

How does ongoing L1 phonological merger shape L2 liquid perception: Insights from Cantonese listeners with high and low English proficiency

Zhiqiang Zhu, Chunyu Ge, and Peggy Mok

The Chinese University of Hong Kong

This study investigates the role of ongoing L1 phonological merger in the perception of L2 English liquids. The participants consisted of 25 native Cantonese listeners with high English proficiency (Hong Kong undergraduate students whose courses are conducted in English) and 19 listeners with low English proficiency (local high school students, where Cantonese is the primary medium of instruction). The rationale for selecting Cantonese listeners is twofold: (1) /n/-/l/ are mostly merged for younger Cantonese speakers, substituting /n/ by /l/ [1,2]. Also, acquisition studies indicated that native Cantonese speakers produce the English /n/-/l/ interchangeably, e.g., [l]ine for 'nine' and [n]ove for 'love' [3]. (2) Cantonese contains only one liquid phoneme /l/ [4]. Native Cantonese speakers exhibit a range of errors in English liquid production, e.g., substitution ([l]ide for 'ride') and vocalization (wi[u] for 'will') [5]. Consequently, Cantonese listeners face two distinct confusions with English liquids: /n/-/l/ confusion due to the ongoing Cantonese phonological merger, and /r/-/l/ confusion linked to the intrinsic phonotactic constraints.

Participants were tested with pseudo-address phrases, which consisted of three parts: "number" + "target stimuli" + "place name" (e.g., "12 Kylie View"). Upon auditory presentation of a phrase, the initial and last words were visually displayed on the screen, while participants identified the medial target word from a quartet of alternatives, which represents English /l/, /r/, /n/, and /w/ respectively, e.g., "Kylie", "Kyrie", "Kynie", "Kywie". The target stimuli encompassed a total of 220 trials featuring the four English phonemes, distributed as 67 /l/, 63 /r/, 53 /n/, and 37 /w/ trials. In addition, the target stimuli were structured in a way to investigate the perception in syllable-initial, -medial, and -final positions, e.g., "lyke", "Kylie" and "Kyle".

The results highlight that, for native Cantonese listeners, the phonological merger-related confusion (/n/-/l/ confusion) seems more readily resolved than the consolidated L1 phonotactics-related confusion (/r/-/l/ confusion) through English proficiency enhancement. Higher English proficiency substantially decreases misidentification rates for the /n/-/l/ discrimination. For illustration, the low English proficiency group misperceived English /n/ to /l/ in the initial, medial, and final positions at rates of 33.3%, 52.3%, and 13.6%, respectively (Figure 1), while the corresponding misidentification rates being only 13.5%, 18%, and 0.04% for the high English proficiency group (Figure 2). However, for the English /r/-/l/ contrast, while Cantonese listeners with high English proficiency still outperformed those with low proficiency, the margin of advantage is less distinct. Particularly in the final position, the high proficiency group still confused 17.2% of English /l/ for /r/ and 15.8% of English /r/ for /l/. Thus, while the ongoing L1 phonological merger may affect the perception of L2 sounds, its impact is relatively mitigable through L2 proficiency, as opposed to the intrinsic L1 phonotactic constraints.

A preliminary hypothesis is that native speakers are also exposed to Cantonese instances where /n/ and /l/ are distinguished. Moreover, there is a certain level of explicit awareness about the /n/-/l/ merger because of earlier campaigns on proper pronunciation. The exposure and awareness allow for further activation of the /n/-/l/ distinction as their English proficiency increases. In contrast, the /r/-/l/ contrast has no parallel in Cantonese. Also, Hong Kong English tends to vocalize both English /r/ and /l/ in the final position, rendering the /r/-/l/ distinction more challenging for Cantonese speakers even with high English proficiency. In addition, the age difference between the high and low English proficiency groups may serve as a confounding factor, potentially affecting the findings related to L2 liquid perception.

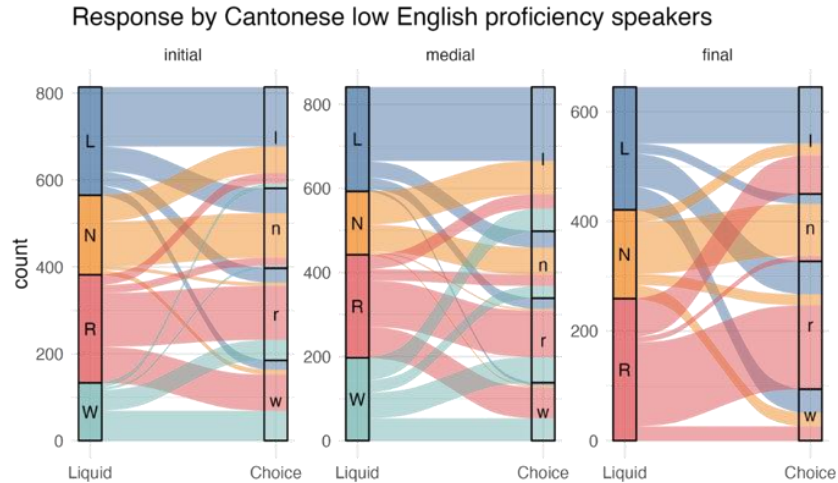


Figure 1 Response by native Cantonese listeners with low English proficiency

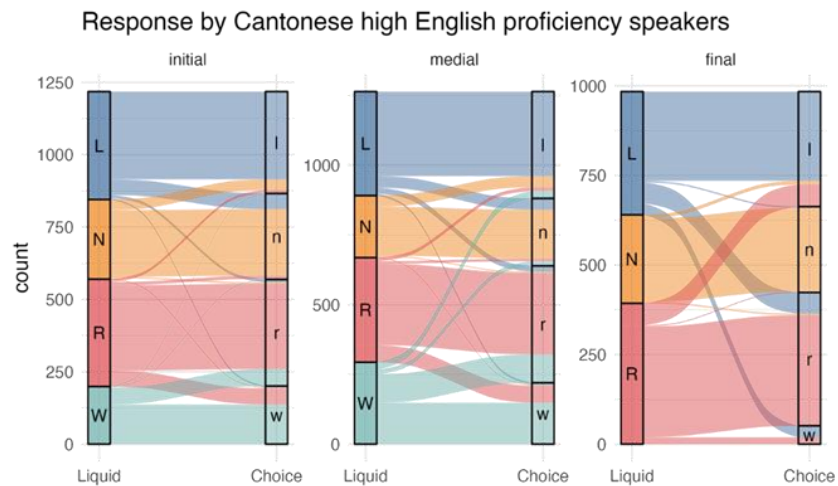


Figure 2 Response by native Cantonese listeners with high English proficiency

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