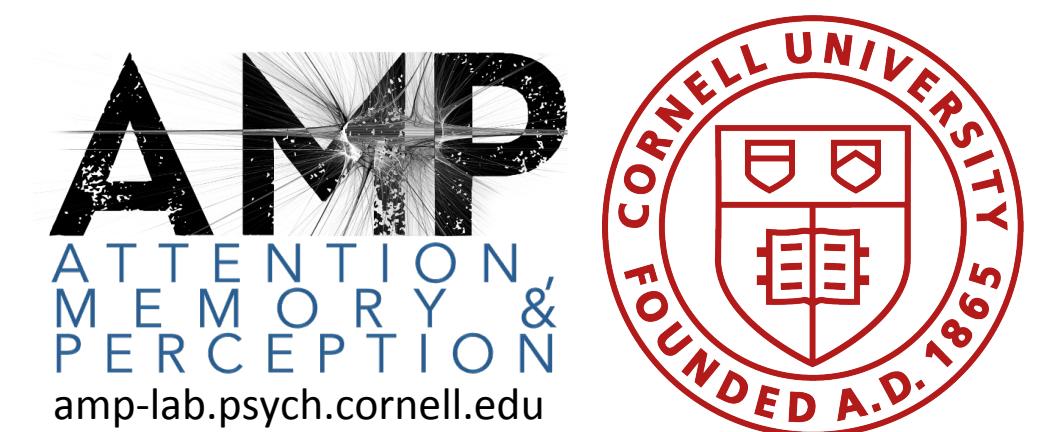


Hippocampal Connectivity with Regions Involved in Processing Internal and External Information during Event Perception

Karen Sasmita, Ruiyi Chen, & Khena M. Swallow | Department of Psychology & Cognitive Science, Cornell University | ss3837@cornell.edu [Karen_sasmita](#)



Event Segmentation Theory: Event models guide event perception¹

- Active representations of the current situation (event models) may guide event perception via predictive processing.
- To accurately reflect the current situation, event models need to be updated when the event changes (i.e., at event boundaries).
- Event model updating involves integrating information from the external world with internal knowledge of how events typically unfold.

Research question

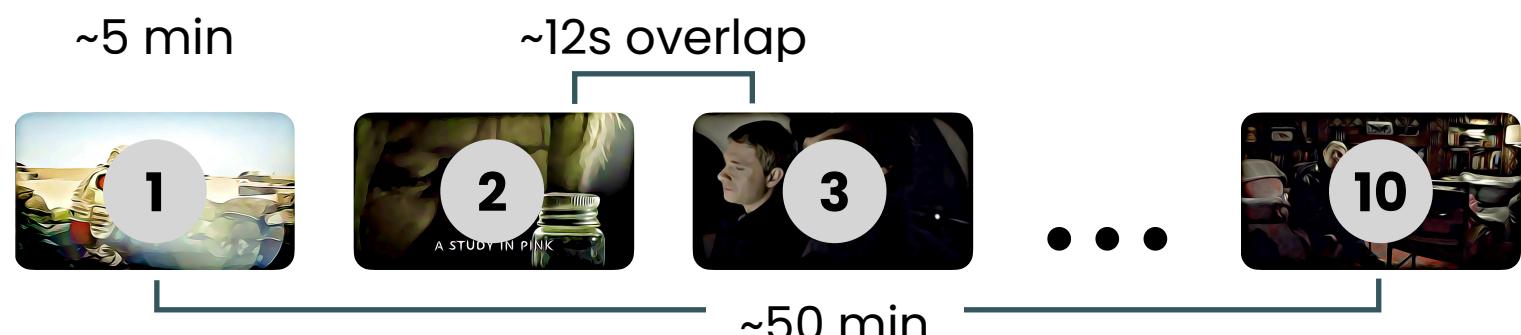
How does connectivity between region associated with event model updating² (**hippocampus**) & networks³ associated with more internal (**default A**) or external (**visual**) information processing change when events change?

Sherlock imaging dataset⁴

- 16 participants viewed BBC Sherlock ep.1 in scanner.
- Previously coded for scene changes⁵.

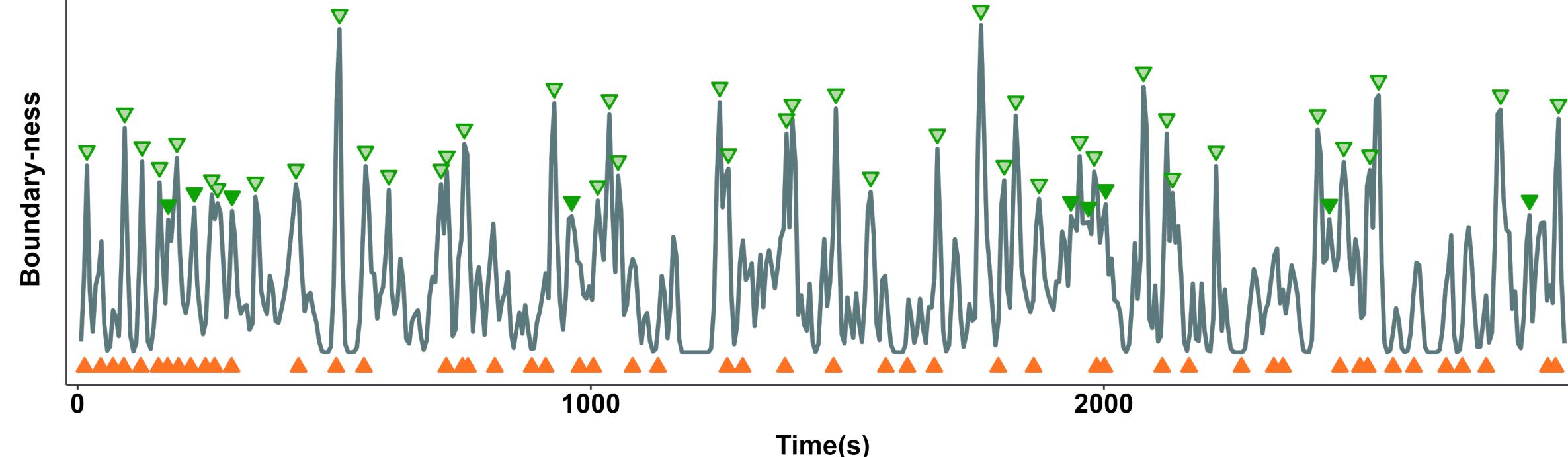
Segmentation task

- 11 participants⁶ marked coarse event boundaries.



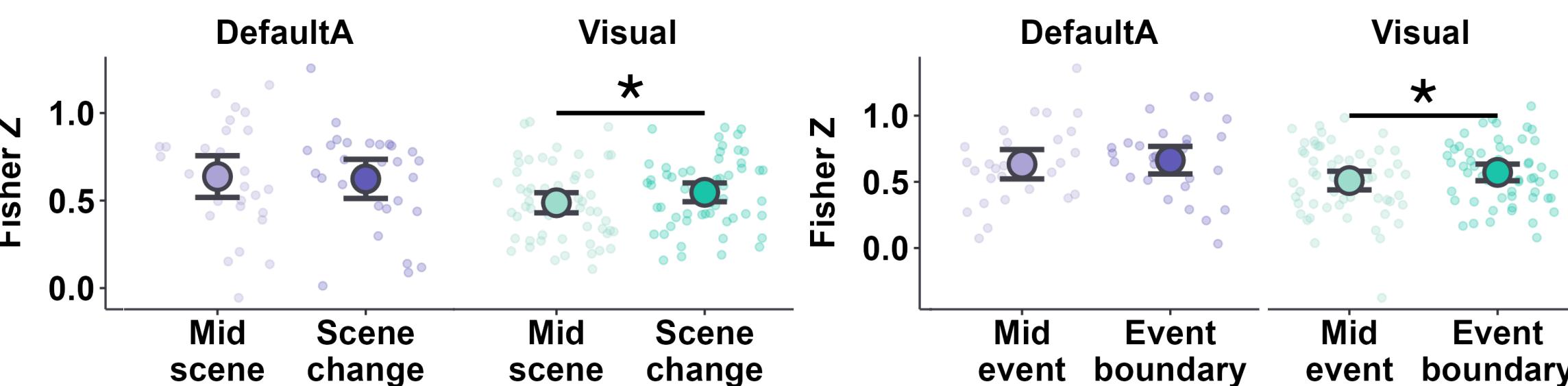
"Press the spacebar when one event ends and another begins."

Scene changes do not always correspond with event boundaries



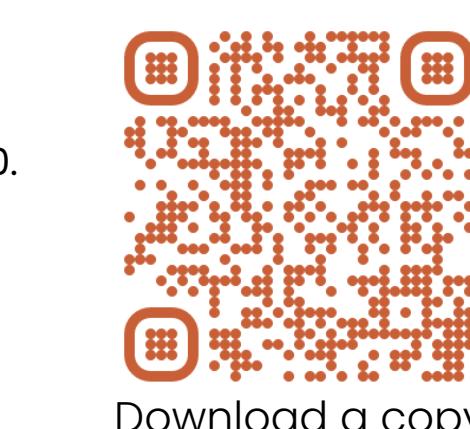
- ▼ Normative event boundaries⁶: highest n-peaks, n = mean(button presses).
- ▼ Event boundaries: highest m-peaks, m = no. of scene changes.
- ▲ Scene changes.

Increase in hippocampal connectivity to external but not internal networks

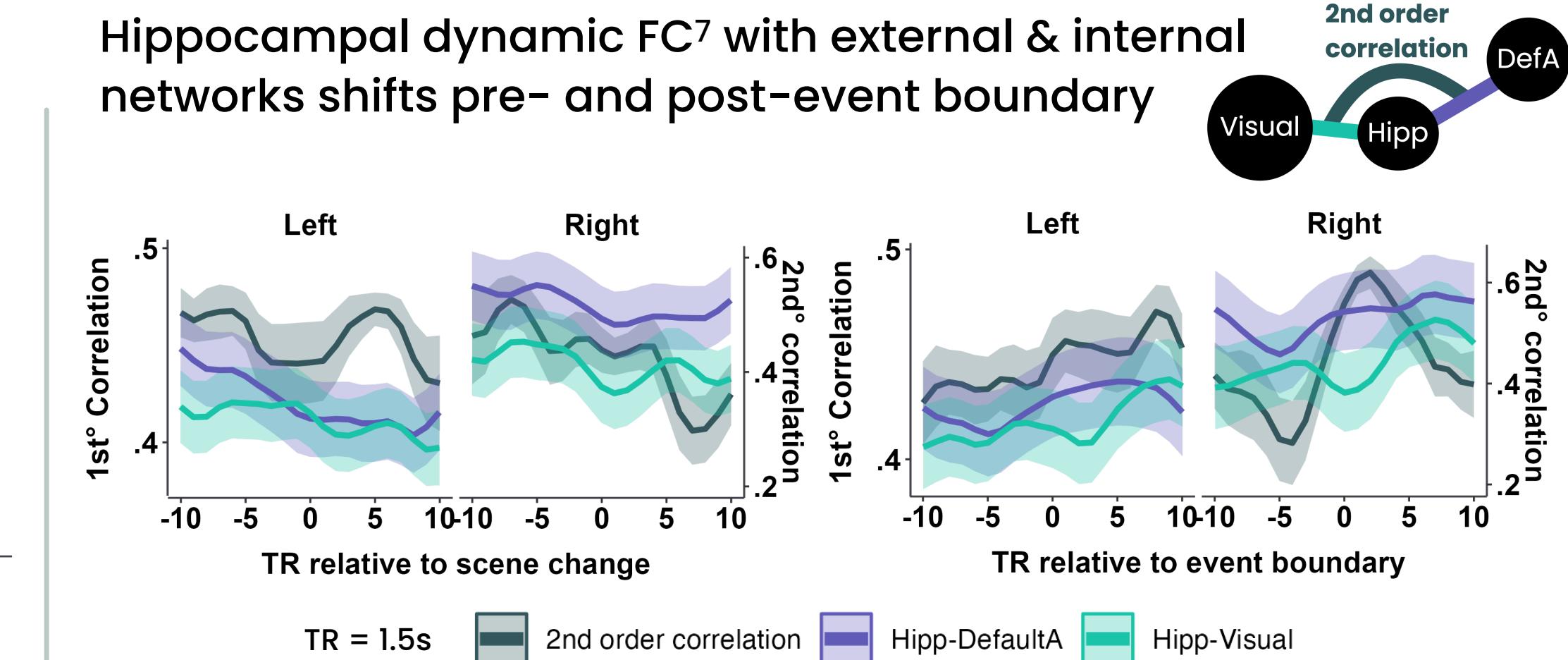


References

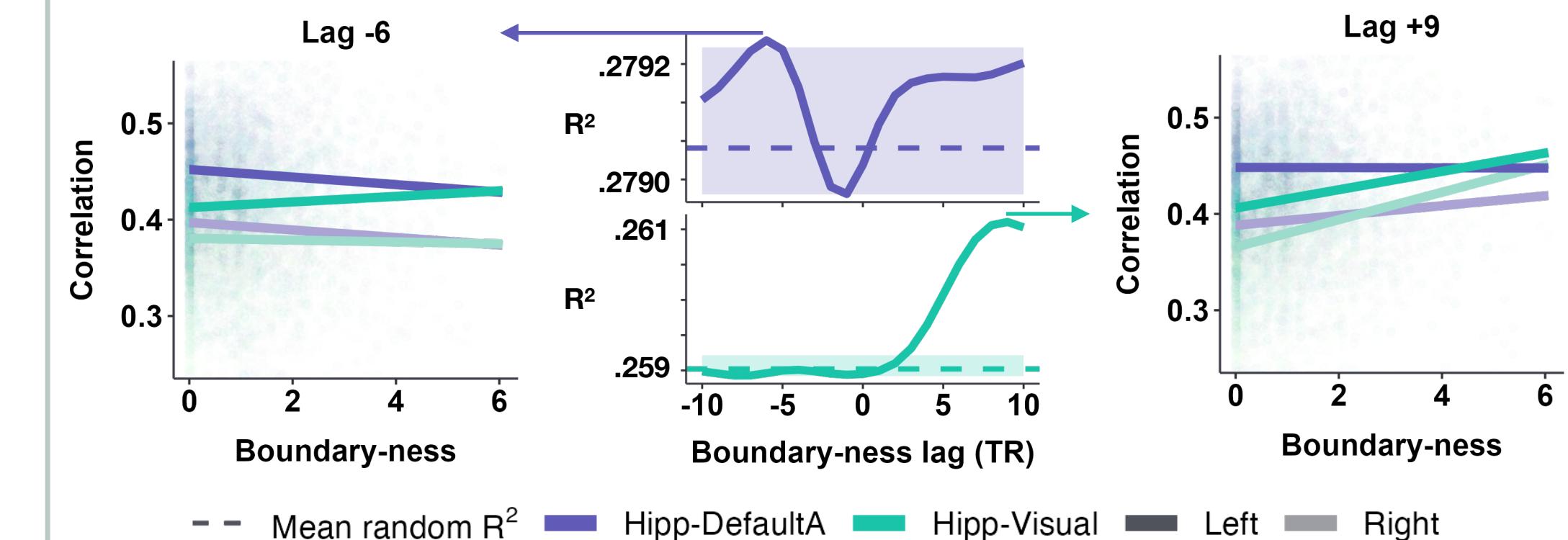
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Hippocampal dynamic FC⁷ with external & internal networks shifts pre- and post-event boundary



Boundary-ness optimally explains hippocampal dynamic FC with external and internal networks at distinct timepoints



Conclusion

The online processing of event boundaries involves **dynamic shifts** between **segregation and integration** of **internal and external** sources of information by the hippocampus. Connectivity changes around event boundaries are not identical to those around scene changes.