[F44] Are categorical production effects in F0 extremum alignment related to the perceived relative pitch of syllables? Laura Dilley & Meredith Brown, MIT, Cambridge MA, USA.

A standard assumption in research in speech intonation is that the presence and timing of fundamental frequency (F0) maxima and minima relative to segments convey crucial information about the categorical identity of an intonation pattern. A recent experiment tested the alternative hypothesis that the representation of intonation patterns is related to the relative pitch level of syllables in sequence. Synthetic stimuli were created using the phrase “Some lemonade” with an overall rising/falling or falling/rising intonation pattern. Cues to the presence and timing of F0 maxima and minima were eliminated by replacing the F0 across “lemon-” with level F0 contours and replacing the sonorant consonants before and after each target vowel nucleus with Gaussian noise. Four continua were created by shifting the F0 levels of one or both syllables in equal ½ or ¾ semitone increments. Thirteen subjects imitated randomized stimuli presented over headphones. Earlier results showed that alignment of maxima and minima in imitations was predictably related to relative F0 level: F0 maxima (minima) were aligned early in the segmental string when the first target syllable in the stimulus was higher (lower) than the following syllable; otherwise, maxima and minima were aligned late. Here, we present additional data concerning the accuracy across subjects of reproduction of F0 levels. The results suggest that earlier reports of categorical effects in F0 extremum alignment during production tasks can be explained in terms of speakers’ attempting to achieve a perceptual goal of producing desired relative pitch levels across target syllables.