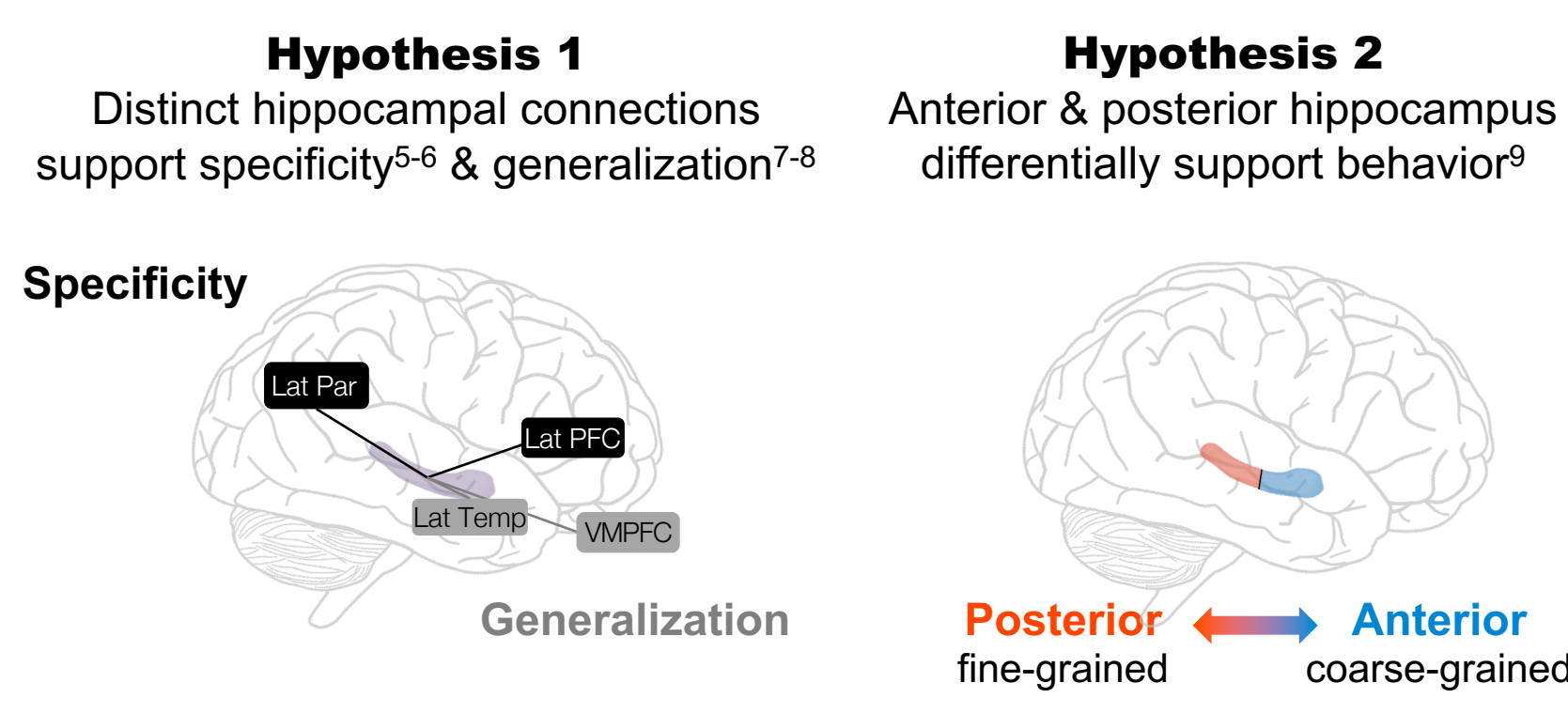


The Contribution of Anterior and Posterior Hippocampal Connections to Individual Differences in Memory Specificity and Generalization

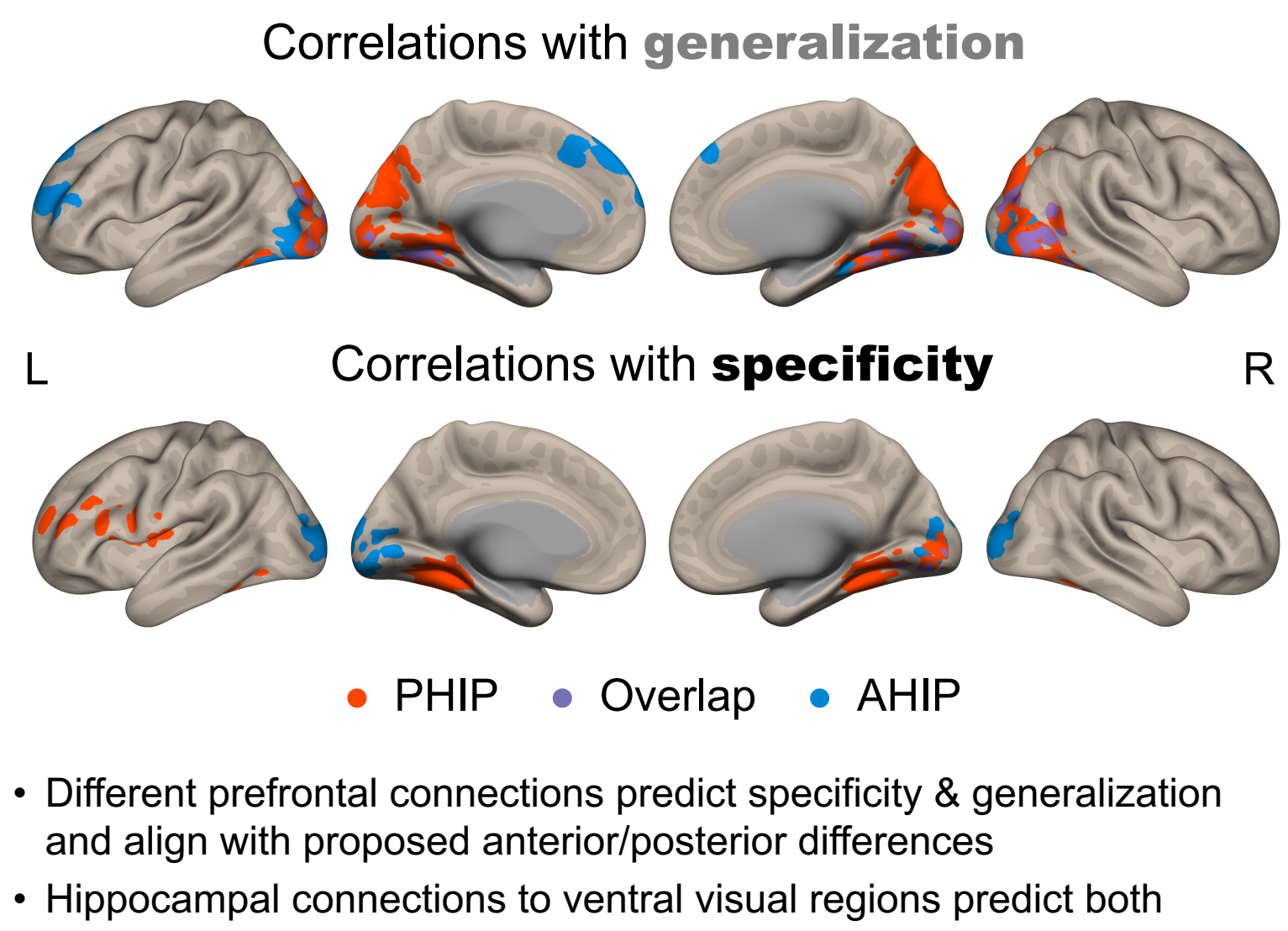
Lea Frank & Dasa Zeithamova

Background

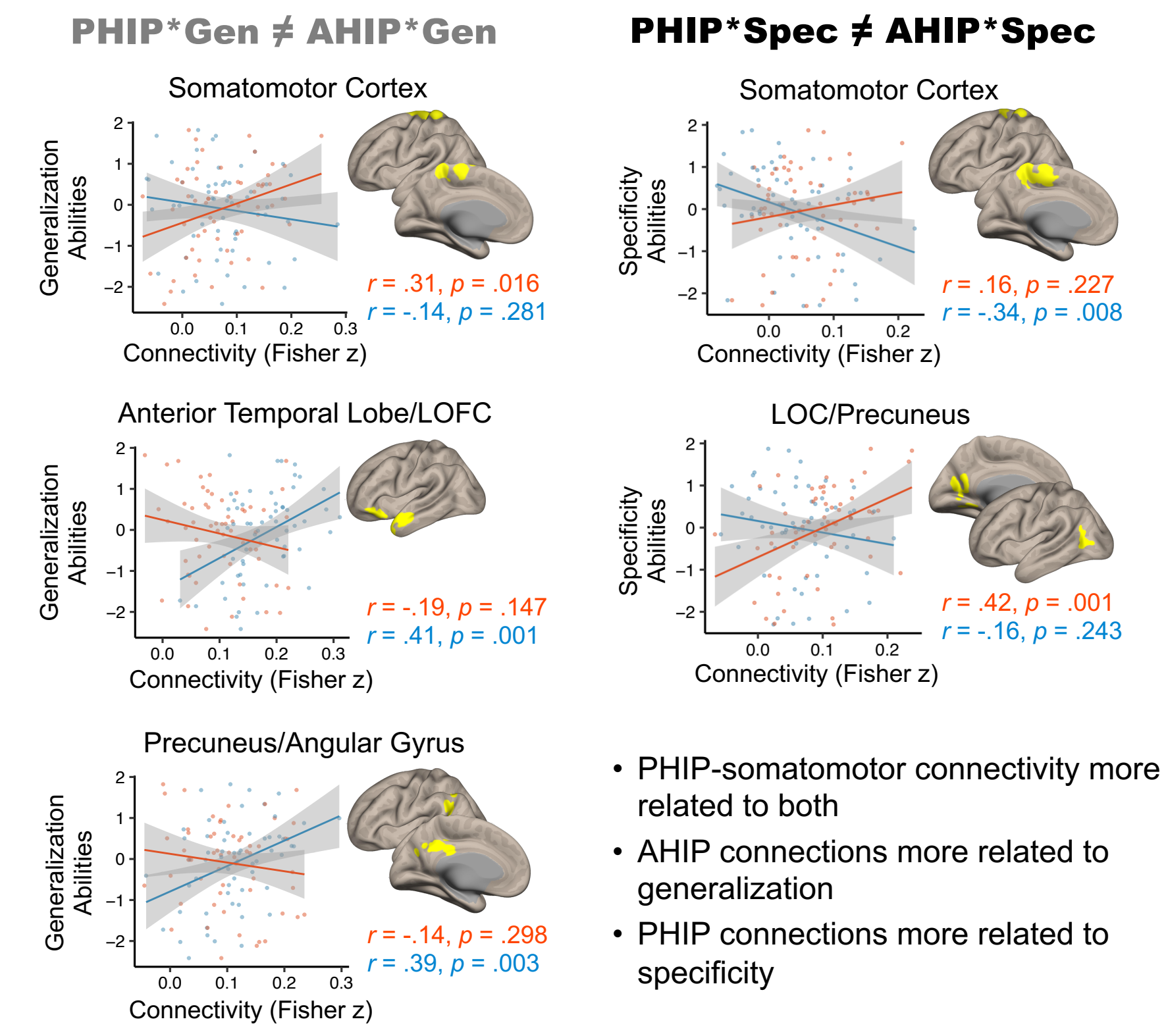
- Memory allows us to remember specific details of our experiences (**memory specificity**) and link across them to form new knowledge (**generalization**)
- Hippocampus supports both types of learning¹⁻⁴, but how is unclear



Specificity & generalization predicted by distinct and overlapping connections



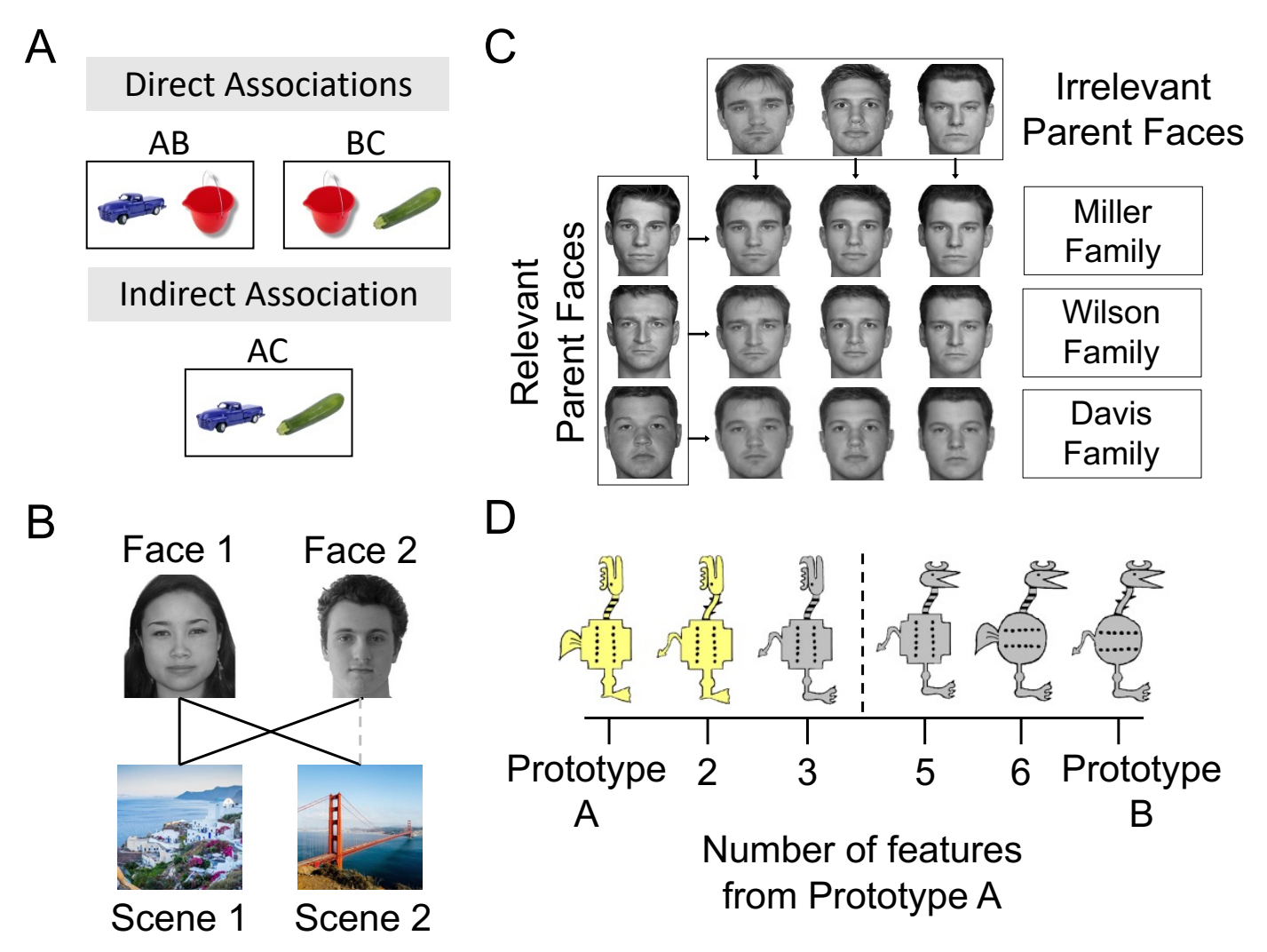
Anterior & posterior hippocampal connections differ in relation to behavior



Measuring individual differences in memory abilities & hippocampal connectivity

Days 1 & 2: Memory assessments (n = 151)

Day 3: Resting-state fMRI (n = 58)

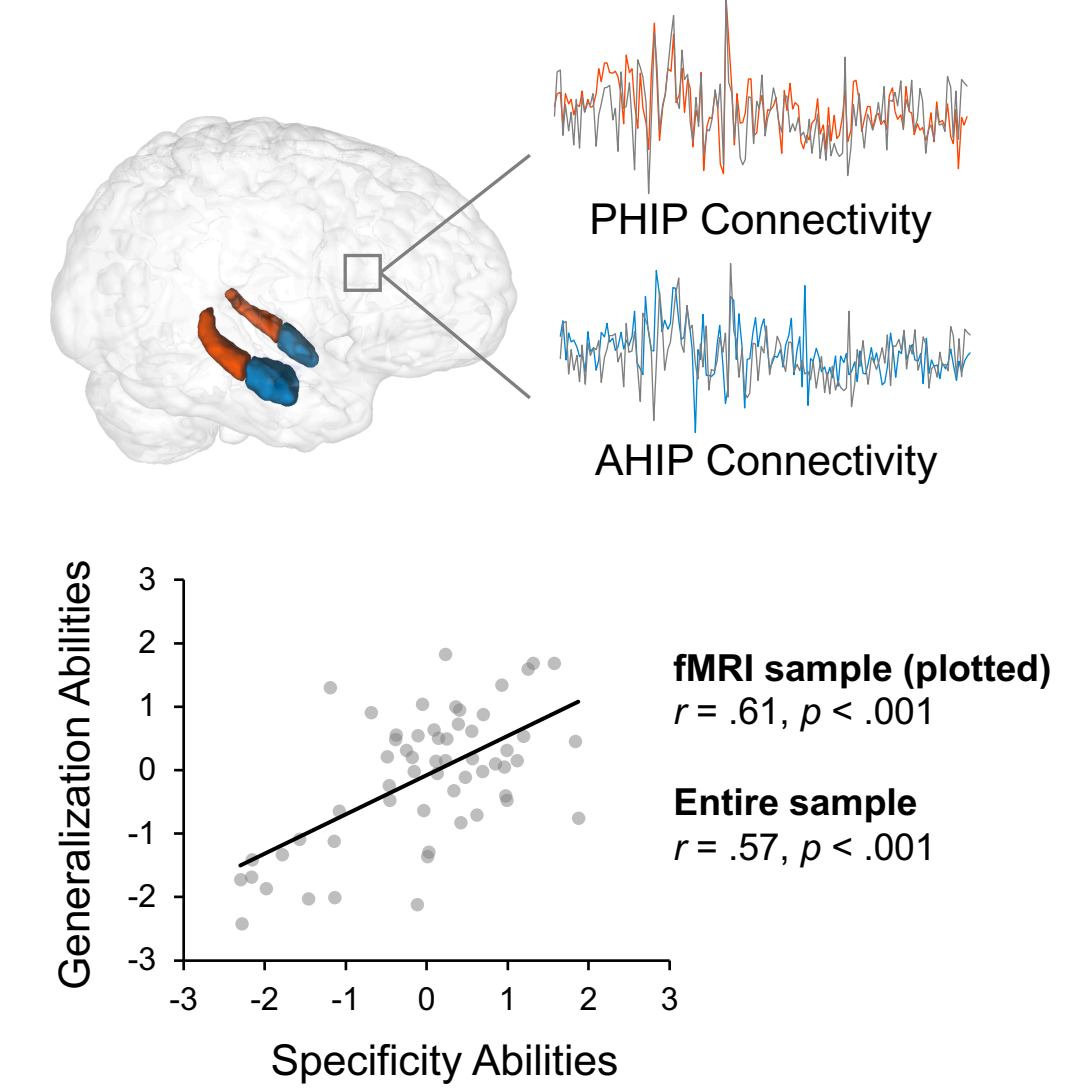


Generalization PCA

	Comp 1
(A) Associative inference	0.79
(B) Acquired equivalence	0.61
(C) Category learning (faces)	0.61
(D) Category learning (animals)	0.49

Specificity PCA

	Comp 1
Source memory	0.38
Face recognition	0.42
Color-object pairs	0.67
Object recognition	0.81
Pattern separation	0.70
Word pairs	0.65
Word recall	0.77



Summary

- Distinct hippocampal-prefrontal connections relate to memory specificity and generalization, while hippocampal-posterior connections relate to both
- Anterior hippocampal connections more related to generalization and posterior hippocampal connections more related to specificity, but dissociations are not clear-cut

References & Acknowledgements

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