

## The role of attention in the perception of music structure

### Abstract

Existing models of the perception of musical structure mostly do not account for the fact that listeners' hearings are known to vary substantially: the same passage can be interpreted differently by different listeners, or by the same listener at different times. Attention—the deliberate or unconscious focus a listener may place on a particular aspect of the music, such as its melody or rhythm—seems to play a role in the perception of structure, but whether it is an important *cause* of grouping preferences or the product of them is unclear. We study the influence that paying attention to musical features (including harmony, melody, rhythm and timbre) has on grouping decisions. The experiments use composed musical stimuli exhibiting changes in particular features by design; some stimuli exhibit a single change, while others exhibit changes in different features at different times, leading to ambiguous segment boundaries and groupings.

We first tested whether our subjects were able to correctly associate changes with musical features, to establish that their understanding of the stimuli was multidimensional and not purely holistic. Second, we tested whether an explicit instruction to focus on a feature increased the salience of boundaries marked by a change in that feature. Finally, we tested whether focusing on a feature would make groupings according to that feature preferable. To do so, we asked subjects to perform a distractor pattern-detection task that directed their attention to a particular feature. They then heard ambiguous stimuli, which had structure *AAB* and *ABB* with respect to two different features, and indicated their preferred grouping.

The results showed that listeners were skilled at identifying changes, that correctly-directed attention boosted the salience of changes, and that focusing on a feature could indeed *cause* a listener to prefer one grouping over another. Whereas one's level of musical training greatly impacted how one responded on the first two experiments, its impact was not significant in the third task, suggesting that attention is a general mechanism in guiding grouping preferences.

**Keywords:** *music perception*    *musical structure*    *boundary salience*