



## Vorträge im Wintersemester 2022/23:

Ort im Fall von Präsenz: Vorlesungssaal 001, Forschungszentrum Deutscher Sprachatlas, Pilgrimstein 16

Zugang falls web-basiert: <https://webconf.hrz.uni-marburg.de/c/rai-ua9-rv5-twz>

Bitte zeitnahe Ankündigungen beachten, ob jeweiliger Vortrag nur in Präsenz oder auch web-basiert.

**Montag, 31.10.2022, 18 Uhr ct (web-basiert und auch im Sprachatlas)**  
**Are Sharks Smart? Diving into Brain Evolution in Cartilaginous fishes**

Prof. Dr. Kara E. Yopak  
ZoMBiE Lab, University of North Carolina Wilmington, USA

**Montag, 28.11.2022, 18 Uhr ct (Präsenz)**

*Student special!*

**The study of altered states of consciousness as basic research into consciousness mechanisms**

Dr. Timo Torsten Schmidt  
Neurocomputation and Neuroimaging Unit, Fachbereich Erziehungswissenschaften und Psychologie  
Freie Universität Berlin

**Montag, 5.12.2022, 18 Uhr ct (web-basiert und auch im Sprachatlas)**

**Dopamine and the neuronal encoding of time**

Prof. Dr. Nandakumar Narayanan  
University of Iowa, Department of Neurology, Iowa, USA

**Montag, 16.1.2023, 18 Uhr ct (Präsenz)**

**A predictive-processing account of psychosis**

Prof. Dr. Philipp Sterzer  
Professor für Translationale Psychiatrie, Zentrum für Diagnostik und Krisenintervention  
Universitäre Psychiatrische Kliniken Basel, Gesundheitszentrum Psychiatrie, Basel, Schweiz

**Montag, 23.1.2023, 18 Uhr ct (Präsenz)**

**Listening and meta-listening: How do direct and indirect paths shape auditory perception?**

Prof. Dr. Jonas Obleser  
Institut für Psychologie I, Universität zu Lübeck

## Kurze Abstracts einzelner Vorträge:

### **28.11.22 (Timo Schmidt): The study of altered states of consciousness as basic research into consciousness mechanisms**

Altered states of consciousness (ASCs) can be induced by psychoactive substances or non-pharmacological methods. The joint study of experimentally induced ASC phenomenology and changes in resting-state fMRI connectivity constitutes a research opportunity to relate changes in subjective experience to underlying biophysical mechanisms. I will present the results of meta-analyses to establish dose-response relationships of pharmacologically induced ASCs based on the Altered States Database ([www.asdb.info](http://www.asdb.info)) and their comparison to the experiences during non-pharmacologically induced ASCs and will introduce a new Citizen Science platform [alteredXproject.com](http://alteredXproject.com) to collect big data on the phenomenology of ASCs. Finally, I will present results from resting-state fMRI studies into the neural correlates of Ganzfeld (perceptual deprivation) and flicker light stimulation.

- <https://journals.sagepub.com/doi/10.1177/0269881121992676>
- <https://www.nature.com/articles/s41598-020-75019-3>

### **16.1.23 (Philipp Sterzer): A predictive-processing account of psychosis**

There has been increasing interest in the neurocomputational mechanisms underlying psychotic disorders in recent years. One promising approach is based on the theoretical framework of predictive processing, which proposes that inferences regarding the state of the world are made by combining prior beliefs with sensory signals. Delusions and hallucinations are the core symptoms of psychosis and often co-occur. Yet, different predictive-processing alterations have been proposed for these two symptom dimensions, according to which the relative weighting of prior beliefs in perceptual inference is decreased or increased, respectively. I will present recent behavioural, neuroimaging, and computational work that investigated perceptual decision-making under uncertainty and ambiguity to elucidate the changes in predictive processing that may give rise to psychotic experiences. Based on the empirical findings presented, I will provide a more nuanced predictive-processing account that suggests a common mechanism for delusions and hallucinations at low levels of the predictive-processing hierarchy, but still has the potential to reconcile apparently contradictory findings in the literature. This account may help to understand the heterogeneity of psychotic phenomenology and explain changes in symptomatology over time.

- Sterzer, P., Adams, R. A., Fletcher, P., Frith, C. et al. (2018). The Predictive Coding Account of Psychosis. *Biological Psychiatry*, 84, 634-643, doi: 10.1016/j.biopsych.2018.05.015
- Weilhhammer V., Röd L., Eckert A.L., Stuke H., Heinz A., Sterzer P. (2020). Psychotic Experiences in Schizophrenia and Sensitivity to Sensory Evidence. *Schizophrenia Bulletin*, 46(4), 927-936 doi:10.1093/schbul/sbaa003

### **23.1.23 (Jonas Obleser): Listening and meta-listening: How do direct and indirect paths shape auditory perception?**

Amidst a flurry of methodological advances in neuroimaging and data analysis, we have made somewhat limited progress in explaining individual (i.e., trait-like) and momentary (i.e., state-like) differences in a listener's sensations and perceptions, that is, in their behaviour in a given communication situation. In the present talk, I will present recent evidence from our human neuroimaging work on two broadly distinct ways of how brain traits and states shape the outcome of auditory perception: "direct" changes in sensory encoding specifically are contrasted with "indirect", modulatory, or even meta-cognitive changes along the auditory-perception cascade. I will argue that more in-depth consideration of the latter, indirect class of neural processes will help us explain better audition as a whole, with implications for language, hearing-loss, and aberrant perception.