Canadian Raising in Polysyllabic Words in Western Canada

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Canadian Raising (CR) is a phenomenon that occurs in Canadian varieties of English (and in other varieties of English around the world), whereby speakers realise the onset of the /aɪ/ and /aʊ/ vowels as "raised" when they occur before a tautosyllabic voiceless consonant, such as in the words *bite* and *bout* (Joos 1942, Chambers 1973). According to Chambers (1989), the realisation of the /aɪ/ vowel in polysyllabic words is also affected by differences in the stress patterns of the polysyllabic words. He suggested that in "heartland" varieties of Canadian English (Alberta to Ontario) raising of the onset of /aɪ/ before voiceless consonants is blocked if the syllable following /aɪ/ has primary stress. For example, raising would occur in *titan* and *microphone*, but not in *titanic* and *micrometre*. Currie-Hall (2005) found that for three speakers from Ontario, variability in the production of /aɪ/ could not be accounted for by the categorical rules proposed. The distribution of the raised and non-raised variants of /aɪ/ overlapped, which suggests a gradient set of realisations for /aɪ/ rather than two categorical variants. Furthermore, she reported that vowel variants occurred in environments that did not match previous descriptions, such as *Siberia* being produced with a raised variant. She suggests that the phonological neighbourhoods (word similarities) account for these mismatches. For example, words with /saɪ#/ would all be produced with the same /aɪ/ variant despite differences in the following phonological environment for specific words. These contradictory findings suggest that further empirical investigation of CR in polysyllabic words in Canadian varieties of English is needed. The current paper contributes to our understanding of CR in Canada by providing an investigation of CR in polysyllabic words for speakers within the "heartland" area (Alberta) and speakers outside of the "heartland" area (British Columbia).

Ten southern British Columbians (25 – 79 years of age) and five Albertans (32 – 60 years of age) were recorded reading a word list. The word list consisted of forty-five monosyllabic and polysyllabic words containing /aɪ/ in a variety of relevant phonological environments. Words were embedded in the carrier sentence "say __ here" and distractors were included in the word list. A dynamic acoustic analysis of hand-aligned tokens of the /aɪ/ vowel is provided to investigate differences across the vowel trajectory (Baker 2006, McDougall and Nolan 2007, Nycz and De Decker 2006). Furthermore, generalised additive mixed models (GAMMs) are used to determine differences in the phonetic realisations of the tokens, as well as, differences in the shapes of the trajectories. Previous research on diphthongs have demonstrated that vowel trajectory shape can be an important perceptual cue for differences in vowel realisations (e.g. Peeters and Barry 1989). As the speaker sample consists of speakers within the "heartland" area and speakers outside the area, geographical differences in the /aɪ/ raising patterns of polysyllabic words are also reported.

Preliminary findings suggest that the realisations of /aɪ/ in polysyllabic words differ from monosyllabic words for speakers from both locations in the current sample. For example, in monosyllabic words, speakers exhibit the CR pattern generally described, i.e. they use the raised /aɪ/ variant before voiceless consonants and non-raised /aɪ/ variant in other environments. On the other hand, in polysyllabic words, speakers produced raised variants both before voiced consonants, and in words where it should be blocked by the stress pattern, contrary to many of the previous descriptions. These results demonstrate that variability in the

realisation of /aɪ/ in polysyllabic words exists for the speakers in this sample, which aligns with Currie-Hall (2005)'s results.

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