Neural Plasticity

Special Issue on
Spatial Learning and Memory in Neuropsychiatric Disorders

Hindawi

CALL FOR PAPERS

Spatial navigation and memory are considered to be a part of the declarative memory system. Navigation requires representations of hidden goals, recognition of positions of objects in a directly inaccessible space, continuous updating of changing information, behavioral flexibility, and cognitive coordination of multiple information streams. Together, these processes give rise to highly flexible and purposeful spatial behavior based on internal representations of the environments in the form of "cognitive maps." These cognitive functions are assessed both in humans and increasingly in in the experimental animals and therefore can serve in studies of cognitive impairments in CNS disorders and their animal models. Numerous neuropsychiatric disorders present themselves with deficits in spatial navigation, memory, and cognition. For example, schizophrenia is characterized by stable and reproducible spatial navigation deficits. Place navigation impairments are not limited to schizophrenia. Alzheimer disease (AD) is a neurodegenerative disorder, which affects first and foremost the mediotemporal structures, especially the hippocampus and the parahippocampal gyrus. Episodic memory deficit is a hallmark of the disease, although spatial memory impairment in real space, such as in a hospital lobby, has also been consistently reported. Increasing attention is recently focused on cognitive and memory impairments in affective disorders. For example, posttraumatic stress disorder has at its core hippocampus dependent declarative memory amnesia for spatial-temporal context of traumatic experience. On the other hand in anxiety disorders alternations in hippocampal pattern separation and pattern completion functions, related to adult neurogenesis, likely underlie some of the spatial memory manifestations.

We invite authors to contribute original research articles as well as review articles that will illustrate and stimulate the continuing effort to understand the role of spatial learning and memory in neuropsychiatric disorders.

Potential topics include, but are not limited to:

- ▶ Spatial learning and memory in schizophrenia
- ▶ Deficits in spatial memory in MCI and Alzheimer disease
- ▶ Spatial flexibility in neuropsychiatric disorders
- ▶ Neurophysiological foundations of higher cognitive functions
- ▶ Animal models of neuropsychiatric disorders and place navigation
- ▶ Integrated approaches into assessment of spatial memory cognitive deficits
- ▶ Neurodevelopmental processes in the brain and their relation to place navigation
- ▶ Design of spatial tests and spatial test batteries for neuropsychiatric disorders
- ▶ Virtual reality for a study of spatial memory deficits
- ▶ Disorders of spatial cognition in humans and animal models
- ▶ From single-neuron modeling to cognition, discrimination, and place learning

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/np/sncd/.

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