Fricative vowels as an intermediate stage of vowel apicalization

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Diphthongization and apicalization are two commonly detected phonetic and/or phonological processes for the development of high vowels, with the process of apicalization being of particular importance to the phonology of Chinese dialects. This paper describes acoustics and articulation of fricative vowels in the Suzhou dialect of Wu Chinese. Acquiring frication initiates the sound change. The production of fricative vowels in Suzhou is characterized by visible turbulent frication from the spectrograms, and a significant lower Harmonics-to-Noise Ratio vis-à-vis the plain counterparts. The acoustic study suggests that spectral characteristics of fricative vowels play a more important role in defining the vowel contrasts. The fricative high front vowels have comparatively greater F1 and smaller F2 and F3 values than their plain counterparts, and in the acoustic F1/F2 plane, the fricative vowels are located in an intermediate position between their plain and apical counterparts. The articulatory study revealed that not only tongue dorsum but also tongue blade are involved in the production of fricative high front vowels in Suzhou. Phonologically, plain high front vowels, fricative high front vowels, and apical vowels distinguish in active place of articulation, namely being anterodorsal, laminal, and apical respectively; and frication becomes a concomitant and redundant feature in the production of fricative or apical vowels. It is concluded that the fine-grained phonetic details suggest that the fricative high front vowels in Suzhou is at an intermediate stage of vowel apicalization in terms of both acoustics and articulation.

Keywords: fricative vowels, apical vowels, apicalization, Suzhou Wu

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