



Introduction



Prospective and retrospective representations of temporal structure across hippocampal and visual regions

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Neuroimaging Analyses

Visual cortex and hippocampus represented the current environment while it was on the screen and suppressed environments further away in the sequence. Hippocampus exhibited graded representations in both the forward and backward direction and had further reaching representations than visual cortex.



Hippocampal Suppression Predicts Behavior



Hierarchical Temporal Structure Representations



Visual Cortex Hippocampus





RSC and PPA hierarchically represented temporal structure, with successively further reaching representations into the past and the future in successively more anterior aspects of these regions.

Summary and Future Directions

Temporal structure is represented in the hippocampus and visual regions (1) bidirectionally, with graded representations into the past and future and (2) hierarchically, with further events represented in successively more anterior brain regions. Future work will investigate how representations of extended temporal structure are modulated by context and updated with new learning.

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Greater suppression of further environments in the hippocampus was related to increased reaction times when making judgements about further steps into the future.

References

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