

## **Articulatory control parameters of phonological contrasts: the case of cue-weighting for Dutch /ɑ/ - /a/**

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Speech-language acquisition involves learning the speech sounds of the language at hand as well as which acoustic cues are relevant to differentiate them. For example, the Dutch vowels /ɑ/ and /a/ in the words 'man' (man) and 'maan' (moon) differ both in their spectral properties (F1 and F2 are both higher for /ɑ/) and in duration (longer for /a/).

Perception experiments indicate that the way in which different perceptual cues are being combined and weighted is language specific, however, there are large individual differences in cue weighting within language groups (Escudero, Benders, & Lipsky, 2009). Furthermore, the different perceptual cues are not entirely independent from a speech acoustics point of view, meaning that one of the cues could play a more prominent role underneath.

The present study combines measurements of perceptual weighting of acoustic cues for the Dutch /ɑ/ - /a/ vowel contrast with measurements of perceptual acuity for spectral and durational differences and measurements of the production of the vowel contrast to unravel (1) what exactly influences how perceptual cues are being weighted, and (2) which cue is actively being manipulated by speakers.

45 young adult speakers of Dutch (age 19-29) participated in the study. Data analysis is currently underway; detailed results will be available at the symposium.

### **References**

Escudero, P., Benders, T., & Lipski, S. C. (2009). Native, non-native and L2 perceptual cue weighting for Dutch vowels: The case of Dutch, German, and Spanish listeners. *Journal of Phonetics*, 37(4), 452-465.