Beeke Muhlack

Acoustic characteristics of filler particles in German – preliminary results

Filler particles, such as äh and ähm in German, are said to be produced rather unconsciously and thus can be hypothesised to show a high degree of within-speaker consistency. Whenever linguistic phenomena, such as filler particles and disfluency patterns, are used in forensic casework, it is important to distinguish between frequent and infrequent speech occurrences and language- or speaker-specific occurrences. Therefore, it is important to consult speech corpora to establish the distribution of a specific phenomenon. In this talk, preliminary results of the Pool2010 Corpus are presented regarding the distribution of pause-internal phonetic particles and their context in speech. Aspects under investigation are the frequency of filler particles, segment duration but also vowel quality in a comparison of normally produced speech with Lombard speech. The application of disfluencies in forensic casework will be discussed.

Raphael Werner

Comparison of acoustic parameters of in- and exhalations in real speakers and 3D-printed vocal tract models

Breath noises are a frequent, yet under-researched companion of speech. However, they differ from speech in two major ways, i.e. by having a reversed air stream and lacking phonation, which may pose problems for the comparability with speech signals. In this study, we used 3D-printed vocal tract models representing oral settings of four vowels (/i:, a:, u:, @/) and four fricatives (/x, C, S, s/) to bypass this obstacle. The models, based on a male and a female speaker, were supplied with static airflow through the glottis in two directions to simulate in- and exhalations for each oral setting. We use these noises generated with the vocal tract models to tackle two questions: 1) What is the effect of reversing the air stream on the signal? 2) Can we use the simulated inhalations, for which we know the underlying oral setting exactly, to approach the oral setting during inhalations by real speakers?