ACOUSTICS2008/2933 Close coupling or points of rendezvous? Connections between intonational events and the segmental grid

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The authors examine the connection between the fundamental frequency (f0) contour and the segmental grid, employing the Fujisaki model for decomposing an f0 contour into phrase and accent components. As shown in earlier work by the first author, accent commands are closely connected with the accented syllables of the constituent words of an utterance. They reflect the temporal alignment of intonational gestures by their on- and offset times, as well as the magnitude of the gestures by their amplitudes. Their timing relates to phonemic function, and the amplitudes are strongly correlated with the prominence of an accented syllable. In this study the authors attempt to model the intensity contour of an utterance as a concomitant of the articulatory gesture, namely by low-pass filtering pulse-wise "syllable commands", yielding onset and offset points as well as amplitude values of the syllabic gestures and relate these data to the accent command data from the f0 tier. We examine the influence of phonemic distinctions on the alignment between the f0 contour and the segmental grid, as well as the influence of the intonational gesture on the realization of segments. The work is carried out on spontaneous American English speech data from the Buckeye corpus.