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# Colloquium lecture by Dr. Philipp Kuhnke

## The neural basis of conceptual knowledge

Conceptual knowledge is central to human cognitive abilities, such as word comprehension. Whereas amodal theories posit that concepts comprise abstract symbols, grounded cognition theories propose that concepts consist of perceptual and motor features represented in modality-specific perceptual-motor regions. In this talk, I will present evidence for a hybrid account, according to which conceptual processing involves both modality-specific and cross-modal brain regions. Several studies using functional neuroimaging (fMRI) and non-invasive brain stimulation (TMS) indicate that (1) conceptual processing engages both modality-specific and multimodal regions in a task-dependent fashion, (2) multimodal and modality-specific cortices show flexible functional coupling with each other, and (3) the joint contribution of modality-specific and multimodal areas is causally relevant for conceptually-guided behavior. Overall, our findings suggest that conceptual processing relies on a dynamic hierarchical neural architecture from modality-specific to multimodal up to amodal brain regions.

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**This lecture takes place at Liebiggasse 5, 1010 Vienna,  
Lecture Hall G 2<sup>nd</sup> floor and will be streamed.**

Thursday, March 27, 2025; 3pm