

HARMONIC PRIMING IN AN AMUSIC PATIENT

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Background

Harmonic priming studies have provided evidence that the processing of a target chord is influenced by the harmonic relatedness between target and preceding prime context. In the harmonic priming paradigm, participants make speeded accuracy judgments on a perceptual feature of the target without explicitly judging the manipulated harmonic relations. Facilitated processing of related targets have been observed for musician and nonmusician listeners, an outcome pointing to the implicit nature of tonal harmonic knowledge and the robustness of the involved processes.

Aims

In the present study, I.R. – a brain-damaged patient exhibiting amusia without aphasia – was tested with the harmonic priming paradigm using both a phoneme-monitoring task and a timbre discrimination task.

Method

The task was to decide as quickly and as accurately as possible whether the target was sung on the phoneme /i/ or /u/ (Experiment 1), and whether the target was played by one of two musical timbres (Experiment 2). The target was the last chord of eight-chord sequences, and it was either strongly related to the prime context (i.e., having the function of a tonic chord) or less related (i.e., a subdominant chord).

Results

For both tasks, I.R.'s data replicated harmonic priming effects that have been previously reported for healthy college students: target chord processing was faster in harmonically related than in less related contexts.

Conclusions

The data of this amusic patient mirror data patterns that have been observed with aphasic and prosopagnosic patients: priming paradigms provided evidence for an influence of semantic relations and of unrecognized faces on target event processing. Our present findings in the music domain suggest that implicit knowledge of harmonic structures might remain intact and accessible, even when explicit judgments and overt recognition have been lost.