

Effects of feedback masking on fricative contrast in speakers with and without apraxia of speech.

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The present study tested two hypotheses about underlying deficits in apraxia of speech (AOS), derived from the DIVA model (Guenther et al., 2006), using auditory feedback masking. According to the Feedforward Deficit Hypothesis, AOS involves impaired feedforward commands, with greater reliance on auditory feedback. In contrast, the Feedback Deficit Hypothesis claims that AOS involves impaired feedback control. Participants produced sibilants /s/ and /ʃ/ in a carrier phrase under two conditions: normal listening and auditory feedback masking (with speech-shaped noise). Acoustic measures of fricative duration and contrast (spectral mean differences) were obtained from five speakers with AOS, four speakers with aphasia without AOS, and eight age-matched control speakers. Preliminary results (based on perceptually accurate tokens) indicate longer fricative duration with masking for all three groups, no change in fricative contrast with masking for control speakers, and a trend toward increased contrast for both patient groups. At the group level, these findings of enhanced contrast when auditory feedback is removed are consistent with the Feedback Deficit Hypothesis, contrary to previous findings with vowel production. Possible interpretations, the role of somatosensory feedback, and individual differences will be discussed.

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