Acoustic cues to vowel identification: The case of /ʊ u uː/ in Saterland Frisian

Wilbert Heeringa[1], *Jörg Peters*[1], *and Heike Schoormann*[1]

[1]*Institute of German Studies, Oldenburg University, Oldenburg, Germany*
wilbert.heeringa@uni-oldenburg.de
joerg.peters@uni-oldenburg.de
heike.schoormann@uni-oldenburg.de

Saterland Frisian has a complete set of closed short tense vowels: /i y u/. Together with the short lax vowels /ɪ ʏ ʊ/ and the long tense vowels /iː yː uː/ they constitute series of phonemes that only differ by length and/or tenseness. To identify the phonetic parameters that Saterland speakers use to keep minimal triplets, such as f[ʊ]l 'full', f[u]l 'rotten', and f[uː]l 'much', distinct, we carried out two production tests that were designed to elicit 'normal speech' and 'clear speech'. In the 'normal speech' condition speakers read the target words in random order with intervening filler words. In the 'clear speech' condition speakers were asked to make the word forms identifiable for a listener sitting opposite the speakers but lacking eye contact. Lax and tense vowels were found to be distinguished in both 'normal' and 'clear speech' by means of duration, spectral features, and steepness of the falling f0 contour. Short and long tense vowels were distinguished by the same acoustic cues in 'clear speech'. In 'normal speech', the steepness of the falling f0 contour was found to be the only cue to the distinction between these vowels. We conclude that clear speech data better reveals the variables contributing to the discrimination of the Saterland Frisian triplet words than normal speech data.

Title in Dutch:

Welke akoestische cues spelen een rol bij de onderscheiding van klinkers?
De casus /ʊ u uː/ in het Saterfries.