

## **A developmental perspective on the perception and production of Cantonese tones**

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For native speakers of tonal languages, language acquisition involves the development of contrastive, language-specific lexical tone categories. Although amplitude, duration and voice quality characteristics have been found to be associated with lexical tones, fundamental frequency (F0) patterns are the primary cues to lexical tone recognition for Chinese languages such as Cantonese. The presentation will review the findings about Cantonese tone perception and production from infancy to adulthood. The talk will focus on evidence obtained from experimental studies on tone perception in which participants are asked to identify a target monosyllabic word spoken by an adult male speaker within a carrier phrase. These words represented eight pairs of minimal tone contrasts. Following the auditory presentation of a word, two pictures representing the relevant minimal tone contrast were presented. Listeners were asked to select the picture corresponding to the word they had heard. Participants were children (between 2 and 10 years of age) and adult controls. Participants who were 2 to 5 year old, as well as adult participants, were also asked to produce monosyllabic words for each of the sixteen pictures that were used in the perception experiments. The developmental pattern of tone production was measured through both perceptual and acoustic analyses. For perceptual analysis, a native speaker with expertise in phonetic transcription transcribed the lexical tones of the children's utterances. Because of the observed large discrepancies between judgments provided by the same judge at different times, the analysis of tone production data will focus on the results of the F0 patterns of the utterance obtained from the acoustic analysis. For the development of tone perception, the performance (% correct identification) of each child for each minimal tone contrast was calculated.

Conclusions about the age at which Cantonese lexical tone are acquired, and about the impact of methodological choice on the reported age of acquisition will be discussed on the basis of evidence obtained from these tasks as well as other findings from previous studies. The talk will also discuss how a review of the developmental data can provide insights about the relationship between the perception and the production of phonological contrasts.