

Stress processing in syllable sequences

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The planned experiment is part of the BMBF-project „How does the brain distinguish prosody from song?“ in cooperation with Prof. Friederici of the Max-Planck-Institute in Leipzig and Prof. Amunts and Dr. Morosan of the Forschungszentrum in Jülich. The aim of the project is a better understanding of the neuronal processing of prosody and song. In Leipzig the experiments focus on complete sentences. In Magdeburg the processing is investigated on the level of syllables.

In previous experiments differences between sung and spoken syllables were mainly seen in the superior temporal sulcus and the inferior frontal gyrus of the right hemisphere. The melodic in comparison to the non-melodic arrangement of the syllables showed different activation depending on the relevance of this arrangement for the task.

Beside the already investigated variation of the parameter frequency distribution, prosody and song are different in the arrangement of stress. In the planned experiment the influence of the arrangement of stressed and unstressed syllables should be investigated. The intensity of the syllables in a sequence varies in a periodic or non-periodic way. The subjects get different tasks which focus either on the periodic or on the non-periodic arranged sequences. The periodic arrangement is more common in songs, whereas the non-periodic arrangement is more common for prosodic modulations. In this way the differences between these two modes should reveal more insight in the differences or similarities of the processing of prosody and song.