

The Effect of Education on the Acquisition of a Lexical Split: The /ɿ/-/l/ Contrast in Xiamen Mandarin

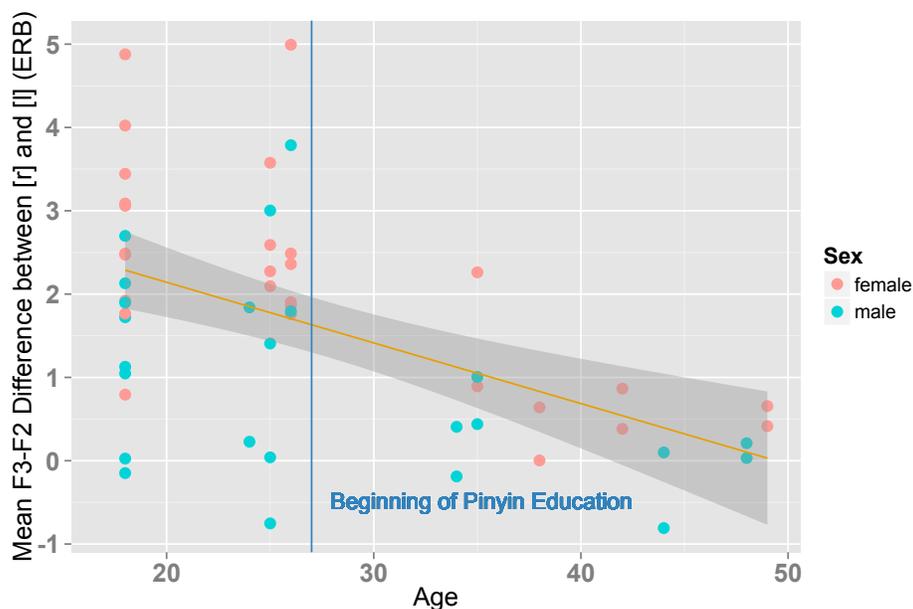
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The acquisition of lexical splits in a second dialect can be very difficult (Payne 1976), since it often requires memorizing the phonemic representation for all relevant lexical items, although educational forces can enhance this process to some extent (Labov 1994). In addition, speakers are often unaware of splits. This study presents a counterexample in which a split is not only acquired to a great extent, but also a “change from above” (Labov 1994).

In Standard Mandarin, there is a phonemic contrast between retroflex approximant /ɿ/ and lateral approximant /l/. Xiamen dialect, the non-Mandarin local dialect, is different from Mandarin in that it 1) only has phoneme /l/, which is 2) realized as [l] or [ʌd] (Hu 2005). As a result, in Xiamen Mandarin, there are three variants for phoneme /ɿ/, the standard variant [ɿ], and two regional variants [l] and [ʌd].

Unlike the logographic characters, *Pinyin*, the alphabetic system for Mandarin, clearly represents the /ɿ/-/l/ contrast. *Pinyin* was not compulsory in elementary education until mid-90s (Liu 2005), much later than the most current description of Xiamen Mandarin (Chen 1987). This study provides an update on this variety focusing on the effect of *Pinyin* education.

Read speech was elicited from 26 Xiamen Mandarin speakers (F=14, M=12; 10s=9, 20s=9, 30s&40s = 8) using wordlist written in characters. Thirty disyllabic words containing /ɿ/ and /l/ respectively were included. Acoustic analysis included only approximants, which constituted more than 70% of all tokens. A mixed-effects model was built, with the mean differences between F3-F2 values for /ɿ/ and /l/ per speaker per following vowel (“mean F3-F2 difference”) as the dependent variable, and age, sex and following vowel as independent variables. Age and sex were both significant predictors: older speakers had lower mean F3-F2 difference, and thus less /ɿ/-/l/ contrast than younger speakers, and males had less contrast than females.



Further examination of the age effect showed that while for speakers above 30, mean F3-F2 difference was often smaller than 1 ERB unit, speakers below 30 generally had a difference greater than 2. Auditory analysis on the /ɿ/ realization among speakers above 30 showed that, 1) six speakers produced more than 10 tokens as [l] and 2) 16.8% of /ɿ/ tokens were realized as a [ʰd]/[d], the variant for /l/ in Xiamen dialect, indicating a /ɿ/-/l/ merger.

Overall, the age effect suggests that while a merger still exists for speakers above 30, a rapid sound change has happened such that speakers younger than 30 have much clearer /ɿ/-/l/ contrast. Metalinguistic commentaries also showed that most speakers were aware of this standardization of Xiamen Mandarin. This age effect may be attributed to the effect of *Pinyin* education. For those below 30, they not only learned character pronunciation via *Pinyin*, but also tend to use it for inputting characters into a computer, reinforcing the lexical conditions for /ɿ/ and /l/.

This study shows that systematic pronunciation education can strongly affect community-wide sound change. It also presents evidence that split changes can happen above the level of social awareness.

References

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