

CS18-012 - Convergent evolution of the social brain? A comparative dog-human fMRI approach (EVOSOCBRAIN)

Abstract

In recent years, the thriving field of Social Neuroscience has substantially advanced our knowledge about the neural underpinnings of human social cognition. However, our knowledge about human social behavior remains incomplete without considering its evolutionary roots. Dogs are thus being increasingly used as a model to comparatively study social cognition, besides primates. They are of special interest for evolutionary models of social cognition due to their advanced social skills, which might result from their tight interactions with humans over several thousand years. Previous research comparing dogs and humans has been predominantly behavioral, and the limited research on dogs' brain function has not yet systematically targeted social cognition. The present proposal will close this gap and investigate how dogs process the mental states of humans. To this end, we will assess brain function in fully awake dogs specifically trained to participate in three functional magnetic resonance imaging (fMRI) experiments, tapping into imitation, theory of mind and empathy. Using closely matched fMRI experiments in humans, performed on the same fMRI scanner, we will explore the key hypothesis that the processing of social information relies on similar neuro-cognitive and -affective mechanisms in dogs and humans. This is expected to generate crucial new insights into central questions of cognitive science and the (convergent) evolution of social cognition.

Scientific disciplines:

Cognitive science (40%) | Brain research (40%) | Cognitive psychology (20%)

Keywords:

comparative neuroscience, social cognition, dog fMRI, imitation, empathy, Theory of Mind

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Status: Ongoing (01.10.2019 - 30.09.2023)

Further links to the persons involved and to the project can be found under

<https://www.wwtf.at/funding/programmes/cs/CS18-012/>