

## **Auditory adaptation effects in speech motor control**

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Acoustic speech signals are notoriously variable within and between talkers. To aid in the linguistic decoding of such noisy signals, it is well known that listeners employ a number of perceptual mechanisms —integrating information at multiple levels — to help reduce the impact of linguistically irrelevant acoustic variation. Rapid perceptual accommodation to differences in age and gender is achieved, in part, through vowel-extrinsic normalization, whereby the immediately preceding speech signal provides a frame-of-reference within which talker-specific vowel category boundaries are determined (Ladefoged & Broadbent, 1957). Listeners also draw upon higher-order linguistic information to facilitate phonetic processing of noisy or ambiguous speech acoustic signals, as illustrated by the well-known lexical effect on perceptual category boundaries (Ganong, 1980).

Since their discovery many decades ago, these adaptive perceptual mechanisms have been considered primarily as processes supporting the decoding of ambiguous speech acoustic signals originating from other talkers. Here, I will describe a series of recent studies demonstrating that such perceptual adaptation effects can also alter the processing of self-generated speech acoustic signals (i.e., auditory feedback), and by extension, the sensorimotor control of speech production. The results support the idea that mechanisms of perceptual plasticity, including those driven by higher-level cognitive-linguistic constraints, can interact with the on-line sensory processes guiding speech motor function.