
Thursday, **24 May 2012**, 16:00 hrs
Stephanstrasse 1 a
Wilhelm Wundt Room, 4th Floor

Speech & Sound Club

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Neuronal representation of communication signals in the primate voice area

Communication with other members of one's species is not restricted to human language: most primates use vocal and facial signals for social interactions and survival. Recent fMRI studies have identified brain areas dedicated to processing species-specific vocal signals ('voice' areas) in the anterior temporal lobe of both humans and nonhuman primates, and researchers have started to establish homologies between how the brains of primates process communication signals.

Nevertheless, it remains unclear how voices are represented at the neuronal level. My research uses fMRI-guided electrophysiology targeting the anterior 'voice' area to investigate the encoding of vocal features at the resolution of single neurons.

I will first describe a project in which we identified voice-sensitive cells as neurophysiological substrates associated with voice processing, and discuss how their stimulus-encoding properties relate to the putatively analogous 'face cells' in the visual system. I will then talk about more recent work quantifying and characterizing visual influences of face information on voice-sensitive neurons in the context of audiovisual communication.

This type of approach builds on the links between how the monkey and human brain process voice content, and contributes to the development of an animal model system to study the neuronal representation of auditory and visual aspects of communication signals at the neuronal level.