

WITHIN CATEGORY PHONETIC VARIABILITY AFFECTS PERCEPTUAL UNCERTAINTY

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We explored a mechanism for adjustments in the perceptual weighting of multiple probabilistic cues in speech. Subjects heard words that varied along a voice onset time (VOT) continuum (eg. “beach” to “peach”) while performing a two alternative forced choice task (2AFC). For one group the VOT values that they heard came from distributions with wide variance (wide group) around the category prototype and for the other group they came from distributions with narrow variance (narrow group). The slope of the labeling response curve was shallower for the wide group indicating greater perceptual uncertainty. This suggests listeners are sensitive to the reliability of an acoustic cue when making category judgments and can rapidly adjust cue-weights in response to cue-reliability.

Keywords: speech perception, cue weighting, variability, Bayesian perception.