

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

Katharina Zahner-Ritter

Phonetics Department, Trier University

k.zahner-ritter@uni-trier.de

Speech is inherently variable, and a key question in current research is how listeners cope with intra- and interindividual variation in the acoustic signal. This challenge is particularly evident in prosody, a highly variable domain. With regard to lexical stress, for instance, the interplay with intonation can affect the reliability of f_0 (perceived as pitch) as a stress cue: stressed syllables may either be low- or high-pitched, depending on the intonational rendition, e.g., in different communicative contexts (really? L^* vs. really! H^*), or when produced by speakers from different regional backgrounds. At the same time, rising or high pitch are typically associated with acoustic prominence, and often straightforwardly interpreted as stress by the listener. So far, little is known about how listeners adapt to such variability in acoustic cues to stress.

In this talk, I will examine how listeners handle variability in acoustic cues to stress – focusing on f_0 , which is shaped by intonation – and whether and how listeners dynamically reweight these cues following short-term exposure. I will present a series of experiments (exposure-test paradigms) that investigate how immediate exposure to speech with low- vs. high-pitched stressed syllables (L^* vs. H^*) influences stress processing at both the word- and sentence level. Results show rapid, input-driven reweighting of f_0 , with listeners modulating its relevance as a stress cue based on recent exposure. Crucially, this adaptation generalizes across multiple speakers, reflecting flexible recalibration of cue weights in stress processing, consistent with a perceptual system that balances stability and short-term adaptability. I will conclude by discussing implications of these findings for language acquisition, adaptation to accent variation, and methodological practices in prosodic annotation.