

INFLUENCE OF SPECIFIC SPECTRAL VARIATIONS OF MUSICAL TIMBRE ON EMOTIONS IN LISTENERS

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Background

Musical timbre allows us to recognize different auditory sources. Timbre, as a multidimensional factor, is correlated with the other music parameters and influences defining the elaboration processing of musical material.

Timbre has a central role in contemporary music.

Several studies are meant to investigate how and which timbre characteristics influence music experience. The common timbre variations proposed concern the spectral energy.

Aim

The aim of this study is to investigate musical timbre’s effect on listeners’ emotions

Method

Expressly for this study, CRM (Centro Ricerche Musicali) created three new pieces characterised by inherited and controlled spectral variation of timbre, by varying not only spectral energy (A), but also spectral structure (B) and spectral density (C), while maintaining under an extreme control: Frequency, amplitude, duration and phase patterns.

Subjects, Italian and French, were divided into three groups (electronic, classic and non musicians) and were presented with 3 stimuli and a list of 8 emotions; the experimental task was that of evaluating the intensity of emotions perceived while listening to the stimuli and the intensity of the general activation.

Results

An ANOVA was calculated. We observed:

- electronic musicians differ from the others
- females differ for the variables “sad” and “scared”
- different emotional responses correspond to timbre variations.

Conclusions

The performance is influenced by:

- timbre variation, in particular an inharmonic sound elicits sadness and disgust
- gender
- musical training