

Removing irrelevant information from working memory: domain-specific prioritization takes time

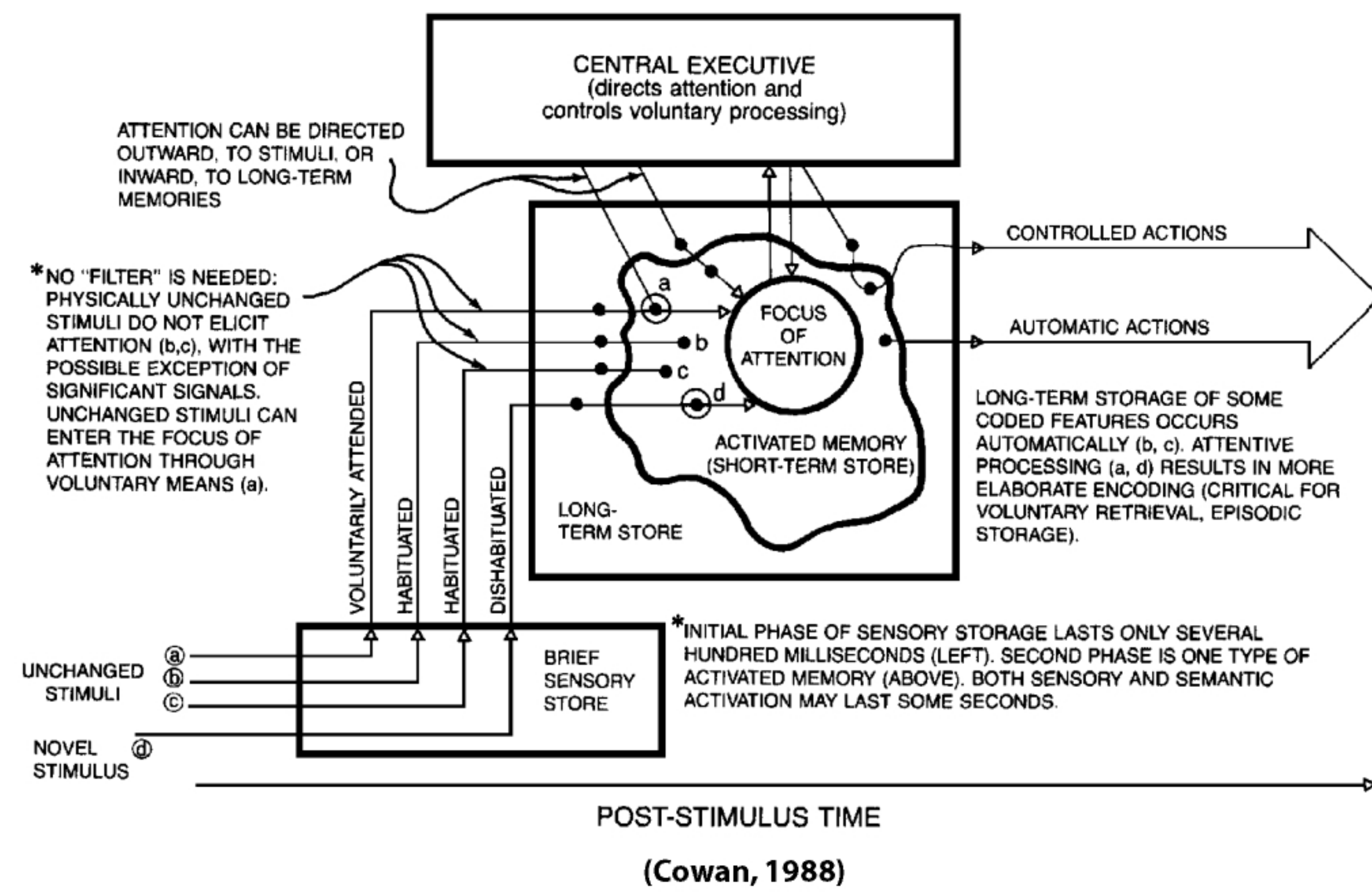
Andrew T. Drysdale¹, Jarrod A. Lewis-Peacock¹, Klaus Oberauer² and Bradley R. Postle¹

adrysdale@wisc.edu PO-STL-AB

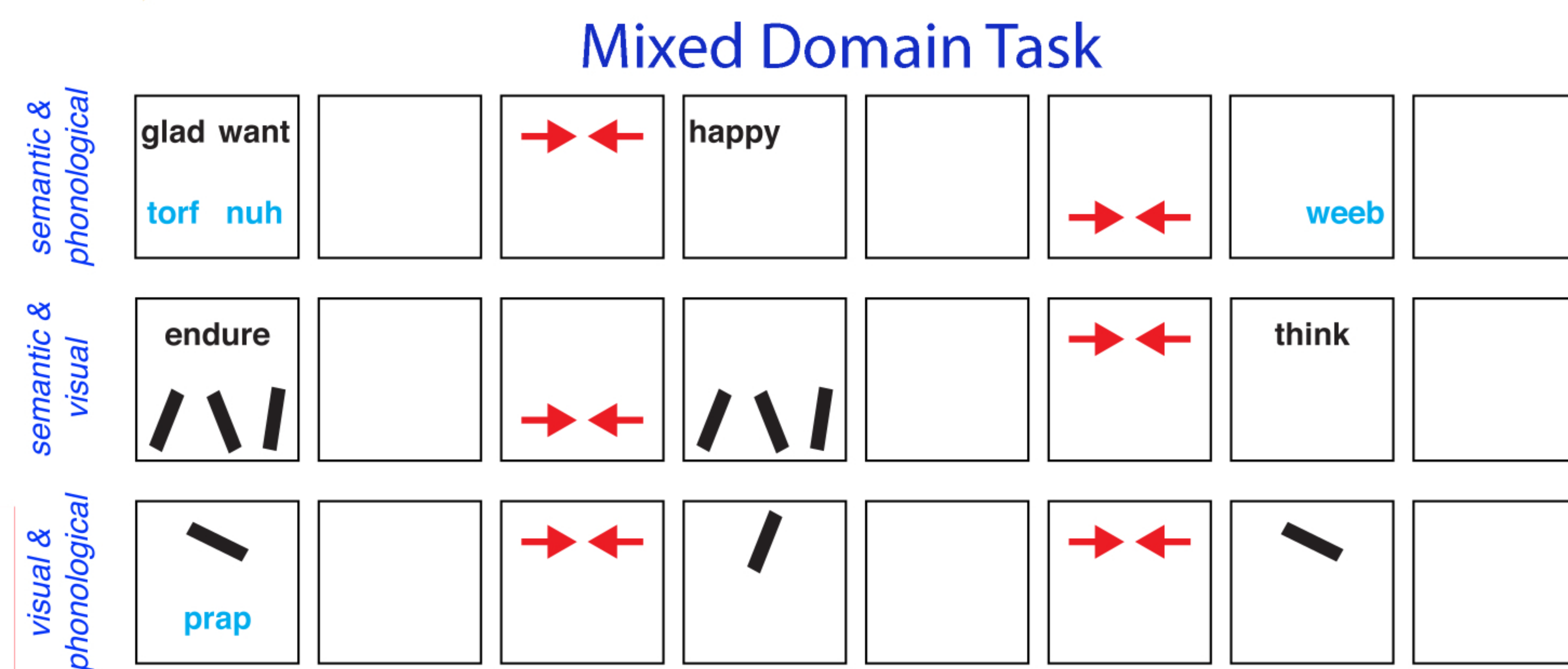
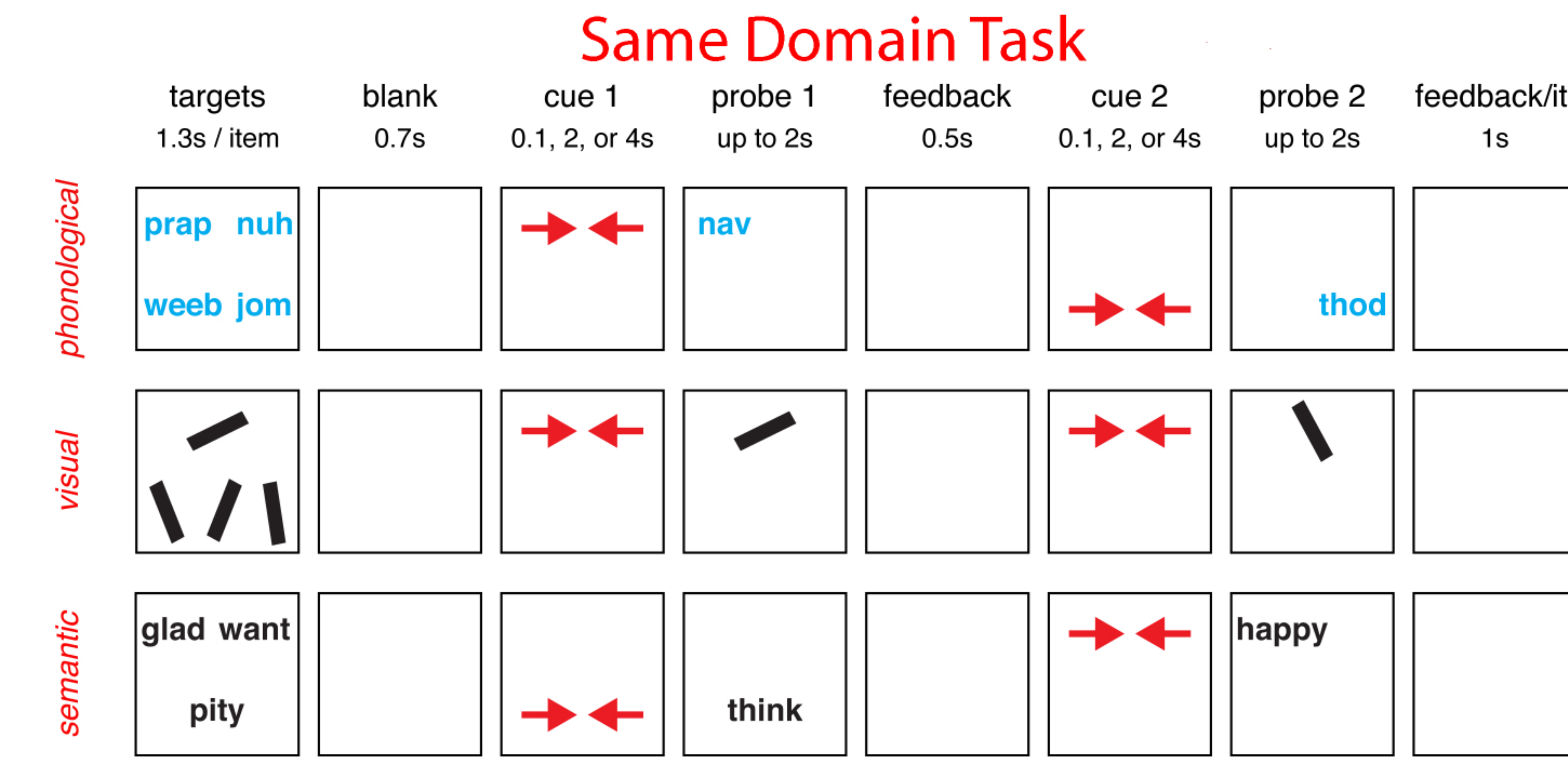
¹Department of Psychology, University of Wisconsin-Madison
²Department of Psychology, University of Zurich

1 Theoretical Framework

- Working memory emerges from an interaction between attention and activated long-term memory stores (Cowan, 1995; Postle, 2006).
- This model has motivated cognitive research demonstrating behavioral evidence for differentiable states of working memory (e.g., Oberauer, 2001; 2002; 2005)

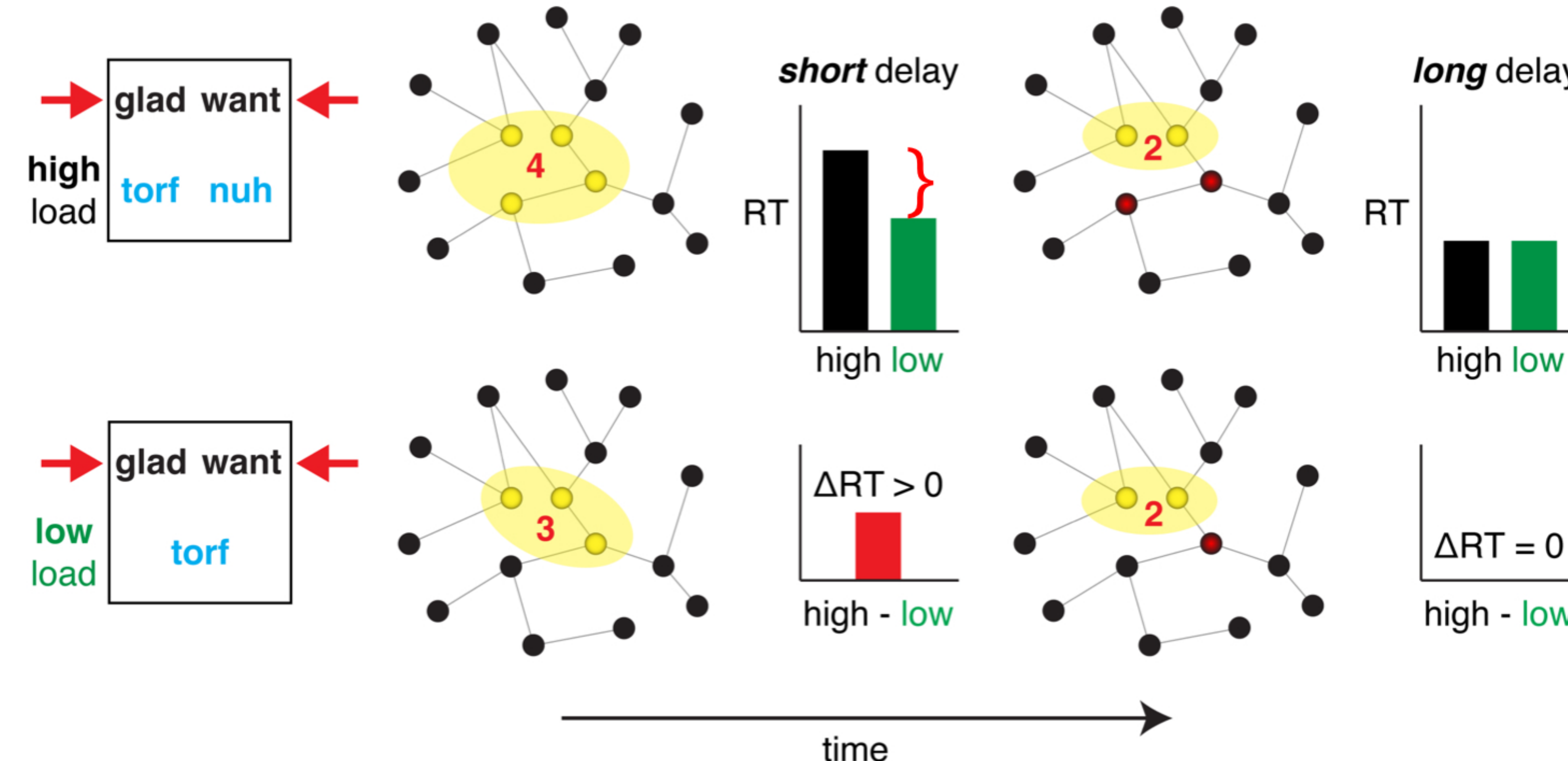


3 Delayed Recognition w/ Prioritization

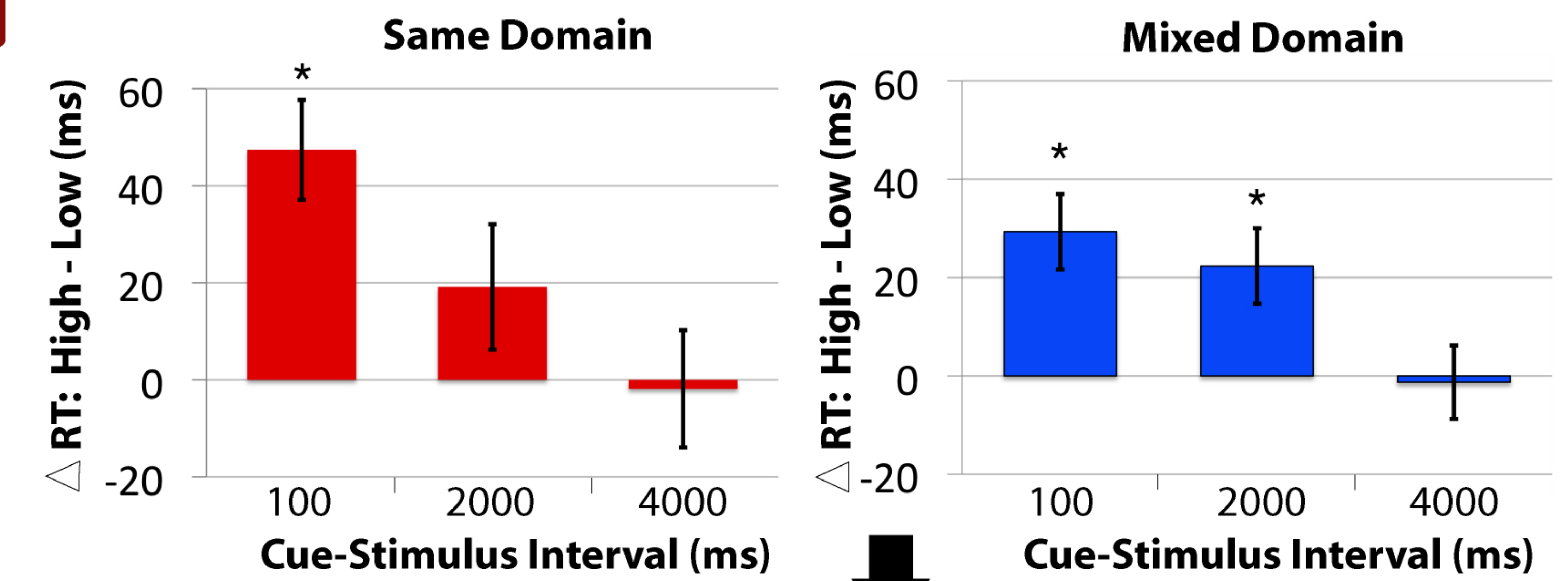


4 Quantifying Prioritization of WM

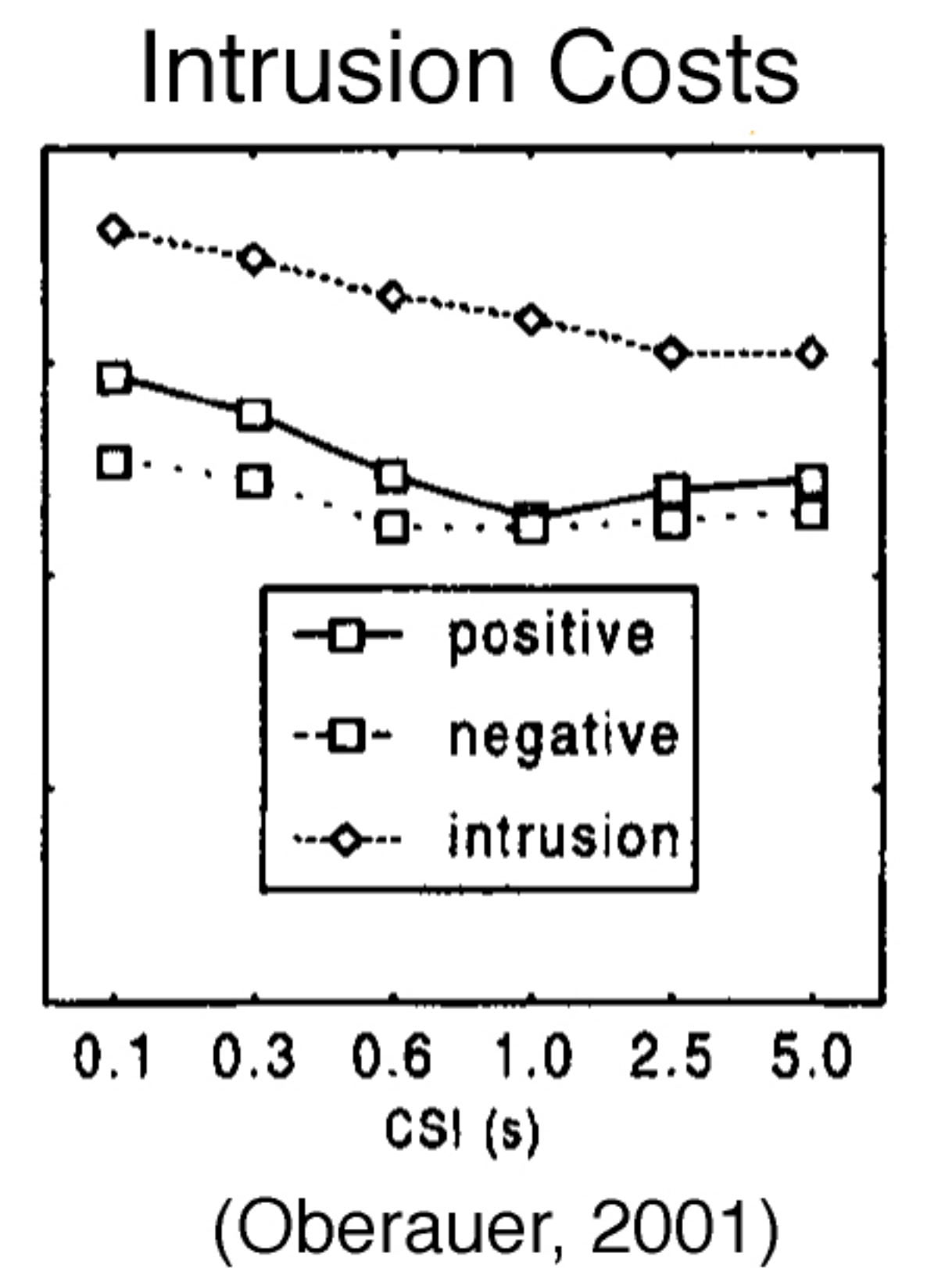
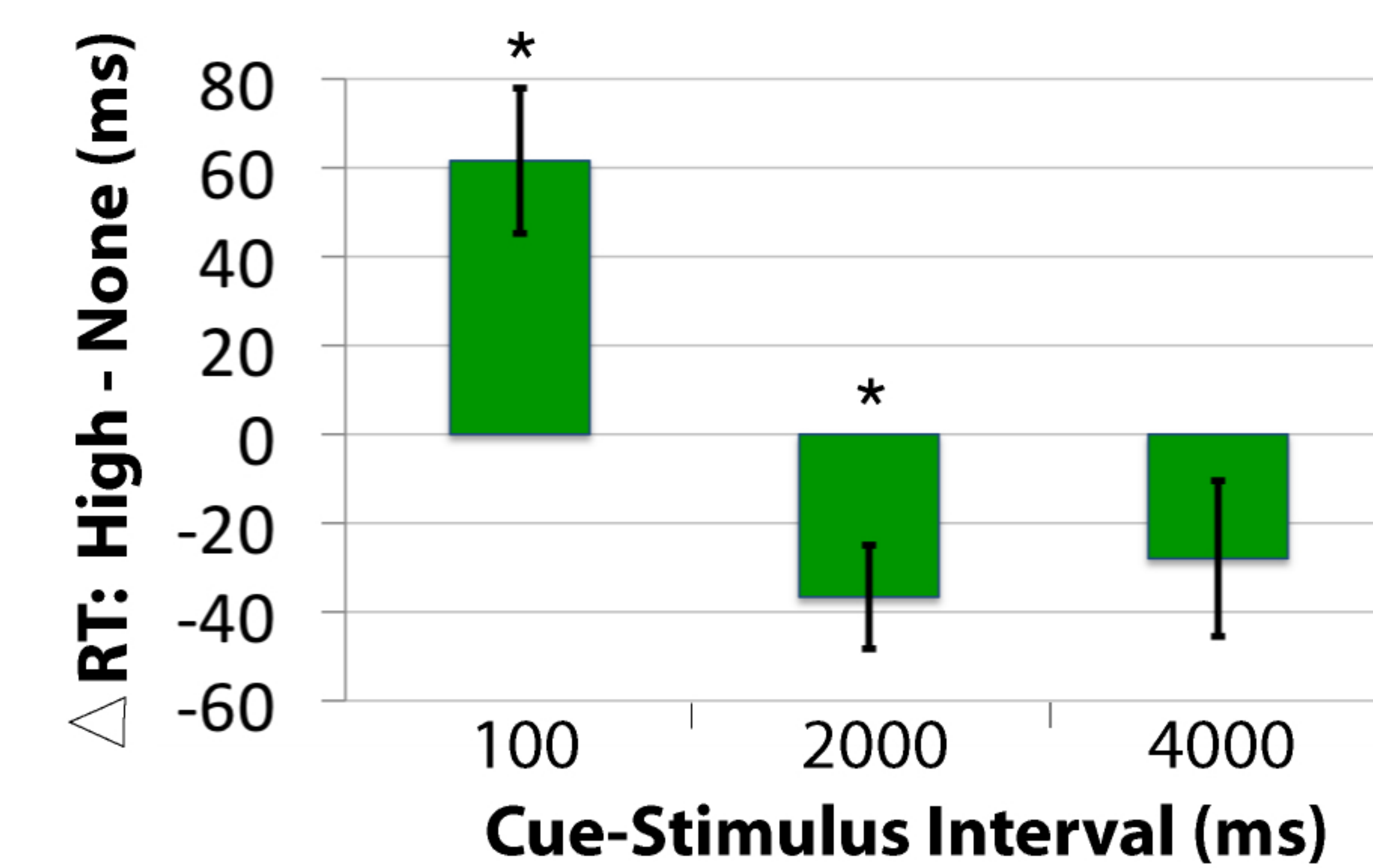
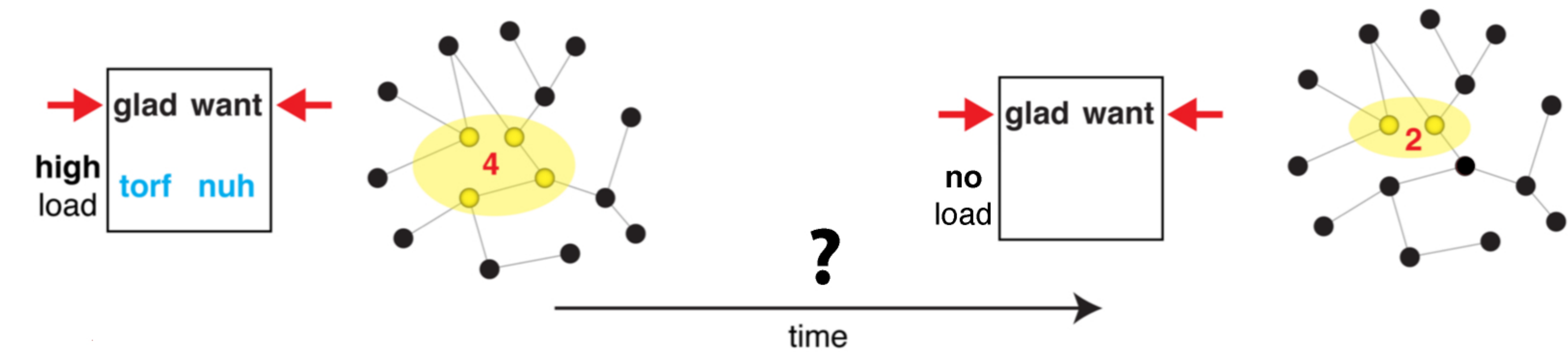
- The difference between reaction times for high and low irrelevant load was used to quantify the time needed to prioritize information.



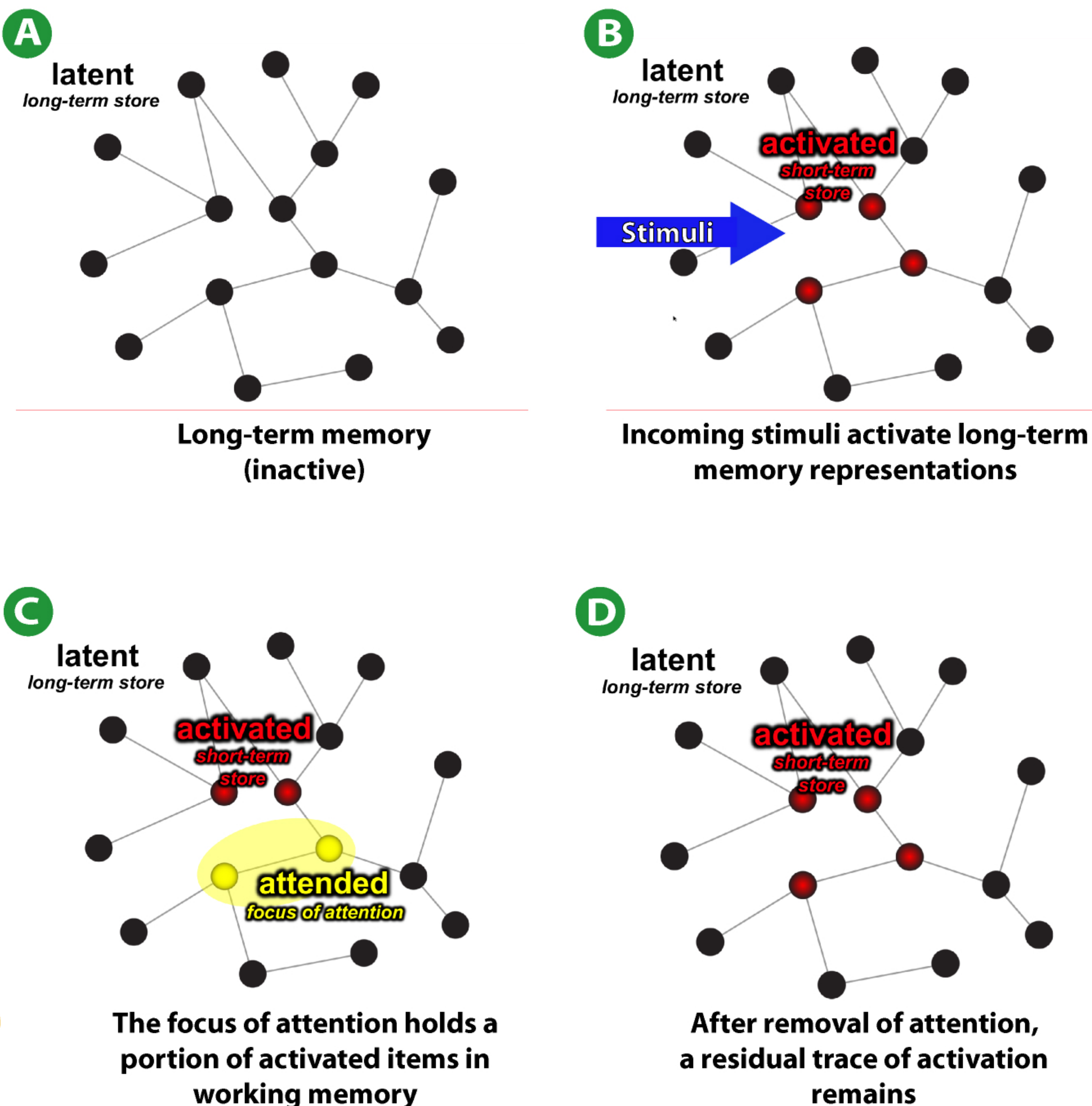
5 Results: Prioritizing WM Takes Time



- If information is deprioritized but still remembered, does it exhibit any residual behavioral cost?



2 Distinct States of Memory



6 Conclusions and Future Directions

- Our data show that task irrelevant information is deprioritized over a relatively short period of time, even when stimuli come from distinct domains of information.
- Although still remembered, residual information exerts no effect on reaction times after 4s unless it is brought back into the focus of attention.
- After showing successful prioritization across various domains of information, we looked for neural correlates of this process using fMRI (see adjacent poster by Lewis-Peacock et al.).