

Abstract

Spatial behaviour of animals is used to model cognitive human abilities such as declarative learning and memory. Cognitive deficits accompany a number of neuropsychiatric disorders and their treatment is most problematic. Schizophrenia is one of these disorders. Behavioral, neurochemical, and molecular evidence point to a critical role of the NMDA glutamatergic receptors in the pathogenesis of schizophrenia. Disruption of their function results in behavioral and physiological changes including dysregulation of the dopaminergic neurotransmission. This fact is used to model schizophrenia-related symptoms by systemic administration of NMDA receptor antagonists. Models combining administration of these drugs with behavioral tests aimed at specific cognitive deficits are of particular interest. This thesis uses existing evidence to show that the Carousel Maze is such a behavioral test, which uses dynamic spatial learning to test the ability to coordinate discordant information and specific use of the relevant cues.