Acoustic and respiratory evidence for utterance planning in German

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ABSTRACT

This study investigates prosodic planning in a reading task in German. We analyse how the utterance length and syntactic complexity of an upcoming sentence affect two acoustic parameters (pause duration and the initial fundamental frequency peak) and two respiratory parameters (inhalation depth and inhalation duration). Two experiments were carried out.

In the first experiment, data for twelve native speakers of German were recorded. They read sentences varying in length (short, long) and syntactic complexity (simple, complex). Data were analysed on the basis of the four phonetic parameters. Pause duration, inhalation depth and inhalation duration showed significant differences with respect to sentence length, but not to syntactic complexity. The initial f0 peak was not influenced by variations in length or syntactic complexity.

In the second experiment it was hypothesized that the initial f0 peak is only sensitive to length manipulations of the first constituent. Twenty speakers were recorded reading utterances varying in the length of the first (short, medium, long) and last syntactic constituent (short, long). Results for the initial f0 peak confirmed our hypothesis. It is concluded that the breathing parameters and pause duration are global parameters for planning of the upcoming sentence whereas the height of the fundamental frequency peak is a more local measure sensitive to the length of the first constituent.