A PHONETIC STUDY OF THE VOWEL SYSTEM IN SUZhou CHINESE

LING FENG

DOCTOR OF PHILOSOPHY
CITY UNIVERSITY OF HONG KONG
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Ling Feng
凌鋒

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Abstract

The focus of this dissertation is the articulatory characteristics, acoustic characteristics and articulatory-acoustic relationship of the vowels in Suzhou Chinese. The investigation includes auditory and aerodynamic recording. In the articulatory section, the palatogram, linguagram and articulograph (EMA) are used.

All monophthongs and diphthongs in Suzhou Chinese are investigated to show their formant patterns, temporal structures, lingual gestures and nasality if necessary. New vowel types so-called “fricative vowels”, which have not been well studied by phoneticians, are found in Suzhou Chinese. The acoustic data show that fricative vowels have lower F₂ than other plain vowel counterparts. Compared with the articulatory data, it is found that the lower F₂ cannot be explained by the retraction of constriction as a general relationship between vowel backness and F₂ height. Instead, advancing of constriction results in the lowering of F₂. Results prove to be compatible with the theory of vowel production, and can also clarify the formant pattern of apical vowels, which have not been well examined in previous study.

To provide an objective criterion for distinguishing monophthongs and diphthongs, a new method is developed in this dissertation to quantify vowel distance. Using this method, the two types of vowels are successfully distinguished. It is also found that two vowels transcribed as [iː] and [iː] in previous studies are monophthongs.
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