How functional neuroimaging can help to generate integrative models of social cognition

Understanding what other people feel and think are central for successful human interaction. Scientific studies on the topic suggest that empathy and Theory of Mind (mentalizing) are two major building blocks of social cognition. At a closer look, it becomes clear that a variety of processes are involved in these capabilities. In this talk, I present functional neuroimaging studies and meta-analyses which focus on sorting and integrating these processes based on brain activity.

The central piece of the presented line of research is a meta-analytic clustering of neuroimaging studies. Based on its results, I propose that social cognitive processes can be described by a multilevel model of hierarchical structure, akin to models in intelligence and personality research. A higher level describes more broad and abstract classes of functioning, whereas a lower one explains how functions are applied to concrete contexts given by particular stimulus and task formats. Specifically, the higher level of our model suggests 3 groups of neurocognitive processes:
(a) predominantly cognitive processes, which are engaged when mentalizing requires self-generated cognition decoupled from the physical world;
(b) more affective processes, which are engaged when we witness emotions in others based on shared emotional, motor, and somatosensory representations;
(c) combined processes, which engage cognitive and affective functions in parallel.

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This colloquium lecture takes place online!
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