

CUES FOR PERCEIVING A KEY OF A MELODY

Rie Matsunaga

Jun-ichi Abe

Department of Psychology, Hokkaido University, Japan

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.