

“Structuring knowledge across reference frames: beyond hippocampal cognitive maps”

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In humans, the hippocampal-entorhinal system represents both spatial and nonspatial knowledge in the form of allocentric cognitive maps that are crucial for flexible behavior and generalization. In this talk, I will argue that hippocampal maps are only one face of the coin, and that conceptual relationships are represented in the human brain across complementary allocentric and egocentric reference frames encoded in hippocampal and parietal regions.

I will present fMRI data showing the interplay of allocentric and egocentric coding during conceptual navigation as well as eye-tracking and neuroimaging results suggesting that conceptual spaces are navigated via spatial attentional movements. These results contribute to our understanding of how humans organize and search for conceptual information in memory, and support the proposal that, in our species, the brain's navigation system can be repurposed to represent knowledge across different reference frames.



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