

Recognizing ideas generated in a creative task: The roles of the hippocampus and medial prefrontal cortex in facilitating self-generated learning

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Introduction

Creative idea generation plays an important role in promoting successful memory formation.

We examined the schema-linked interactions between medial prefrontal and medial temporal regions framework (SLIMM) during self-generated learning of creative ideas.

Method

29 participants

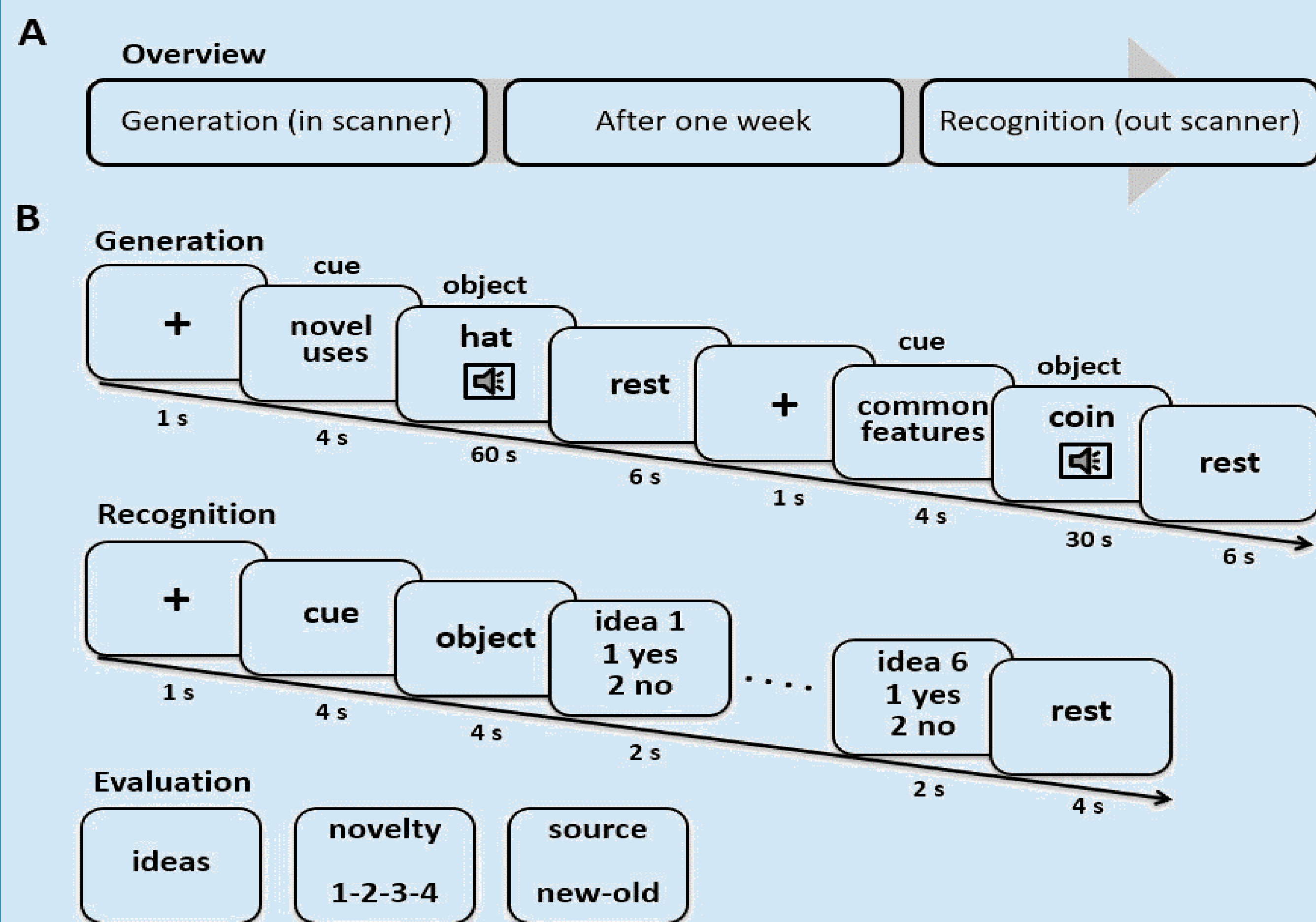
(16 females; mean age = 19.6, SD = 1.59)

18 Alternative Uses Task (AUT) trials

9 Object Characteristics Task (OCT) trials

Generation -> Recognition -> Evaluation

ROIs (HPC and mPFC) based on SLIMM

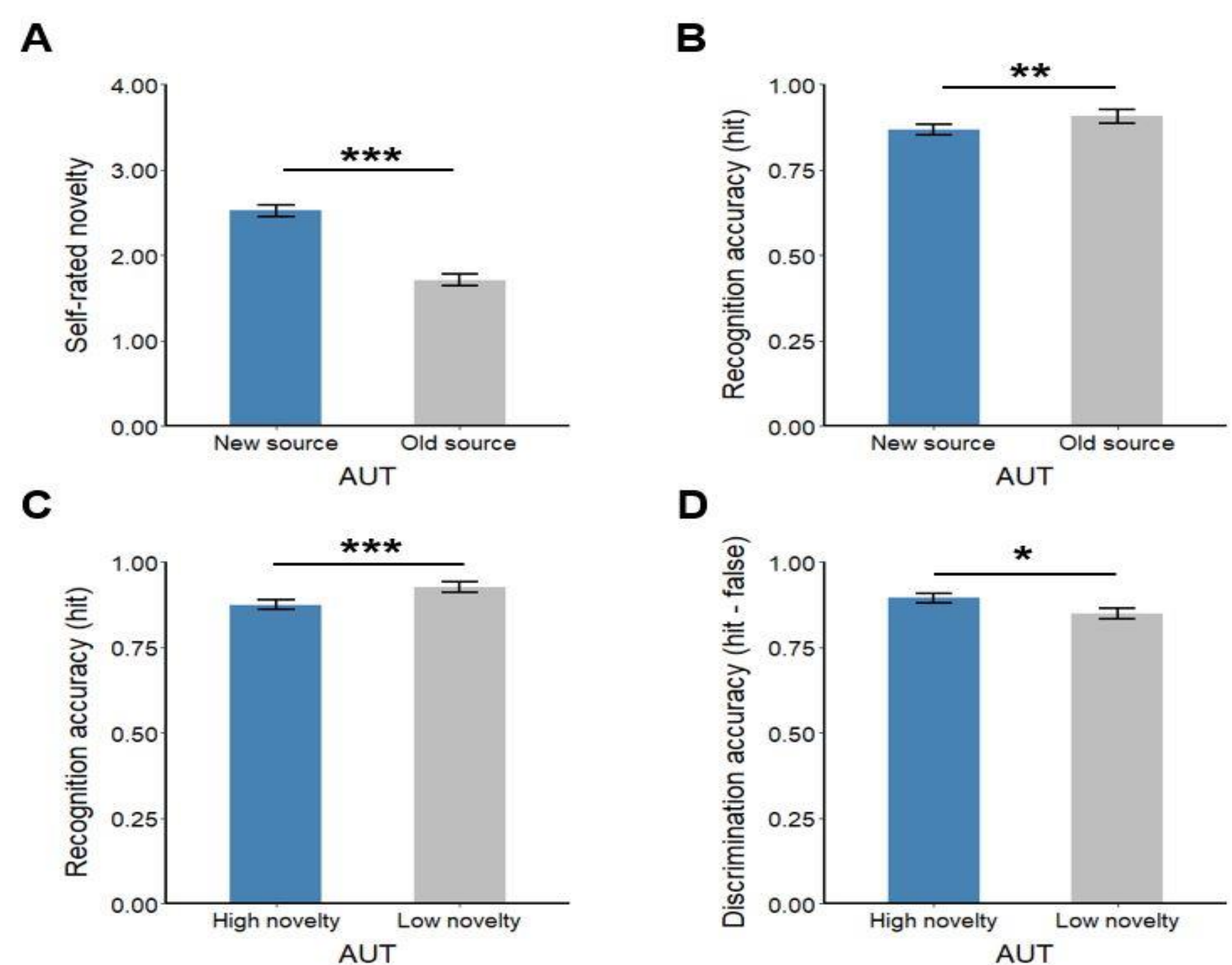


Discussion

Higher novelty is associated with higher discrimination accuracy, as well as decreased deactivations in the right HPC and left mPFC

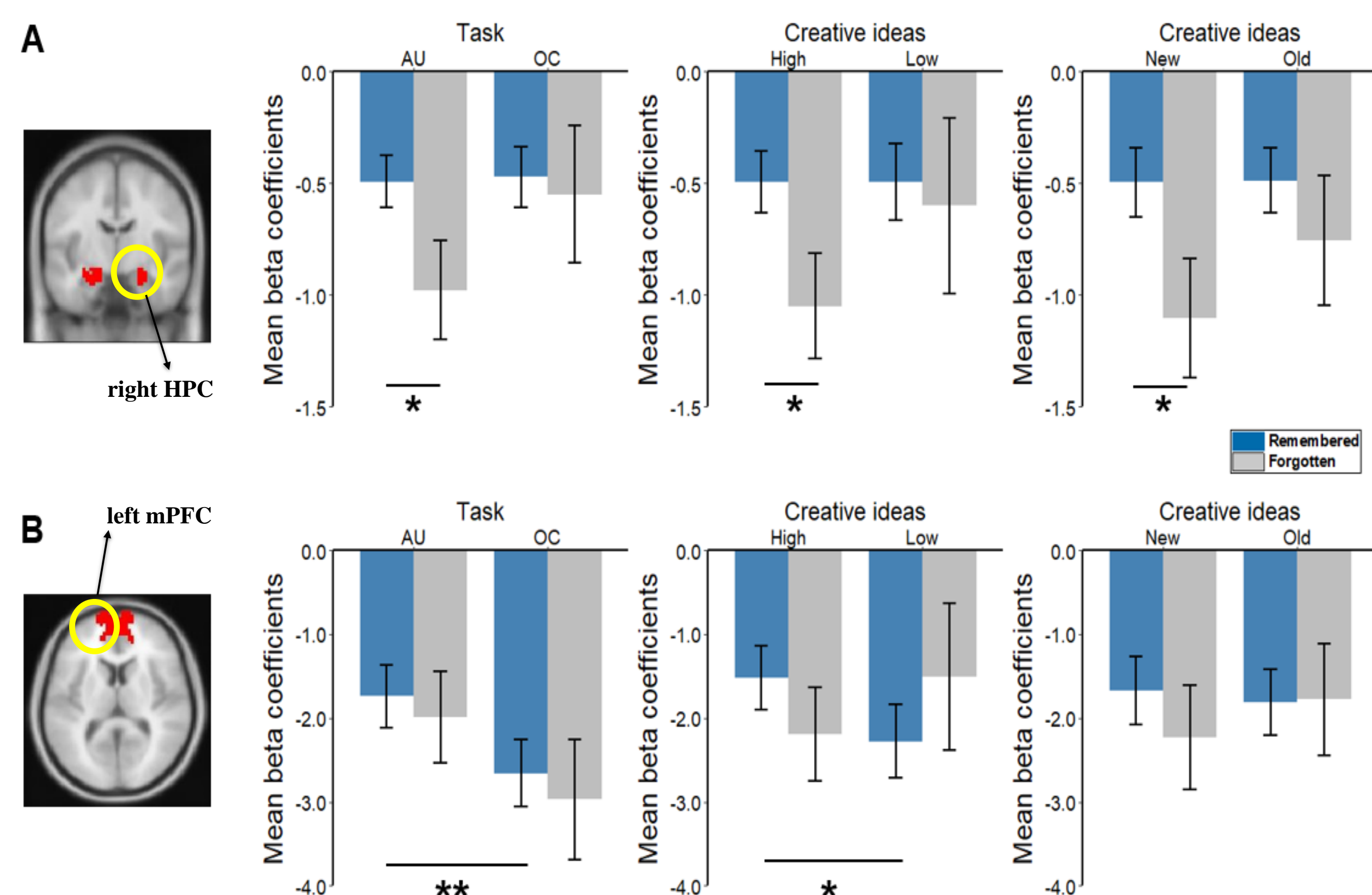
Our findings highlight the role of HPC and mPFC in facilitating self-generated learning.

Behavioral Results



Effects of creative ideation on self-rated novelty and memory accuracy. High novel ideas showed superior performances in discrimination accuracy, highlighting the effects of novelty.

Neural Results



Event-specific activation patterns within the hippocampus (HPC) and medial prefrontal cortex (mPFC). At the neural level, successful recognition of high novel relationships was associated with decreased deactivations in the right HPC and left mPFC during ideation.

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