

## Expansion or Approximation: The low-back merger in Indianapolis

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The unconditioned merger of the low-back vowels /oh/ *caught* and /o/ *cot* is “the largest single phonological change taking place in American English” (Labov 1994: 316). This merger is attested in much of North America, specifically Western Pennsylvania, Eastern New England, the American West and Canada. It further exists in a transitional state in the American Midland, where it is one of the defining features of that dialect region (Labov, Ash and Boberg 2006). While much of the early work on the low-back merger suggested that it was an instance of /oh/ becoming /o/ (e.g. Bailey 1985 or Carmony 1972), Herold (1990), following Wetmore (1959) on Western Pennsylvania, offered a different perspective; rather than a *merger by approximation* in which /oh/ moves to approximate /o/, Herold classified the low-back merger as a *merger by expansion* in which “the entire phonetic range formerly divided between the two phonemes becomes available for the realization of either” (91-92). Herold’s findings in Tamaqua, Pennsylvania support her assertion and merger by expansion has been largely accepted as the mechanism of the low-back merger in general (e.g. Labov 1994). Yet further exploration is warranted, as Herold’s research focused on just one region and the low-back merger is an important taxonomical feature in North American English.

This paper examines the mechanisms of the low-back merger in Indianapolis, Indiana, a city in the Midland dialect region. As a part of the transitional merger area, Indianapolis offers data on a wide variety of stages from incipient to complete. Tape recorded sociolinguistic interviews were conducted with twenty-four Indianapolis natives balanced for age and sex. Spectrographic measurements were made of the nuclear F1 and F2 values for the low-back vowels in wordlist and spontaneous speech conditions and in a variety of phonetic environments: before /l/, before nasals and elsewhere (before obstruents and, for /oh/, in open syllables).

The results of this study indicate a merger by approximation and not a merger by expansion. In a merger by expansion, the average distance between the nuclei of /oh/ and /o/ should decrease as the merger progresses, but the average size of the field of dispersion of the two vowels should remain the same. In the Indianapolis data, as the average distance decreases, the area of the field of dispersion does as well ( $r = 0.84$ ). Further, both decrease as birth year increases (distance:  $r = -0.37$ ; area =  $-0.23$ ), suggesting that the merger is advancing among younger speakers, though it is more advanced in some allophonic environments, especially before /l/. Nevertheless, the main pattern of approximation applies to all environments equally. Thus, the low-back merger in Indianapolis is not, as Herold would expect, a merger by expansion, but instead a merger by approximation, calling into question the general mechanism of the low-back merger in other regions as well.

## References

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