

Variation and Change of the American Norwegian Back Vowel Chain Shift Over Time

David Natvig

University of Oslo

In this presentation, I examine phonetic variation over time of the three Norwegian vowels, /ɯ, u, o/, in American Norwegian (AmNw) as spoken in the neighboring Wisconsin communities of Coon Valley and Westby. Norwegian and Swedish demonstrate a distinct historical property among the Germanic languages, namely a chain shift in the long back vowels, where /u/ fronted to /ɯ/ and /o, ɔ/ raised to /u, o/ (e.g., Haugen 1982: 40). Older descriptions of Norwegian varieties, e.g., the *Halling* dialect, however, suggest that this pattern had not reached completion in many rural eastern areas of Norway (Haugen 1969: 423; Venås 1977). Furthermore, Natvig (2016) finds that AmNw *Halling* speakers in northwestern Minnesota retain relatively conservative, yet variable, phonetic forms with respect to these vowels. This work contextualizes that pattern over time and within a larger set of AmNw speakers.

Data come from AmNw recordings in the Norwegian section of the Corpus of American Nordic Speech (CANS; Johannessen 2015), with fifteen speakers ranging in birth year from 1913 to 1957. Tokens of stressed /ɯ, u, o/ vowels are selectively transcribed in Praat (Boersma & Weenink 2020) and formants are measured at 33% (onset) and 66% (offglide) of vowel duration to approximate spectral movement. Following Natvig's (2018) analysis of this chain shift in Norway, raw data are normalized using the *TelsurG* method (Labov et al. 2006) in the NORM vowel normalization and plotting suite (Thomas & Kendall 2007) to allow for comparison across speakers.

Results from two speakers, Coon Valley 17 (b. 1913) and Westby 12 (b. 1942), demonstrate variation in the outcomes of this chain shift today, particularly with the /ɯ/ vowels. Figure 1 shows the mean values of long vowels for these speakers, with arrows indicating movement from onsets to offglides and ellipses marking two standard deviations of variance of /ɯ, u, o/ onsets. Coon Valley 17 shows a more advanced stage of the shift with a centralized /ɯ/, but both /u/ and /o/ range within pre- and post-shift acoustic space. Westby 12, on the other hand, has relatively backed /ɯ/ productions, with /u/ and /o/ more firmly falling within their post-shift high and mid positions, respectively. These informants' productions outline the acoustic range in which vowel productions from the remaining speakers fall, and indicate that patterns in this chain shift are not consistently 'advanced' and 'conservative.' Rather, individual vowels and/or their trajectories may variably trend toward one end of the shift continuum for different speakers, shaping the surface realizations of the chain shift.

A qualitative assessment of how participants pattern in terms of advanced and conservative stages of the chain shift variation in conservative and advanced stages of /u/ and /o/ for men and women over all age groups. However, the younger participants, born between 1936 and 1957, produce more backed /ɯ/ vowels compared to the more advanced positions of older speakers. These findings show a reversal in the historical trend of a sound pattern (cf. Dubois & Horvath 1998; Benor 2015), but one that occurs as an outcome of a uniform system of phonological contrasts (Natvig 2018). These results demonstrate how heritage languages change along different trajectories from homeland varieties (Polinsky 2018: 33), and contribute to our understanding of how phonological structure and fine-grained phonetic variation interrelate in sound changes, both among individuals and within the community.

