

Path of Vowel Raising in Chengdu Dialect of Mandarin

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He and Rao (2013) reported a raising phenomenon of /a/ in /Xan/ (X is either a consonant or a vowel) in Chengdu dialect of Mandarin, i.e. /a/ is realized as [ɛ] for young speakers but [æ] for older speakers, but they offered no acoustic analysis. Also, the effects of different X in /Xan/ are not fully explored.

We thus designed an acoustic study that examined the realization of /Xan/ in speakers of different age (old vs. young) and gender (male vs. female) groups, where X represents three conditions: 1) *unaspirated consonants* C ([p], [t], [k]), 2) *aspirated consonants* C^h ([p^h], [t^h], [k^h]), and 3) *high vowels* V ([i], [y], [u]). 17 native speakers were asked to read /Xan/ characters and the F1 values are extracted for comparison.

Our results confirmed the raising effect in He and Rao (2013), i.e., young speakers realize /a/ as [ɛ] in /an/, whereas older speakers in the most part realize it as [æ] (see vowel chart below). Also, female speakers raise more than male speakers within the same age group. There are no significant differences among the three environments (/Can/, /C^han/, and /Van/), but interestingly, within the /Van/ condition, older speakers do raise /a/ in /ian/ and /yan/ (**ian, yan** is closer to **Xan**). We interpret this as /a/ first assimilates to its preceding front high vowels /i/ and /y/ for older speakers, which then becomes phonologized in younger speakers in all conditions, including /C^han/ and /Can/. This shows a possible trajectory of the ongoing sound change in Chengdu dialect.

