Abstract

A comprehensive understanding of spatial working memory requires a unified model encompassing different mechanisms. The statistical power demanded by this model can only be provided through conducting a large-scale experiment. A machine learning algorithm can give a benchmark of explanatory power that a model can achieve. Huang's (2022) study adopts this approach to study spatial working memory.

The present study follows Huang's research and tried to explore the role of position in human spatial working memory and develop a consensus on how should similar data be handled in future studies. From the positional analysis, the rotation and reflectional of the patterns are found to be crucial while building a model of spatial working memory. The positional effect is obvious and suggests possible hemispheric asymmetry and functional difference in spatial working memory. In addition, the position effect has different influences on hit rate and false alarm rate implying there may have two systems working behind.

Keywords

Spatial working memory, large-scale experiment, convolutional neural network