

A Hierarchical Bayesian Approach to Inferring Mnemonic Status from the Brain

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Presentation Abstract Summary One goal of cognitive science is to build theories of mental function that predict individual behavior. In this project we focus on predicting which word pairs in a list will be remembered at some point in the future. Contemporary approaches to this problem primarily utilize behavioral measures such as performance on quiz questions or judgements of learning. Our central hypothesis is that better prediction will come by jointly modeling both neural and behavioral data mediated by a computational cognitive model which captures the dynamics of memory retrieval over time. We lay out a framework theory for combining neural and behavioral data and present some preliminary data and simulations supportive of our approach.

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