

Journal Club Course Description

Aim of the course

Aim of the course: Cognitive neuroscience currently deals with and promises new insights into topics that held human minds captivated for millennia. Among those are perception, awareness, social cognition, emotion and motivation. Despite the continuous gain of knowledge in these domains imaging methods as mentioned below rely on co-occurrence between physiological measures and behavioral variations. When two events occur together, humans often conclude that they have a cause-and-effect relationship.

Neuroimaging methods such as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) have become methods of choice in cognitive neuroscience. However, these methods are merely correlational since they measure brain activity during a specific task or condition compared to another. Neurostimulation methods such as transcranial magnetic stimulation (TMS) claim to introduce causality into imaging studies, since they allow to transiently manipulate activity in specific brain areas. Yet, we still know little about the mechanisms of actions of these neurostimulation methods. If we found a specific area for believing in god or empathy in the brain, would it really be possible to enhance or inhibit these phenomena by means of neurostimulation or do we overestimate the potential of our state-of-the-art methods?

The journal club will include discussion of current research questions in cognitive science on the basis of primary literature and selection of important current publications in the field of cognitive science as well as presentation and discussion in the course of the journal club.

Learning outcome, competences

knowledge:

- Deeper understanding of current approaches in cognitive science and their influence on the field.
- Basic understanding of the principles of neuroscience methods (fMRI, TMS) and critical awareness of their limitations
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attitude:

- to deal with different points of view in an intercultural context
- to interpret and evaluate results of primary scientific literature at an advanced level

skills:

- Ability to follow scientific developments in the field of cognitive science in a reflective manner
- Ability to moderate discussion on current topics in cognitive science

Content of the course

Topics of the course

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Learning activities, learning methods

interactive discussions

Evaluation of outcomes

Learning requirements, mode of evaluation, criteria of evaluation:
requirements

- 2 presentations and several short presentations of current publications, participation in discussions, documentation on platform
- attendance

mode of evaluation: practical course mark

criteria of evaluation:

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Reading list

Compulsory reading list

- Will be announced at the first meeting and partly chosen according to the interests of the participants.

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Recommended reading list

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