

## CUES FOR PERCEIVING A KEY OF A MELODY

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### Background

Listeners perceive a key of a stimulus melody whether or not they can consciously name it. Some studies (e.g., Krumhansl, 1990) have shown that key perception is affected by pitch set. Our previous studies (Matsunaga & Abe, 2000, 2001) have shown that key perception is constrained by pitch set and may be determined by characteristics of its temporal sequence.

### Aim

We explored specifics of the temporal sequence that would serve as cues in determining a specific key in a melody.

### Method

Four AP musicians listened to 450 pitch sequences and identified the most plausible key. These 450 sequences derived from the same pitch set [C, D, E, G, A, B] but differing in its temporal sequence. This pitch set could be interpreted as diatonic tones of either of the following keys: C-major, G-major, e-minor, and a-minor. The duration of each pitch was 0.6 s, for a total of 3.6 s per sequence.

### Results

All pitch sequences were predominantly identified as C-Major, G-major, e-minor, and a-minor. Particular pitch sequences were judged as C-Major (or G-Major) consistently among participants. We found possible sequential cues in AP listeners' perception of C-Major (or G-Major). Since a point of similarity exists between possible cues of C-Major and those of G-Major, key perception appears to be determined by the combination of earlier, rather than all, input pitches in the melody.

### Conclusion / Implication

A generalization of our study may reveal a pattern of sequential cues for other pitch sets.