THE INFLUENCE OF HARMONIC RELATIONS AND TEMPORAL REGULARITIES ON CHORD PROCESSING

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Background

Music perception relies on processing both the tonal relations between pitches and the temporal regularities of their occurrence. Listeners develop expectancies about "What" event is coming next and "When" it will occur.

Aims

The present study was designed to analyze how the two dimensions (pitch and time) influence chord processing and how they are articulated: in interaction or independently?

Method

In two priming experiments, we systematically manipulated harmonic relations and temporal regularities in eight-chord sequences and participants made speeded accuracy judgments on the target (the last chord). The target was harmonically either related or less related to the prime and was played either "on time", "earlier" or "later" than expected. In addition, chords of the prime context were played either regularly or irregularly. In Experiment 1, sequences were played "staccato" in order to make durations of the prime chords comparable in regular and irregular sequences. In Experiment 2, the sequences were played " legato".

Results

In Experiments 1 and 2, both harmonic relations and temporal regularities influenced chord processing with shorter response times for related targets, regular sequences and for targets played "on time" or " later". Only in Experiment 1 did the two dimensions interact: facilitated processing of related targets was observed for "on time" and " later", but vanished for "earlier". The difference between the two experiments suggests an influence of "musicality of performance" with less artificially sounding sequences enforcing the influence of harmonic relatedness.

Conclusion

In conclusion, our results show that chord processing is influenced by harmonic relations and temporal regularities of the prime context. The outcome differs from previously reported interactions between the two dimensions for melody perception. This difference might be attributed to difference in material (melody vs. harmony) and in experimental task focusing on either global judgment or local processing.

ISBN: 3-931852-66-0
ISSN: 1617-6847