Curriculum Effects in Multi-Schema Learning

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Curriculum A A A B B B vs A B A B A B

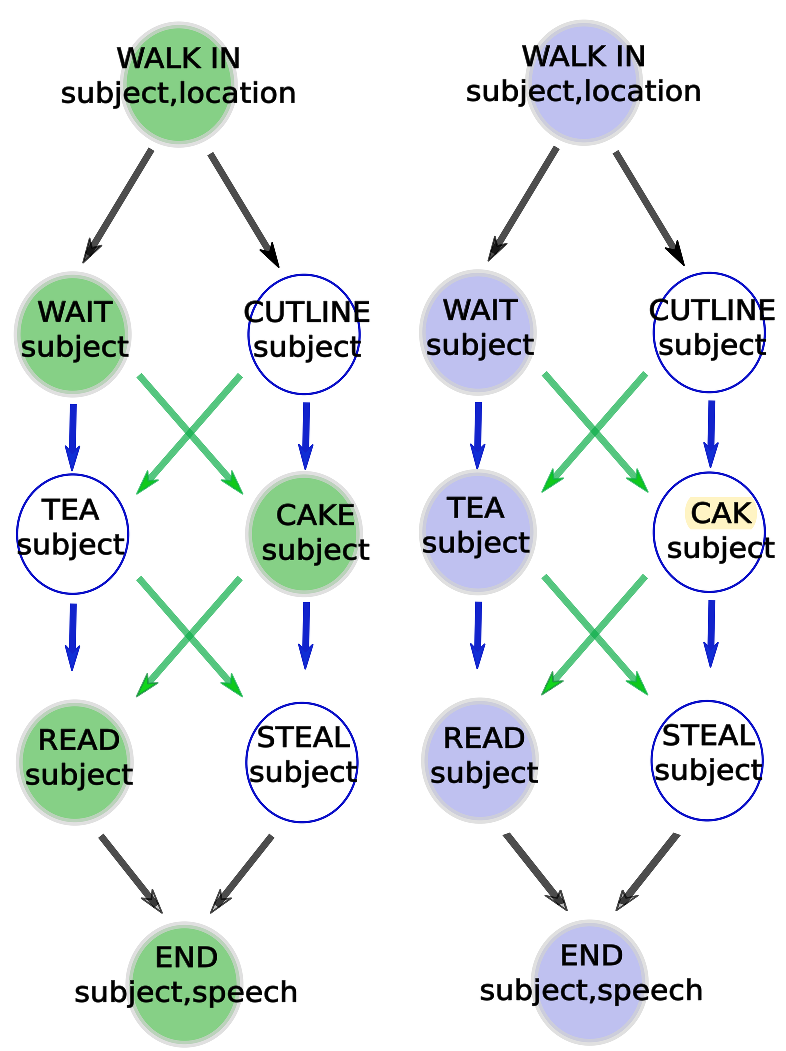
- The benefits of interleaved study has received long standing support [1]. However, recent experiments show this benefit is not ubiquitous but depends on category structure [2]. So far curriculum effects have focused exclusively on category learning. Here we investigate curriculum effects in the context of a statistical learning prediction task.

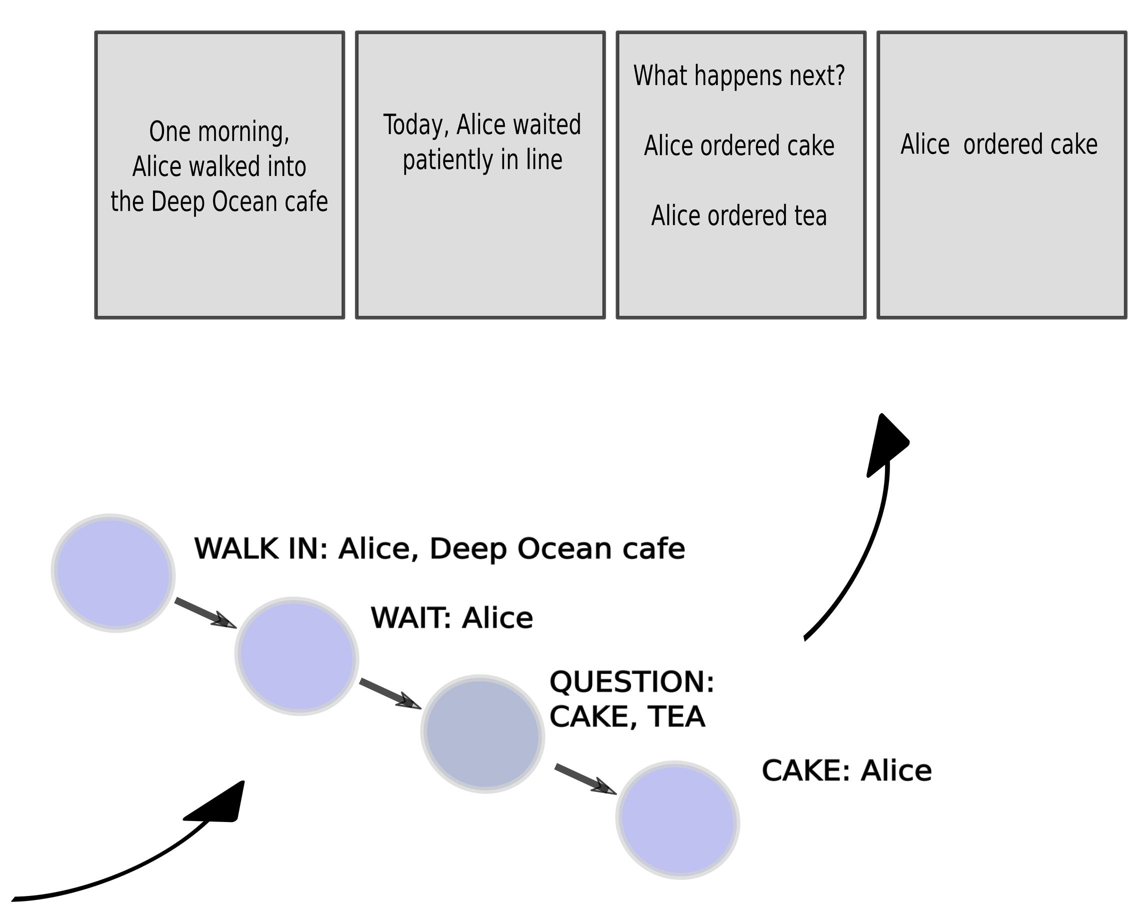
Event cognition theory

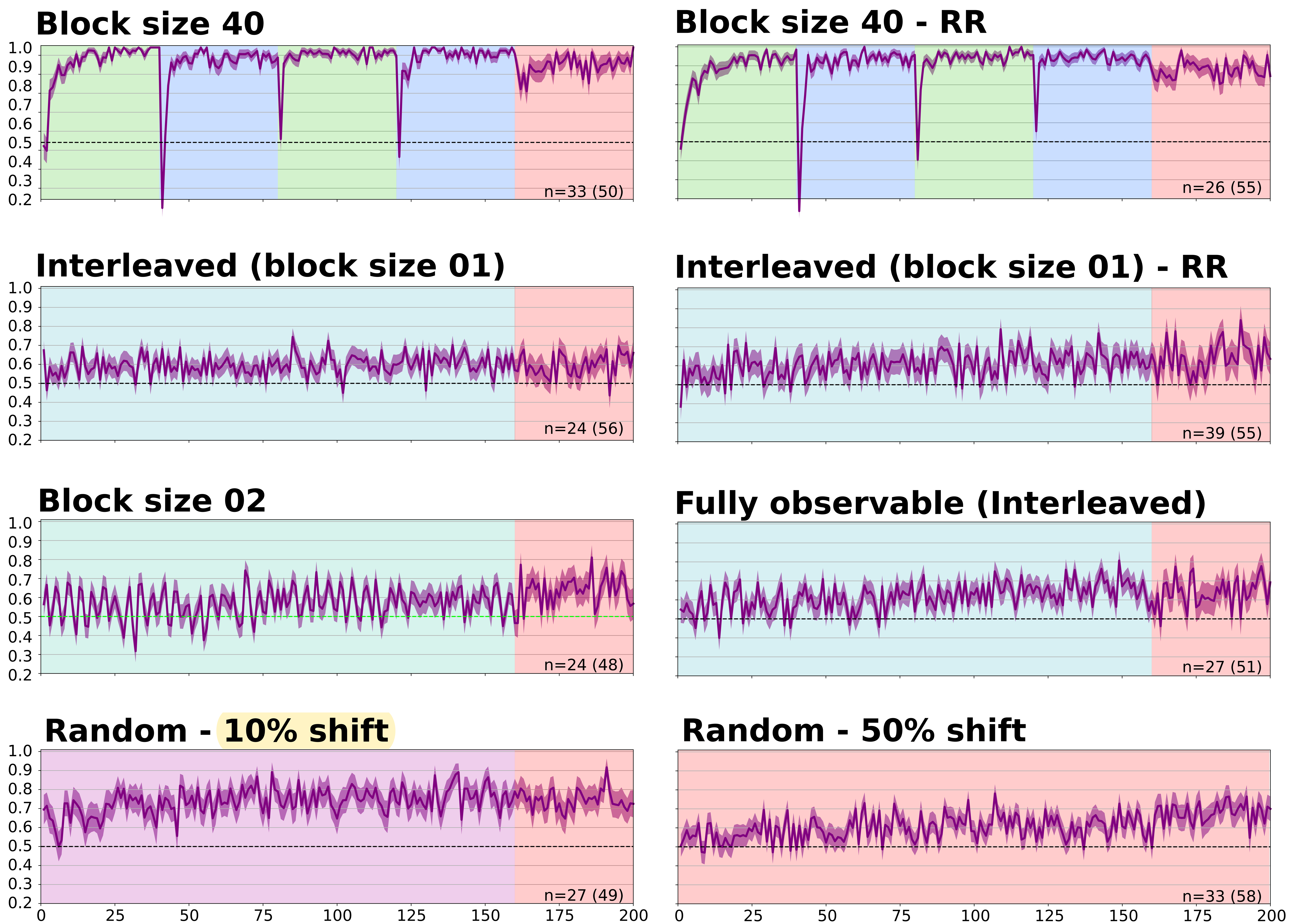
- How do we learn and use models of the environment for prediction? Event cognition proposes that the mind segments continuous experiences into discrete events [3] so that the appropriate event model (i.e. schema) can be brought to bear prediction [4]. Because the driving learning signal of event segmentation is prediction error, which can only occur if there is a prediction or strong expectation, we hypothesize that event learning would also benefit from blocked curricula.

Approach:

* 2AFC prediction paradigm
* algorithmically generated narratives
* manipulate curriculum
* measure learning and generalization







Discussion & Future directions

- Here we establish a behavioral paradigm for studying curriculum effects in event cognition. We have shown that unlike the majority of the category learning literature, learning can only occur in environments with temporal autocorrelation (i.e. blocked curricula). To better understand why this is the case we are developing computationally explicit hypotheses about how and when information from different contexts interfere and are testing these hypotheses using recurrent neural network archiectures.

References
[1] Schmidt & Bjork, 1992
[2] Carvalho & Goldsone, 2017
[3] Kurby & Zacks, 2007
[4] Franklin et al., 2019

This project was supported by ONR MURI N00014-17-1-2961