

The role of auditory feedback during speech production in apraxia of speech.  
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The present study tested three hypotheses about underlying deficits in apraxia of speech (AOS), framed in the context of the DIVA model (Guenther et al., 2006), using an auditory feedback masking paradigm. The Feedforward Hypothesis claims AOS involves impaired feedforward commands, with greater reliance on auditory feedback. The Feedback Hypothesis claims that AOS involves impaired feedback control. The Speech Sound Map Hypothesis states that AOS involves damage to the Speech Sound Map. Participants produced six vowels in a carrier phrase under two conditions: normal listening and auditory feedback masking (with speech-shaped noise). Acoustic measures of vowel contrast, vowel dispersion, and vowel duration were obtained from two patients with AOS and four age-matched control speakers. Results suggested reduced vowel contrast for both patients and a disproportionate contrast reduction with masking for one patient. Both patients showed greater vowel dispersion when auditory feedback was available, and normal vowel lengthening effects. These preliminary data indicate that patients with AOS and similar profiles may nevertheless produce different performance patterns on experimental tasks, indicating possibly different underlying impairments. Data from additional participants will be available and discussed at the conference.

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