

TIMBRE VARIATIONS AND RECOGNITION MEMORY

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ABSTRACT

Several studies have evidenced that timbre variations of musical stimuli influence subjects' performance in memory task (Radvansky, Fleming, Simmons 1995; Radvansky and Potter 2000). Timbre dimension, or source cuing (Radvansky and Potter 2000), is an important element in the perceptual processing and we suppose that listeners' memory performances may be influenced by timbre characteristics (Padova, D'Ausilio, Jeric and Olivetti 2003).

The aim of this study is to investigate how timbre influences the performance of recognition memory.

For this purpose we used musical stimuli organized into 2 categories according to the presence/absence of tonality or salience.

Subjects were asked to identify which of 2 melodies, a target and a distractor, was heard previously. On one half of the trials, the target and the original melodies were in the same timbre and the distractor was in a different timbre. For the other half of the trials, the distractor melody was in the same timbre as the original and the target melody was in a different timbre (Radvansky, Fleming, Simmons 1995). 160 university students (French and Italian) participated in the experiment. We considered also the subjects' musical training according to Wolpert's results (1990), claiming that musicians and nonmusicians differ in their memory for melodies because nonmusicians' memory performance reflects a greater use of the timbre dimension in making recognition decisions.

In the ANOVA analysis several variables were considered: timbre, tonality or salience, genre, nationality and musical training.

Results confirm the general hypothesis of the influence of timbre on recognition memory. We also observed that genre, musical training and the presence/absence of tonality or salience influence subjects' performance.