

Lexical-Tone Perception and Word Learning Abilities in Two-Year-Old Late-Talking Children

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The late-talking (LT) 2-year-old toddlers perform delayed vocabulary skills compared to their peers. Speech perception skills are essential to vocabulary development. For example, infants' speech perception abilities facilitate word learning, and speech perception in early infancy is predictive of later vocabulary development at 2-3 years of age. Lexical tones manifest the lexical meanings of syllables in Mandarin and are essential for typically-developing infants to learn words. Typically-developing 2-3 year-old children produce four lexical tones, but it is still an open issue regarding to the effects of lexical tone perception on word learning in Mandarin LT toddler. The goal of this study was to investigate whether the lexical-tone perception ability was associated with the word-learning performance in Mandarin-speaking LT toddlers. The participants were 2-year-old LT children ($n = 34$) and typically-developing children (TD, $n = 34$), matched with gender, chronological age, major language at home, and birth order. The lexical-tone perception ability was assessed with the forced-choice picture-pointing task, in which the child had to discriminate the lexical-tone minimal word pairs and map words with corresponding pictures. The word-learning efficiency was assessed with the referent-selection and the word retention tasks. Results showed that the LT group performed poorer than the TD group in lexical-tone perception and word-learning efficiency. For the LT group, results of the correlation analyses showed that lexical-tone perception was correlated with word-learning efficiency. For the TD group, lexical-tone perception was correlated with vocabulary size and syntactic complexity. For the LT group, the stepwise regression analyses showed that the word-learning efficiency could only be accounted for by lexical-tone perception. For the TD group, the results showed that the word-learning efficiency could be accounted for by vocabulary size and word using. The results demonstrate the poor lexical-tone perception ability in Taiwanese LT children. Moreover, the LT group's lexical-tone perception is associated with the word-learning efficiency, suggesting that the fragile lexical-tone representation could adversely affect the word-learning efficiency in LT.

Keywords: *late talker, lexical-tone perception, word learning*