

The effect of laryngeal quality on vowel quality

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This presentation demonstrates how vowel quality is subject to the effects of laryngeal postures. Magnetic resonance imaging (MRI) lends itself well to studying lingual-laryngeal state because of its ability to capture rich information about the vocal tract in a safe way. We have acquired an MRI data set featuring key vowel qualities (produced by two trained phoneticians) in a number of different phonetic contexts captured using 2D (axial, coronal, and sagittal) multi-slice sequences and 2D midsagittal static sequences. The goal is to examine the variation in laryngeal structures as a function of vowel quality and the different contexts (including modal voice vs. glottal stop and epiglottal stop conditions, and modal voice vs. creaky phonation and pharyngealized (raised-larynx) voice. Figure 1 provides an example of the data. In this talk, we will provide an outline of this data set, details about our approach to its analysis, and some preliminary results concerning the quantification of larynx height and epilaryngeal cavity dimensions.

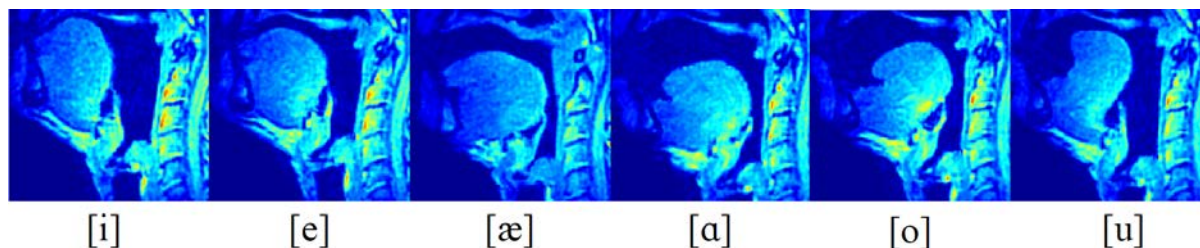


Figure 1: Midsagittal MR images of a phonetic modal vowel series produced with controlled phonatory quality and pitch (left of each image = anterior).

Some useful references:

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