

SHORT-TERM MEMORY FOR TEMPO OF METRONOMIC SEQUENCES

Marek Franěk

Department of Music Education, University of Hradec Králové, Czech Republic
Czech Environmental Institute, Prague, Czech Republic

Hana Fabiánová

Department of Psychology, Charles University, Prague, Czech Republic

Background

Although music psychology has at its disposal a large body of knowledge about short-term memory for pitch, to date we have no similar information about short-term memory for tempo. Our previous studies have addressed the problem of short-term memory for tempo of metronomic sequences and demonstrated, how memory decays as a function of duration of a retention interval and tempo zone.

Aims

The present research is devoted to (1) the effect of a tempo zone on short-term memory for tempo of metronomic sequences and (2) memory interferences between a base tempo and an additional temporal sequence.

Method

In Experiment 1 participants heard short metronomic sequences with IOI's of 500, 600, and 700 ms (base tempo). Subsequently, a short metronomic sequence in an additional tempo was presented. After the retention interval the participants were asked to recall the base tempo by tapping their fingers. The additional tempo was either equal to the base tempo or faster/slower than

the base tempo (there were four different temporal ratios between the base tempo and the additional tempo). The similar paradigm was employed in Experiment 2, in contrast base tempi with IOI's of 300, 400, 500, 600, and 700 ms were used.

Results

The error of memory recall was the smallest in the intermediate tempo with IOI 600 ms. The additional temporal sequences impaired memory recall, but their effect differed with particular base tempi. In all base tempi it was found that the additional tempo, which was twice as fast as the base tempo, caused deceleration of a memorized tempo, while the tempo, which was twice as slow as the base tempo had the opposite effect. Experiment 2 is still in progress.

Conclusions

The interference between additional and base tempo caused a contrast effect: a fast additional tempo led to deceleration of memorized tempo and vice versa. The effect of tempo zone can be understood in terms of the "interval of indifference" with the most precise performance in the zone of intermediate tempi.