German Center for Neurodegenerative Diseases (DZNE) Magdeburg
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Dr. Andrej Bicanski

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"From spatial to episodic memory"

Monday, 7th September 2020 at 3.30 p.m.

via Lifesize

Host: Prof. Thomas Wolbers
Organizer: Sandra Dittmann (sandra.dittmann@dzne.de)

Abstract:

Our understanding of spatial memory and navigation has benefited from an unprecedented wealth of findings regarding the underlying neural representations, in the form of place cells, grid cells, vector cells etc. (and their interactions). But there remains a perceived gap between spatial and episodic memory, our ability to recall life events in spatial and temporal extent. I will argue that the large corpus of findings regarding spatial memory allows us to frame episodic memory in terms of the neural mechanisms underlying spatial memory. Focusing on the so-called BB-model of spatial memory and imagery (Bicanski and Burgess 2018), I will review how the model bridges the gap between neurophysiological and behavioural descriptions of a cognitive agent, and how it may allow for the framing of episodic memory in terms interacting neural populations with known single neuron responses.

Bicanski A, Burgess N. - A neural-level model of spatial memory and imagery. eLife, 2018 ;7:e 33752. https://doi.org/10.7554/eLife.33752

Bicanski A, Burgess N. - Neuronal vector coding in spatial cognition. Nature Reviews Neuroscience, 2020, https://doi.org/10.1038/s41583-020-0336-9