Rate induced variation of spontaneous produced vowels

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Spontaneous Speech varies according to the speaking rate. With a higher tempo, pronunciation differs from the canonical ideal.

With increasing speaking rate vowel segments tend to become shorter (Miller 1981) and more centralized (Fourakis 1991). Unstressed vowels are more effected than stressed ones (Peterson & Lehiste 1960).

The topic of my investigation is to examine these findings for German speech. In the summerschool the results of an analysis of the Kiel Corpus (IPDS 1995–1997) will be presented. The analyzed data contains spontaneous speech which was collected during dialog sessions in a scheduling scenario.

Main issue of the analysis is to check if variation in formant frequencies can be accounted for by the *perceived local speech rate* (PLSR) (Pfitzinger 1999). Earlier studies have already shown that automatic speech recognition is much more effected by rate variation than human speech recognition (Chung & Seneff 1999). Therefore tempo information seems to be used for speech perception (Verbrugge et al. 1976). Indeed there is evidence, that speaking rate is used as a normalizing factor (Francis & Nusbaum 1996).

Other factors like stress (Miller 1981), word frequency and word class (Bell et al. 2002) will be considered.

Results are expected to be highly speaker depended (Miller 1981).

Literatur

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