

## Approaches to paralinguistic sounds in perception and production

Philip Hoole and David Huß

Institut für Phonetik und Sprachverarbeitung, LMU München

In the first part of this talk we will look at paralinguistic sounds very directly in terms of their possible relevance for the naturalness, likeability and recallability of synthesized speech. For the experimental materials paralinguistic sounds, e.g. breath noises, were inserted into synthesized speech. The clearest results were for naturalness: breath noises can enhance naturalness judgements.

Interestingly, listeners seem to be sensitive to the speaker congruence of the inserted breath sounds, as hypothesized in earlier work by Trouvain & Möbius. No effects of the inserted sounds on recallability were found.

In the second part of the talk we look much more indirectly at paralinguistic sounds, based on recent experiments using realtime magnetic resonance imaging. We start here with a characteristic connected speech process of German, namely /ntn/ sequences that arise from schwa elision and may lead to glottalization of /t/. Following the earlier acoustic work of Kohler the movement patterns of the velum are of considerable interest here. This serves to show the potential of RT-MRI in a standard prompted speech design. We then move beyond this to show the implementation of an unscripted dialog (map-task) scenario in the scanner, in which nonverbal articulatory movements (both audible and inaudible) can potentially be observed. Typical movement patterns from both approaches will be discussed.