DOES MUSICAL TRAINING FACILITATE LEXICAL TONE PERCEPTION OF TONE LANGUAGE SPEAKERS?

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ABSTRACT

This study investigates whether advanced musical training can facilitate lexical tone perception of native speakers of a tone language who are merging tones. Results show that while musical training can enhance lexical tone perception of non-native speakers, it has little influence on the merging native speakers, which indicates that different perceptual mechanisms may be involved in linguistic and musical tone perception.

1. INTRODUCTION

There are six lexical tones (T) in Cantonese, and the tone space is very crowded. Both pitch height and contour are important. Some tone pairs, T2/T5 (rising), T3/T6 (level), T4/T6 (falling vs level) are merging in recent years. Previous studies showed that musical training facilitates lexical tone perception of non-tone language speakers. However, it is unclear if musical training also influences tone perception of native speakers of tone-languages who are merging tones. These speakers have poorer general tone perception than their non-merging counterparts. This begs the question whether musical training can facilitate their perception of the merging tone pairs.

2. METHOD

6 merging Cantonese speakers with advanced musical training and 4 merging speakers without any formal musical training were recruited by screening 129 potential subjects. Moreover, 4 non-tone language speakers (2 French 2 English) with advanced musical training and 7 without formal musical training (4 English 3 French) were used for comparison. AX discrimination tasks of the merging Cantonese tone pairs and pure tone pairs synthesized from the merging tone pairs were conducted. Both accuracy and reaction time data were collected.

3. RESULTS

Both accuracy and reaction time data show that advanced musical training does facilitate the perception of both lexical tones and pure tones by non-tone languages speakers. However, there is no consistent difference in the accuracy data of Cantonese tone pairs by the merging Cantonese speakers. The reaction time data show that the merging speakers with advanced musical training generally responded faster than those without musical training, but their difference is smaller than the corresponding difference between the non-native speakers.

4. DISCUSSION

The results show that musical training can facilitate lexical tone perception only if musical training starts before the linguistic use of lexical tones, as in the case of non-native speakers. The results of the merging Cantonese speakers show that musical training has little influence on lexical tone perception of tone language speakers. The findings imply that different perceptual mechanisms may be involved in linguistic and musical tone perception. The linguistic use of tones is more fundamental and more robust than musical training. If the linguistic domain is not activated, then musical training can enhance lexical tone perception, but not vice versa.