



Talks by rising stars of neuroscience

Hippocampal replay reflects specific past experiences rather than a plan for subsequent choice

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Executing memory-guided behavior requires storage of information about experience and later recall of that information to inform choices. Awake hippocampal replay, when hippocampal neural ensembles briefly reactivate a representation related to prior experience, has been proposed to critically contribute to these memory-related processes. However, it remains unclear whether awake replay contributes to memory function by promoting the storage of past experiences, facilitating planning based on evaluation of those experiences, or both. We designed a dynamic spatial task that promotes replay before a memory-based choice and assessed how the content of replay related to past and future behavior. We found that replay content was decoupled from subsequent choice and instead was enriched for representations of previously rewarded locations and places that had not been visited recently, indicating a role in memory storage rather than in directly guiding subsequent behavior.

Event link:

<https://www.crowdcast.io/e/wwneurise/>