Temporal relationships between prominence features and hand gesturing at potential turn boundaries in German and Swedish

Margaret Zellers, Universität Kiel

Research investigating the complex interplay of prosody and gesture in spoken communication has led to proposals that these should be treated as a single communicative system rather than two separate systems (cf. Gibbon, 2009; Wagner et al., 2014). One functional area in which both prosody and gesture have been shown to be relevant is the management of turn-taking and the possible selection of a next speaker in conversation. I will report on research studying the use of prosodic features and hand gestures at locations at which speaker change becomes relevant, comparing their use in German and Swedish. I will present data analyses focusing specifically on the temporal relationship between prosodic and gestural features in the vicinity of turn ends. Referential gestures, those which share semantic content with some part of the spoken text, have generally been found to have a rather close alignment with the stressed syllable of the corresponding lexical referent, with the onset of the gesture stroke beginning shortly before the onset of the stressed syllable rhyme, but with the alignment of the end of the syllable and gesture stroke more flexible. In the vicinity of turn ends (i.e. within 500 milliseconds of the offset of speech), however, we find that there also appears to be a constraint on the ending alignment of the gesture stroke, which must be closely timed with the offset of the stressed syllable, even if this syllable is not the final word in a spoken turn. More general temporal alignment differences can also be shown to be associated with speaker change and floor-holding, and to differentiate between floor-holding where a listener does or does not produce a backchannel. These results suggest that fine details of temporal alignment between speech, and specifically prosodic features, on the one hand, and gestures, on the other, are important methods of conversational management.