The LEAD Graduate School & Research Network at the University of Tübingen invites you to attend the lecture by

Prof. Dr. Philipp Sterzer
Charité – Universitätsmedizin Berlin

Predictions, perception, and psychosis

Wednesday, November 29th, 2017, 10.00–12.00 hrs
Festsaal (Ebene 3), Klinik für Psychiatrie und Psychotherapie, Calwerstraße 14, 72076 Tübingen

Abstract: Perceptual inference is the process by which current beliefs are used to infer the probable causes of the incoming sensory signals. When these sensory signals are perceptually ambiguous, inference may result in spontaneous alterations between two or more perceptual states, a phenomenon called multistable perception. The neural mechanisms of the underlying inferential process have remained controversial. Whereas some authors argue that multistable perception is governed by local processes in sensory cortices, others have proposed a role for higher-level frontoparietal brain regions in driving perceptual inference. Here, I will propose an account of multistable perception that can reconcile these apparently contradictory views within the computational framework of predictive coding. I will also present results from computational modeling in a Bayesian framework and model-based fMRI that support the proposed account. Finally, I will outline how altered predictive coding may explain abnormal inference in psychotic states and present empirical behavioral and neuroimaging work that used multistable perception to probe the role of predictive feedback signaling in psychosis.

Biography: Philipp Sterzer studied medicine at Ludwig Maximilian University in Munich and Harvard Medical School in Boston. After obtaining his MD at the Max-Planck-Institute of Psychiatry in Munich, he trained in clinical neurology at Goethe University in Frankfurt am Main, where he also started his research into the neural mechanisms of visual perception. He continued this line of work as a postdoc at the Wellcome Trust Centre for Neuroimaging in London and as an Emmy-Noether junior research group leader at the Department of Psychiatry and Psychotherapy, Campus Charité Mitte, Charité – Universitätsmedizin Berlin. After completing his clinical training in psychiatry and psychotherapy, he became a supervising psychiatrist, and in 2011, Professor of Psychiatry and Computational Neuroscience at Charité. His group uses neuroimaging and computational methods to investigate include the neural processes underlying visual perception and alterations of these processes in mental disorders. In addition to a large number of articles in scientific journals and books, he published a book about the brain for children and adolescents entitled “29 Fenster zum Gehirn”.

Important Publications:


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