

Canadian Raising (CR) is a fairly well-known phenomenon in the phonological literature, which has been described primarily in featural or qualitative terms such as: “the diphthongs [ʌj] and [aj] are in complementary distribution: [ʌj] occurs before the class of voiceless consonants ([s, t, p], etc.) and [aj] occurs elsewhere. A parallel relationship holds between the vowels [aw] and [ʌw]” (Czaykowska-Higgins et al 2012, cf. Joos 1942, Chambers 1973). Phonetic research I have carried out on Manitoba speakers indicates that vowel shortening is a more significant descriptor for CR than raising: pre-voiceless diphthongs are nearly 50% shorter than elsewhere, while vowel height differs only slightly across all allophones. However, feature-based accounts do not account for vowel duration as an intrinsic part of CR.

In this paper I propose a phonological analysis which interprets this durational difference as a reflection of prosodic structure, specifically as an effect of mora sharing, as determined by the sonority distinction between voiced and voiceless codas. There are three main theoretical components to my analysis: 1) the availability of [voice] as a sonority distinction; 2) the connection between sonority and prosodic structure; 3) the relationship between prosodic structure and phonetic duration. A cross-linguistic comparison of sonority research (Parker 2008) indicates that voicing quality is an available sonority distinction within several languages, justifying my proposal that it is also an available distinction within Canadian English. Research on the relationship between sonority and prosodic structure (Zec 1995) indicates that mora licencing/affiliation is related to sonority distinctions; I propose that sonority distinctions related to [voice] thus determine mora licencing/affiliation in Canadian English. Finally, a cross-linguistic study of the relationship between phonetic duration and prosodic structure (Broselow et al 1999) has found that different prosodic (moraic) structures are possible not only between languages, but also within them, and that these difference structures are associated with consistent differences in phonetic duration.

My analysis relies on an existing optimality-based account of the prosodic structure of the English syllable (Hammond 1999) and proposes one additional constraint restricting independent morae to codas which meet a minimum level of sonority; specifically, mora-licencing codas must not be lower in sonority than a voiced obstruent. The only category below this level are voiceless obstruents which, in adhering to this constraint, must instead adjoin to the final mora of the preceding vowel. E.g. in *ride* the /d/ projects its own mora, while in *right* the /t/ does not meet the minimum sonority to project a mora and must adjoin to the preceding mora belonging to the vowel. The effect of vowel-coda mora-sharing in the case of *right* is to abbreviate the duration of the vowel in comparison with the vowel of *ride*, which does not share a mora with its coda. My analysis thus relates the observed difference in phonetic vowel duration to the phonological (prosodic) level as an effect of mora-sharing, in a similar manner to the findings in Broselow et al (1999), and incorporates the most significantly related features of CR found in my phonetic research, coda voicing and vowel duration, into a unified account.

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