Vortragsankündigung

Der Sonderforschungsbereich 991 "Die Struktur von Repräsentationen in Sprache, Kognition und Wissenschaft" lädt herzlich ein zum Vortrag von

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Motor cortex in word comprehension: neurophysiological evidence

Grounded cognition approach to language processing postulates, amongst other things, the involvement of modality-specific brain areas in storage and comprehension of concrete semantics. The best known case of such an involvement is that of action words, whose representations have been claimed to incorporate the brain's motor structures. These claims have, however, been heavily contested in the literature; it has, for instance, been suggested that any motor-cortex activity in response to action-related language is a secondary post-comprehension phenomenon. In this presentation, we will review some of the mounting evidence of direct motor cortex contributions to action word processing. These are based on two strands of research. First, we will see how electrophysiological (EEG, MEG) recordings may demonstrate motor-cortex activation at very early latencies, often below 200 and sometime even as early as 80 ms from the point in time when action stimulus can be identified. Moreover, such rapid activations can be observed when the stimuli are not actively processed or even attended to, implying automatic involvement of the motor structures in the subliminal comprehension process. Second, we will look at causal evidence, obtained with TMS, that shows how stimulation of motor areas can selectively affect action word comprehension. Finally, we will also discuss how non-literal use of action language may or may not involve the motor system.