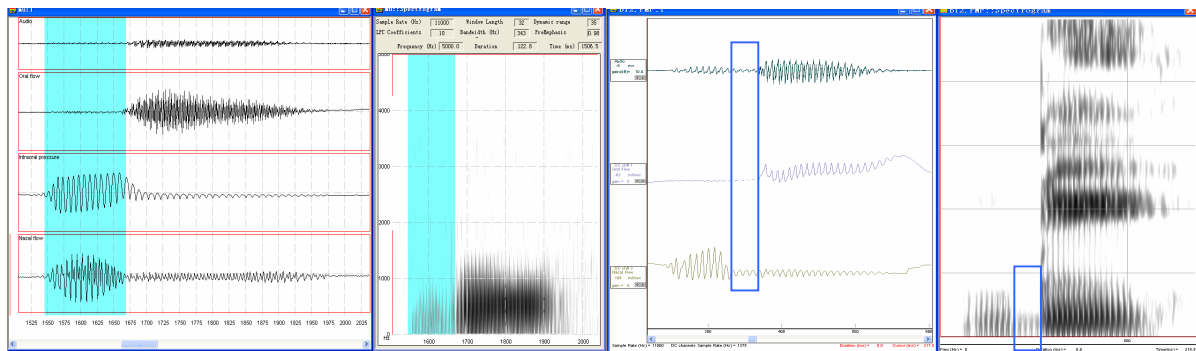


Post-oralization of nasal initials in Chinese dialects

Post-oralization of nasal initial consonants is widely detected in Chinese dialects (Chan, 1987; Hu, 2007). The plain nasal initials in Middle Chinese may remain intact as in Wu Chinese, have conditionally changed into plain fricatives or approximants as in Mandarin Chinese, or become post-oralized. Triggered by the orality on the following vowel, the post-oralization of nasal initials in Chinese dialects was and is proceeding in a gradient, rather than a categorical way. Cantonese dialects around the Zhongshan area and Shanxi Jin dialects are at an early stage of post-oralization. That is, the nasal initials acquire orality only at release. In other words, they are orally released (poststopped or post-fricated/affricated) nasals. The southern Min dialects are at the late stage, namely the orality has spread from the release to the closure portion of the nasal consonants. In other words, the post-oralized nasals have become canonical prenasalized consonants. See Figure 1 for example: an orally released nasal (1a) vs. a prenasalized consonant (1b).



a. [m^bu] 'model' in Taishan Cantonese.

b. [m^bi] 'rice' in Shantou southern Min

Figure 1: The audio, oral flow, intraoral pressure (available in 1a only) and nasal flow (left), and the wideband spectrogram (right) for the production of an orally released nasal (1a) and a prenasalized consonant (1b).

This paper examines post-oralization in Shan Jin, southern Min and Cantonese around the Zhongshan area. For Shanxi Jin, 51 native speakers from 39 counties were recorded acoustically and among them, 28 speakers from 19 counties were additionally recorded aerodynamically using PCQuirer. For Cantonese, six speakers from the Zhongshan area were recorded aerodynamically. For southern Min, six native male speakers from the Chao-Shan area were recorded aerodynamically. Speech material was designed for each dialect group. Natural monosyllabic words in isolation were used as test words, which contain all the target nasal consonants, regardless of plain or post-oralized, and the corresponding stops or affricates/fricatives for the comparison's sake. The speech material was balanced concerning the vowel category and syllable structure. Three repetitions were recorded for each test word.

Both aerodynamic and acoustic data show that there are great amount of variations in post-oralization. In southern Min, prenasalized consonants often lose their nasality and therefore become plain oral consonants; whereas in Shanxi Jin and Cantonese, orally released nasals are sometimes realized as plain nasals. That is, the post-oralization is a phonetic/phonological process with a probabilistic nature. The results suggest that the velar nasal is easier to maintain post-oralization than its labial and coronal counterparts. And vowel type is the most frequently observed condition that has an effect on post-oralization.