

## A Unified Account of the Low Back Merger Shift

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The low back merger (LBM) is attested as a widespread phenomenon across North American varieties of English (e.g., Labov et al., 2005; Becker, 2019). However, little previous work has examined the LBM as a change in progress. Among the studies that have investigated the genesis of the merger (e.g., Bigham, 2010; Durian, 2012; Boberg, 2017), focus has been on the LOT/THOUGHT merger, with little emphasis on PALM as a vowel implicated in the process, likely because PALM is now merged with LOT in most North American varieties of English, despite historically merging with BATH and START in Standard British English (Boberg, 2010, p. 128). Boberg (2010) observes that the independence of PALM from LOT-THOUGHT prevents the LBM shift in Eastern New England (p. 155), highlighting the importance of PALM to this vowel shift. The current study examines the LBM as a change in progress in Victoria, British Columbia, where some older speakers realize PALM differently than LOT or THOUGHT. Findings are based on automated measurements of wordlist data archived in the Synchronic Corpus of Victoria English (D'Arcy, 2015) from 29 speakers (13 men, 16 women), born between 1913 and 1941.

Comparison of vowel mean charts across individuals reveals the following three patterns: fully merged low back vowels; LOT/THOUGHT merged with PALM distinct; and all three low back vowels distinct. TRAP (non pre-voiced-velar, non pre-nasal) consistently appears in the lower front quadrant of the vowel space instead of in a retracted low central position, supporting the hypothesis that TRAP retraction does not begin until the LBM is complete. Previous research found both retracted TRAP and the LBM to be ubiquitous in Victoria speakers born after 1941 (Roeder et al., 2018). Complementary evidence comes from quantitative analysis, which finds no group-level correlations between F1/F2 of TRAP and F1/F2 of LOT, THOUGHT, or PALM among these older speakers.

These results fit a phonological explanation for the LBM shift based on principles of the Modified Contrastive Specification Theory (Dresher et al., 1994), the Contrastive Hierarchy Theory (Dresher, 2009), and the Successive Division Algorithm (Dresher, 2009), according to which phonemes are specified only for contrastive features, and it is only these contrastive features that are active within the phonology (Gardner, 2011; Roeder & Gardner, 2013). Following this theory, TRAP—as the only low vowel in the system once the low back vowels are merged—is unspecified for the feature [ $\pm$  Back], allowing for phonetic dispersion and focalization (Becker-Kristal, 2010) to draw TRAP toward the low central region of the vowel space. Via analogy, the phonetic reinforcement of [ $\pm$  Peripheral] is triggered. [ $\pm$  Peripheral] is the highest ranked constraint and the only constraint differentiating TRAP and the LBM vowels. In other words, as TRAP becomes more central, so too do all lax vowels. This research contributes to ongoing work on the mechanisms involved in the formation of the Third Dialect of English (Labov, 1991), as well as to interdisciplinary work at the interface between sociophonetics and phonological theory.

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