

Learning what sounds prominent – Listener adaptation to prosodic cues to stress

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Speech is inherently variable, and a key question in current research is how listeners cope with both within- and between-speaker variation in the acoustic signal. This challenge is especially evident in prosody, one of the most variable aspects of speech. In the case of lexical stress, for example, its interplay with intonation can make fundamental frequency (f₀, perceived as pitch) an unreliable cue to stress: Depending on the intonational realization, stressed syllables may be realized with either low or high pitch – for example, in different communicative contexts (really? - L* vs. really! - H*), or in the speech of speakers from different regional backgrounds. At the same time, high or rising pitch is generally associated with acoustic prominence and is therefore often interpreted by listeners as signalling stress. How listeners adapt to this variability in the acoustic realization of stress, so far, remains poorly understood.

In this talk, I will examine how listeners navigate variability in the acoustic realization of stress, with a particular focus on f₀ as a cue shaped by intonational context. Drawing on a series of exposure-test experiments, I will show how short-term exposure to speech with either low- or high-pitched stressed syllables (L* vs. H*) reshapes stress processing at both the lexical and phrase level. Across both domains, the findings reveal rapid, input-driven recalibration of f₀: listeners dynamically adjust the weight assigned to this cue in response to prior experience. Importantly, this adaptation process is not speaker-specific but generalizes across speakers, highlighting the flexibility of the perceptual system in balancing long-term stability with short-term plasticity. I will conclude by discussing how these findings inform broader questions in language acquisition, adaptation to accent variability, and the interpretation and annotation of prosodic structure.