

MEMORY FOR TEMPO: HOW PRECISE DO WE REMEMBER TEMPO OVER TIME?

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Background

In studies published in 1994 and 1996, Levitin and Cook asked students at Stanford University to hum pop melodies that they knew well, trying to imagine the sound of the record. The students, most of whom had little or no musical background, reproduced the melodies in pitch and tempo very close to the pitch and tempo of the original record.

Aims

The aim of the experiments was to investigate whether a similar exactness in tempo and pitch could be found in other situations, and also to examine the stability over a period of time. The effect of different musical styles and of musical training by the participants was also examined.

Method

10 persons listened to 10 melodies from a CD and were asked to remember the tempo and pitch of these melodies over a period of time. The melodies were from different musical genres; classical melodies, pop-melodies and well-known songs. The participants then reproduced these songs once a day for a week. Their efforts were recorded digitally and analysed for tempo and pitch. One month later the same melodies were sung again once a day for a week and again analysed. In a follow up study two years later, five of the same persons again sang the same melodies once a day for a week, but this time they had no recording at the start giving the “target” tempo.

Results

Findings indicate great stability in tempo, but variances from person to person and from melody to melody. Interestingly, it seems like each participant shows great stability in most songs, but considerable instability in tempo in one or a few songs. These songs seem to be different from person to person. The ability to hit the given tempo (given on the CD) varies considerably from melody to melody. The stability in pitch was also good, but often being stable in key other than the original.

Conclusions

It is generally assumed that as few as 1 in 10,000 has perfect pitch. The findings by Levitin and Cook, and basically confirmed in this experiment, seem to indicate that “ordinary people” do have an ability to remember tempo and pitch more precisely than formerly assumed.