of facial expressions, expressive gestures, and body movements. Visual aspects of performance convey powerful emotional messages; they signal important melodic, harmonic, and rhythmic events, and they provide structural cues for segmentation, accent, and points of expectancy fulfilment and violation. Music teachers often work with students on gestures and facial expressions that support expressive intentions, but research has yet to confirm that such aspects of performance actually influence our appreciation of music.

Jane Davidson (2002) summarized analyses of visual aspects of performance and reported that listeners are influenced by such cues. Juslin (2001) noted that emotional facial expressions often accompany music performance. Finally, in his review of research on music performance, Gabrielsson (1999) concluded that there is a "need for investigating the role that visual information may play in music perception" (p. 523). The aim of the present study was to evaluate the degree to which the perception of emotion in music is influenced by facial expressions that accompany music performance.

METHOD

We presented participants with a video recording of a performance of a sung melodic interval. Participants watched the visual component of the video on a computer screen and heard the sound through speakers. The interval was a major third, which should convey a positive emotional message, or a minor third, which should convey a negative emotional message. In addition to the original recordings, facial expressions accompanying the major melodic interval were synchronized with the sounded minor third, and vice versa. The procedure resulted in four conditions: (1) major-third audio with major-third visual; (2) major-third audio with minor-third visual; (3) minor-third audio with major-third visual; (4) minor-third audio and minor-third visual. Synchronization of audio and visual tracks was accomplished using audio-visual editing software. After each presentation, participants made online ratings of the degree to which joy was conveyed in the music on a scale from 1 (sad) to 7 (happy). Participants were instructed to rate only the music itself.

RESULTS

Both audio and visual information influenced judgments of emotional meaning. As expected, there was a main effect of audio condition on ratings, $F(1, 22) = 11.50, p < 0.05$ with higher ratings of joy assigned to the sounded major third than to the sounded minor third. There was also a main effect of visual condition on ratings, $F(1, 22) = 31.36, p < 0.001$, with higher ratings of joy assigned to the facial expression that accompanied the major third than to the facial expression that accompanied the minor third. Indeed, even though participants were explicitly instructed to attend only to the music, they were more strongly influenced by visual information than audio information. The interaction between audio and visual condition was not significant.

CONCLUSIONS

When asked to judge the emotional meaning conveyed by music, listeners were influenced not only by the music but also by the facial expressions used by a performer. The results indicate that visual aspects of performance provide a valuable source of emotional meaning, and are integrated with acoustic cues to emotional meaning. When musical and visual cues suggest conflicting emotional messages, listeners consider both sources of meaning with somewhat greater weight attributed to the visual information. Although most studies of music perception focus on sound, music is a multimodal experience.

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Gabrielsson, A. (1999). The performance of music. In D. Deutsch (Ed.). *The Psychology of Music*. Academic Press. pp. 501-579.

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