From sound to meaning: The neuropragmatics of prosody

PD Dr. Daniela Sammler
Max Planck Institute for Empirical Aesthetics, Frankfurt am Main, Germany

During verbal communication, humans regularly decode not only *what* is said but also *why*. Pragmatic theory posits that it is particularly the *why* – the communicative intention (illocution) of speakers – that drives the recipient's reactions (Grice, 1957). Intonational phonologists (Bolinger, 1986) and developmental psychologists (Malloch & Trevarthen, 2009) have long been aware of the importance of prosody for communicating social-relational (illocutionary) meaning. How the brain extracts meaning from voice tone remains, however, poorly understood. Here, I will integrate previous neurofunctional accounts of language with evidence from behavioural, neuroimaging, brain stimulation and cross-cultural studies to reveal the complex neurocognitive architecture of prosody perception in speech. I will show (i) dual processing streams for prosody perception, (ii) the relevance of social cognition for the extraction of meaning from prosody, and (iii) cross-cultural communication of prosodic meaning. Taken together, this research proposes the interaction of several complementary mechanisms during prosody perception and offers a fresh look on the neural basis of interpersonal communication and mutual understanding.

<u>Selected literature:</u>

Sammler, D., Grosbras, M.-H., Anwander, A., Bestelmeyer, P. E. G., Belin, P. (2015). Dorsal and ventral pathways for prosody. *Current Biology, 25*, 3079-3085.

Hellbernd, N., Sammler, D. (2018). Neural bases of social communicative intentions in speech. *Social Cognitive and Affective Neuroscience, 13*, 604-615.

Chien, P.-J., Friederici, A. F., Hartwigsen, G., Sammler, D. (2020). Neural correlates of intonation and lexical tone in tonal and non-tonal language speakers. *Human Brain Mapping, 41*, 1842-1858.