THE TEMPORAL PROCESSING OF MUSICAL EMOTION IN A FREE CATEGORISATION TASK

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Background

Music is known to induce strong and varied emotions. Most studies in cognitive psychology have investigated the source of emotion in music (Panksepp, 1995 ; Sloboda, 1991; Schellenberg et al., 2000), the biological foundation of musical emotions (Blood et al., 1999 ; Peretz et al., 1998 ; Peretz and Gagnon, 1999) or the physiological level of musical emotions (Schmidt et al., 2001).

Aims

This study aims both to determine the psychological structure of subtle musical emotion and to investigate the nature of processing involved in emotional judgement.

Method

A free categorisation task, which required the grouping of 27 musical excerpts according to their elicited emotional experience was presented to musicians and non musicians. Two experiments were conducted. Firstly, listeners were asked to perform the task with excerpts of 30s duration. They were asked to repeat the same task two weeks later in order to test the stability of the emotional judgement. Secondly, the time duration of the excerpts was manipulated in order to examine whether reduced hearing (1s duration compared with 30s) would change the way the categorisation was performed. The data obtained were transformed into a 27*27 similarity matrix which was changed into a distance representation by a MDS model in which the excerpts are assumed to possess collectively a small number of psychological attributes.

Results

Our findings reveal a great stability of emotional judgement within and between participants for the condition of 30s duration. This emotional judgement corresponds to a very subtle grouping of musical emotion based on the two usual dynamic and valence dimensions. This ability to group musical emotion is observed both for musicians and non-musicians. Excerpts of decreased duration show that the emotional judgements of non-musicians are more affected by 1s time duration condition than those of musicians. The latter manage to distinguish musical emotion well if the excerpts possess sufficient event density to extract emotional information as valence.

Conclusion

Firstly, the emotional judgement stability within and between subjects demonstrates that musical emotion is a worthwhile object of investigation for researchers interested in the processing of emotion. Secondly, the subtle categorisation achieved by listeners shows that the emotional judgement of musical excerpts goes beyond the simple category know as basic emotion (serenity, sadness, happiness and anger). Finally, the change of categorisation structure produced by excerpts of 1s duration both in musicians and non musicians raises the question of the nature of processing involved in this task. The musical expertise effect and the requirement of a high degree of event density in excerpts of 1s to extract emotional information would support the cognitive view according to which emotional judgement must be mediated by the processing of musical features.