

Details in the perception of German prominence: Cue power estimates and contexts effects

Oliver Niebuhr, Kiel University

It is widely accepted for German and other languages that duration and F0 are the major prominence cues, with F0 being more important than duration. But, how much of a change in duration is actually necessary to counterbalance a given change in F0? Our experiment addresses this question and hence represents the first attempt to quantify the cue hierarchy of F0 and duration in combination with the semantic context and the order of the F0 and duration cues. We conducted a perception experiment in which word identification was used to obtain indirect judgments about the relative prominences of two neighbouring accented syllables. For example, the target item <krankenschwestern> can be identified as either the one-word item 'nurses' or the two-word item 'sick sisters', depending on whether the first of the second (underlined) accented syllable is more prominent. Our results based on these lexical decisions confirm that F0 outweighs duration in terms of cueing power. More specifically, a change of about 30 % in syllable duration roughly corresponds to a 5 % change in pitch-accent F0 range, largely independently of the order and overall magnitude of the two prominence cues. It was also irrelevant whether the two accented syllables were directly adjacent or separated by one or two unaccented syllables. Finally, we provide further evidence for the constructivist nature of perceived prominence in terms of strong top-down effects of semantic context and emphasis, which were able to overrule or reassign F0 and duration cues to prominence.