

Lazy consonant perception in Cantonese heritage and homeland speakers

Rachel Soo

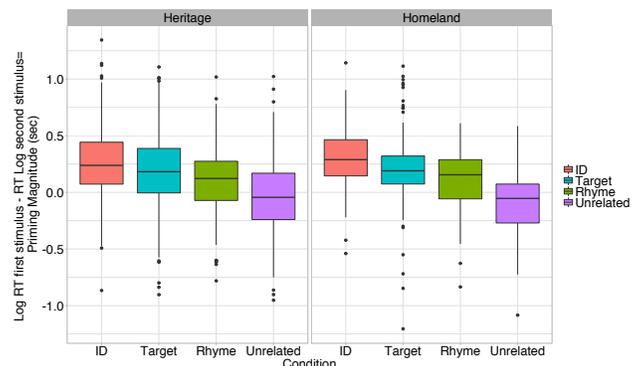
University of British Columbia

While there has been much work on sound change in production [1-3], there has been less work on sound change in perception [4-7]. However, understanding the perception of a sound change is important for bilingual populations, such as heritage speakers (HRs), whose language background may conspire to protect them from perceiving a sound change in their heritage language [8]. To investigate the intersection of sound change in perception and language background, the current study compared Cantonese HRs and homeland speakers' (HMs) perception of the Cantonese "lazy consonants", initial /n/→/l/ and /ŋ/→∅ [9,10]. If language dominance plays a stronger role in influencing perception than early language acquisition, HRs should still perceive a difference between the lazy consonants, as the lazy consonants are separate phonemes in the dominant language (English). On the other hand, if early language acquisition takes precedence, HRs should not perceive a difference between the lazy consonants, as the merged consonants would have been present in the input they received as children. Using a lexical decision task (LDT) focussing on priming between adjacent stimuli [11], the current study observes that neither HRs nor HMs perceive a difference between the lazy consonants, suggesting that early language acquisition may play a more important role than language dominance in perception of a sound change .

Although the task was a LDT, the dependent variable was the priming magnitude (PM) between adjacent members of a pair [15,16], which was then compared across the four stimulus pair types in the LDT. (i) Target pairs were minimal pairs differing in the initial lazy consonants (e.g., /nej5/-/lej5/ *you-you*) and (ii) identity (ID) pairs were identical pair members (e.g., /nej5/-/nej5/ *you-you*). Since the PM is the difference in response time between the first and second members of a pair, a positive PM suggests that priming has occurred as the second member of the pair was recognized faster than the first. Therefore, comparable PMs for target and ID pairs would suggest that the two members of a target pair are being perceived as if they were a strict ID pair; that is, there is evidence for the lazy consonants having merged in perception. To ensure that any priming observed in the target pairs was not simply due to identical rhymes, but rather due to the sound change, additional (iii) rhyme pairs (minimal pairs whose onsets were not lazy consonants, e.g., /min6/-/din6/ *noodles-electric*) were included. To balance out the set, (iv) unrelated pairs that did not share an onset or rhyme were created (e.g., /ts^ha4/-/p^hun4/ *tea-basin*). Nonword stimuli were also created in each condition to make the experiment a LDT.

Preliminary results from 30 HRs and 15 HMs recruited from Vancouver and Toronto are shown in the plot below. The descriptive results show decreasing PMs from ID (pink), target (blue), rhyme (green) and unrelated pairs (purple), in that order. In addition, the PM for target pairs is close to that for ID pairs for both groups, which may be evidence for the sound change in perception. A closer look at the rhyme pairs for both groups however, reveals similar PMs between the target and rhyme pairs. As a result, the small difference in PMs between the target and ID pairs may not be reflective of the consonants having merged in perception; instead any priming in the target pairs may simply be due to shared rhymes between pair members.

This work has implications for how we understand the role of linguistic experience in shaping the phonological lexicon. In particular, the priming observed for the HRs may have been due to the fact that their L1 phonology has "fossilized" [8], allowing them to merge the consonants in perception even though these sounds are separate phonemes in their dominant language (English). As such, the current study finds that early acquisition plays a more important role than language dominance in shaping Cantonese sound change in perception.



Lazy consonant perception in Cantonese heritage and homeland speakers

Rachel Soo

University of British Columbia

References

- [1] Baranowski, M., & Turton, D. (2015). Manchester English. *Researching Northern Englishes*, 293-316.
- [2] Labov, W. (1986). The social stratification of (r) in New York City department stores. In *Dialect and language variation*, 304-329.
- [3] Roberts, J., & Labov, W. (1995). Learning to talk Philadelphian: Acquisition of short a by preschool children. *Language Variation and Change*, 7(1), 101-112.
- [4] Ruch, H., & Harrington, J. (2014). Synchronic and diachronic factors in the change from pre-aspiration to post-aspiration in Andalusian Spanish. *Journal of Phonetics*, 45, 12-25.
- [5] Stevens, M., & Harrington, J. (2016). The phonetic origins of /s/-retraction: Acoustic and perceptual evidence from Australian English. *Journal of Phonetics*, 58, 118-134.
- [6] Sumner, M., & Samuel, A. G. (2005). Perception and representation of regular variation: The case of final /t/. *Journal of memory and language*, 52(3), 322-338.
- [7] Sumner, M., & Samuel, A. G. (2009). The effect of experience on the perception and representation of dialect variants. *Journal of Memory and Language*, 60(4), 487-501.
- [8] Polinsky, M. (2008). Relative clauses in heritage Russian: Fossilization or divergent grammar. *Formal Approaches to Slavic Linguistics #17: The Yale Meeting 2008*, 333-358
- [9] Matthews, S., & Yip, V. (2013). *Cantonese: A comprehensive grammar*. Routledge.
- [10] To, C. K. S., Mcleod, S., & Cheung, P. S. P. (2015). Phonetic variations and sound changes in Hong Kong Cantonese: Diachronic review, synchronic study and implications for speech sound assessment. *Clinical Linguistics & Phonetics*, 29(5), 333-353.
- [11] Zwitserlood, P. (1996). Form Priming. *Language and Cognitive Processes*, 11(6), 589-596.
- [12] Scarborough, D. L., Cortese, C., & Scarborough, H. S. (1977). Frequency and repetition effects in lexical memory. *Journal of Experimental Psychology: Human perception and performance*, 3(1), 1.
- [13] Werker, J. F., & Tees, R. C. (1984). Phonemic and phonetic factors in adult cross-language speech perception. *The Journal of the Acoustical Society of America*, 75(6), 1866-1878.
- [14] Werker, J. F., & Logan, J. S. (1985). Cross-language evidence for three factors in speech perception. *Perception & Psychophysics*, 37(1), 35-44.
- [15] Pallier, C., Colomé, A. & Sebastián-Gallés, N. (2001). The influence of native-language phonology on lexical access: Exemplar-based versus abstract lexical entries. *Psychological Science*, 12(6): 445-449.
- [16] Scarborough, D. L., Gerard, L., & Cortese, C. (1979). Accessing lexical memory: The transfer of word repetition effects across task and modality. *Memory & Cognition*, 7(1), 3-12.
- [17] Birdsong, D., Gertken, L. & Amengual, M. (2012). *Bilingual Language Profile: an Easy-to-Use Instrument to Assess Bilingualism*. COERLL, University of Texas at Austin.