

MOTION EXPERIENCES IN CLASSICAL AND POPULAR MUSIC

Clemens Wöllner

University of Sheffield, UK

Humboldt-Universität Berlin, Germany

Background

Evidence for the significance of motion experiences in listening to music stems from philosophical, music-theoretical, psychological, and neurobiological research. These different disciplines seem to focus on various aspects of motion in music, which can broadly be categorized as (a) apparent motion based on grouping and Gestalt principles, (b) virtual spatial motion in electronic music, (c) metaphorical motion, and (d) bodily movement reactions.

This paper attempts to investigate the relationship between structural features of the music, bodily responses and perceived metaphorical motion. Interactions with emotional experience, familiarity and preference are also addressed.

Method

Twenty participants (musicians and non-musicians) listened to five popular and five classical pieces of music either primarily based on pitch (melody, harmony) or on timing (rhythm, beat) aspects as judged in a pilot study. Employing a naturalistic paradigm, participants were simply asked to tap their foot to the music if and when they felt like doing so. The mean number of taps in relation to the total number of beats (tapping rate) and the starting time for the tapping were analysed. Physiological measures (GSR, heart rate) and a number of questionnaire items were also recorded.

Results

In general, musical examples with salient timing features as compared to pitch features caused a significantly higher desire to tap (questionnaire) for the classical examples and stronger bodily movements (tapping rate) for the popular examples. Furthermore, whereas participants tapped at a higher tapping rate with the popular musical examples ($p < 0.001$), the classical examples were more frequently associated with aspects of metaphorical motion such as gestural experiences. While the variables 'familiarity' and 'preference' showed significant correlations with the tapping rate across all musical examples, no such relationships were found with the mean tempo.

Conclusions

The results suggest that specific factors of the music may elicit bodily movement reactions and lead to differences in the perception of metaphorical motion aspects. Tapping to music in a naturalistic setting is different from metre finding tasks and offers insights into a common but complex way of bodily responses to music.