

CBS Research Seminar

Processing prosody in segmental speech perception: Tests in the spectral and temporal domain

Date: 24 Jan 2024 (Wed)
Time: 5:00 pm - 6:00 pm (HKT)
Venue: Online via Zoom

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Presented by

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Abstract:

Phrasal prosody (phrasing, prominence) and segmental categories are often studied as separate dimensions in both speech production and perception. Models of speech perception also generally assume fairly autonomous processing of the relevant acoustic dimensions and representations for prosody and segment. However, in the speech signal itself, prosodic and segmental information are intricately intertwined, raising the question of how listeners extract both types of representation in spoken language comprehension. This talk is about one way they interact: the function of prosodic information in guiding listeners' perception of segmental categories. First, we will examine vowel perception in American English as a function of contextual and vowel-internal prominence cues. We will see variation in preceding context allows listeners to generate expectations for how vowels will be realized in their fine phonetic detail. These expectations modulate vowel perception and are rapidly integrated in the uptake of vowel formant cues, as revealed by eyetracking. We will extend this examination to consider vowel-internal properties, duration and F₀, showing that prominence-related processing can defy otherwise-expected intrinsic F₀ effects. Finally, we will address a similar question in the temporal domain. This latter part of the talk will test how speech rate normalisation effects are mediated by prosodic phrasing in Seoul Korean. Prosodic phrasing, like prominence, generates expectations for the realisation of subsequent cues. This phrasing variation also impacts the extent to which canonical speech rate effects appear. The talk will conclude with some bigger-picture considerations and suggestions for future research.

Speaker Bio:

Dr. Jeremy Steffman received his PhD in Linguistics in 2020 from The University of California, Los Angeles. He subsequently worked as a postdoctoral researcher at Northwestern University, and came to The University of Edinburgh in 2023 where he is a Lecturer in Phonetics (equivalent to Assistant Prof.). His research deals broadly with speech prosody, speech perception and acoustic phonetics. He has worked on NSF and NIH funded projects, and published in *Attention Perception and Psychophysics*, *Cognition*, *The Journal of Phonetics*, *Journal of the Acoustical Society of America*, *Journal of the International Phonetic Association*, *Language and Speech*, *Language Cognition and Neuroscience*, *Laboratory Phonology*, and *Phonetica*.