

HRTs in 1st and 2nd generation Mandarin- and Anglo-background speakers in Australia

This study investigates the use of High Rising Terminals (HRTs)—rising pitch contours on declarative utterances—among different speaker groups in Australia. HRTs are a well-documented intonational feature of Australian English, but little is known about their acoustic characteristics across ethnolinguistic groups. This research asks: How do phonetic realisations of HRTs vary across speakers of different ethnolinguistic backgrounds in Australia?

Data come from corpora of sociolinguistic interviews with (1) first-generation (Gen 1) Mandarin-speaking adult migrants to Australia, (2) second-generation (Gen 2) Australians of Mandarin background, and (3) Anglo-Celtic Australians. HRTs were auditorily coded for 24 young women born between the mid-1980s and late 1990s (N = 8 per group). Preliminary acoustic analysis was conducted on six speakers (two from each group: the highest and lowest HRT users). Acoustic measurements were performed in Praat, focusing on pitch excursion and rise alignment. Pitch excursion—defined as the change in fundamental frequency (F0) across the intonation unit (IU)—was measured in Equivalent Rectangular Bandwidths (ERB) using a random sample of 10 HRT tokens per speaker. Rise alignment was evaluated by identifying the onset of the final pitch rise relative to the final lexical word in the same 10 tokens per speaker. These measures enabled cross-group comparison of the magnitude and timing of pitch rises.

Across the 24 speakers, 7204 declarative IUs were identified, of which 1724 were auditorily coded as HRTs. Anglo-Celtic speakers used HRTs less frequently than the two Mandarin-background groups: 19.36% in Anglo-Celtic speakers, 29.66% in Gen 2, and 26.49% in Gen 1. In terms of the acoustic characteristics, Gen 2 speakers produced HRTs with pitch excursions (M = 3.09 ERB, range = 1.60-4.48 ERB) closely matching those of Anglo-Celtic speakers (M = 3.80 ERB, range = 1.44-6.09 ERB), suggesting little ethnolectal influence. In contrast, Gen 1 speakers exhibited significantly larger and more variable pitch excursions (M = 4.53 ERB, range = 1.27–9.29 ERB), indicating a less target-like and more heterogeneous phonetic realisation in second language speakers. Despite this variability, no group-level difference was observed in rise alignment: for all three groups, the pitch rise consistently began on the nuclear vowel of the final or penultimate syllable—aligning with established Australian English HRT contours.

This study offers initial empirical insights into how prosodic features like HRTs are phonetically acquired and adapted by speakers from multilingual backgrounds. While the difference in HRT rates between Anglo-Celtic- and Mandarin-background speakers suggests an effect of ethnic background, the native-like excursions and alignment in Gen 2 speakers point to full phonetic acquisition of this feature, with no ethnolectal differences, and Gen 1 speakers show evidence of interlanguage effects. The exaggerated excursions in Gen 1 speech may reflect compensatory strategies, sociophonetic overcorrection, or developmental artefacts in second language prosody. Importantly, the stability in rise alignment across groups suggests that some aspects of HRT structure are more robust to inter-speaker variation than others.