

Background



The Storyteller
Philip de Laszlo (1891)

Stories can take hold of the human mind, carrying us away from our immediate surroundings and immersing us in alternate worlds^{1,2}.

Stories also have lasting consequences such as increasing the memorability of episodes³ and the malleability of long-standing beliefs¹.

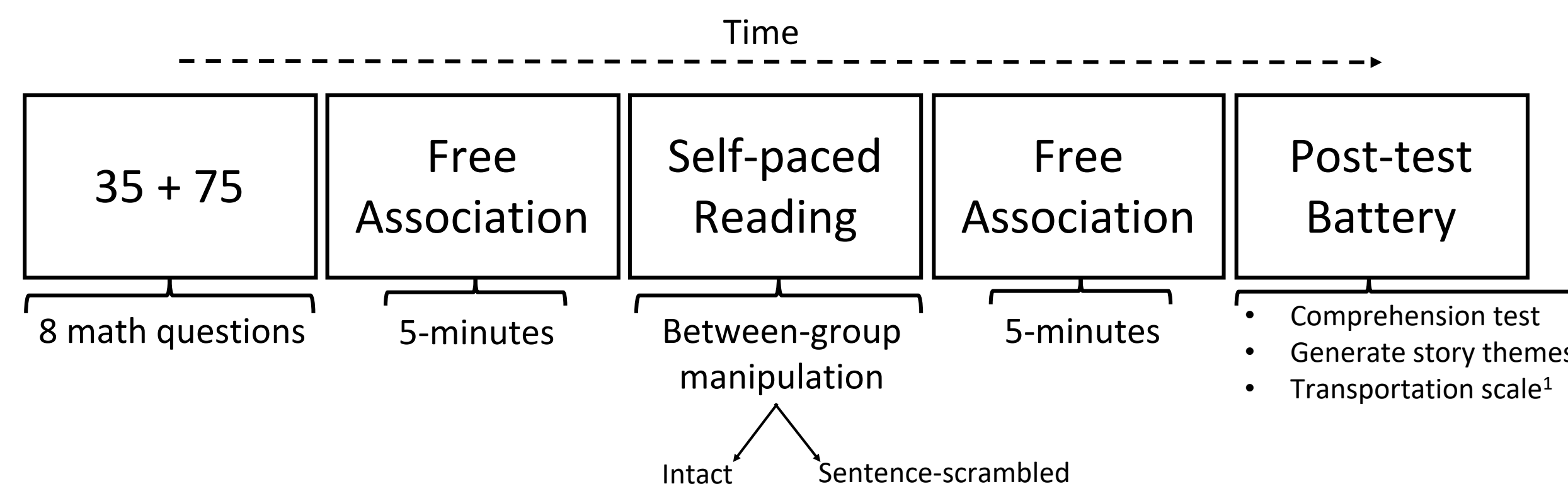
Little is known about *how* stories to exert their such a lasting influence over our mind, particularly after they have already ended.

Experimental Design

Questions:

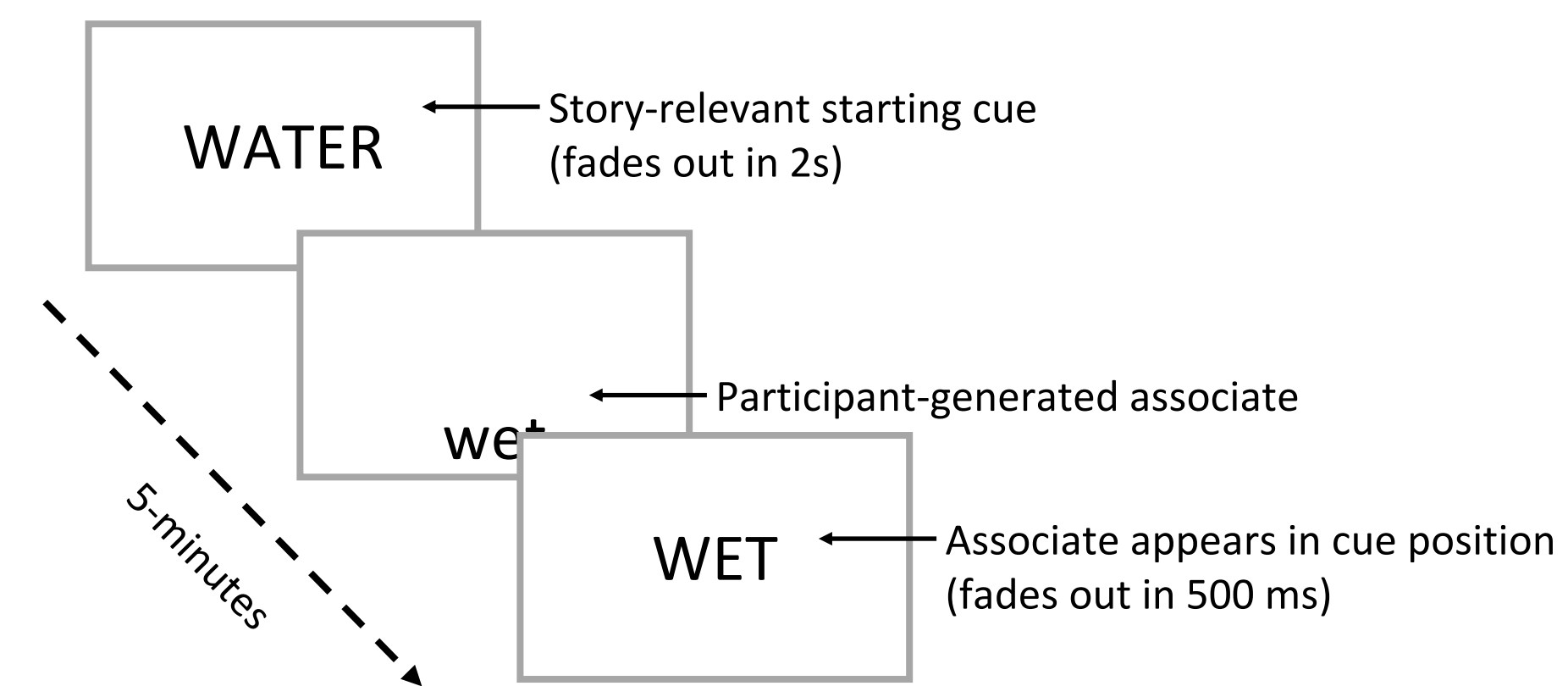
- I. Do stories have a lasting influence on our spontaneous thought?
- II. What lasts, for how long, and what are the underlying processes?

Paradigm: "Assorted Cognitive Tasks"

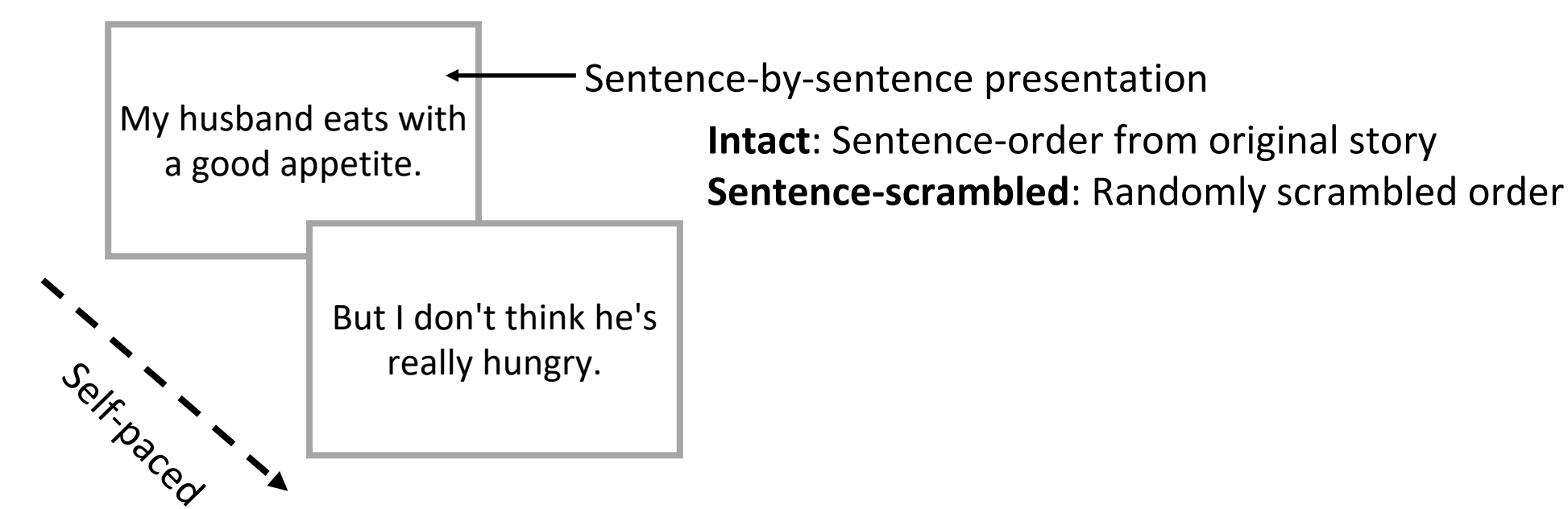


Sample: N = 160, tested via Amazon's MTurk; n = 80 per condition (e.g., Intact)
Story: *So Much Water So Close to Home* by Raymond Carver
Summary: A brooding and unsettling story about a wife who suspects her husband of committing a murder on a recent camping trip with his friends.
Length: 2356 words; 268 sentences

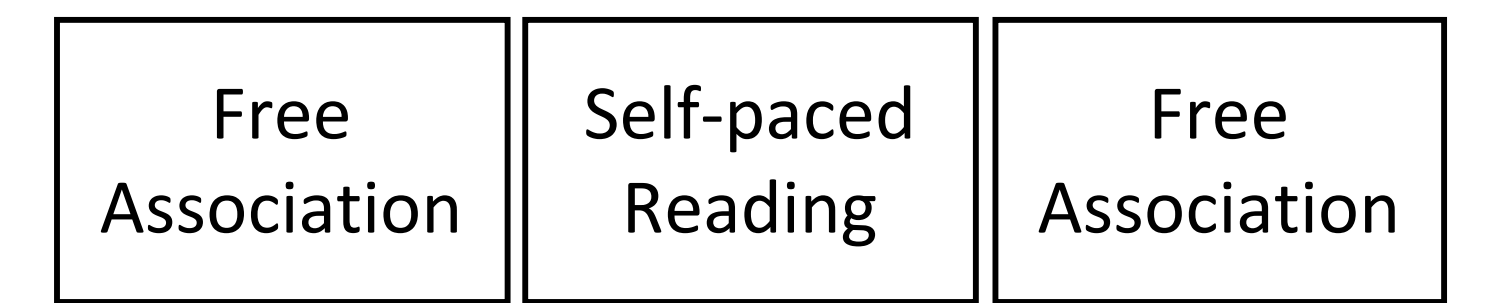
Free Association



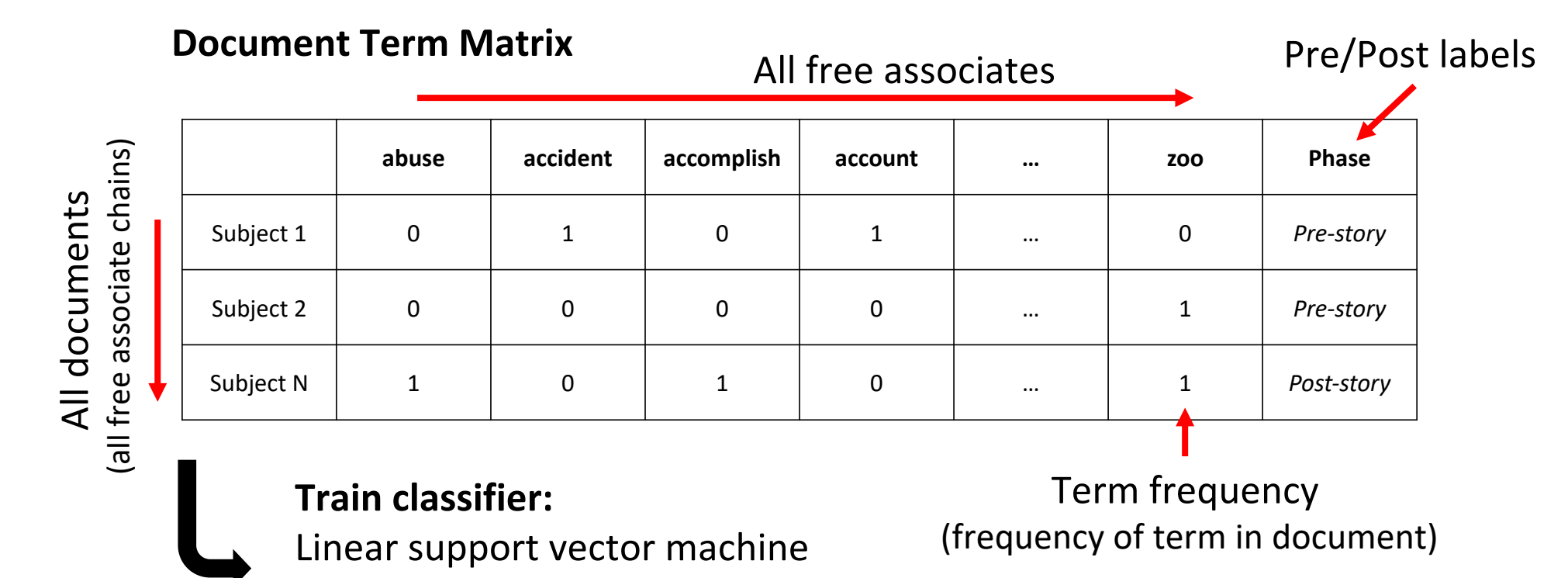
Self-paced Reading



Document Classification



Can we tell the difference?

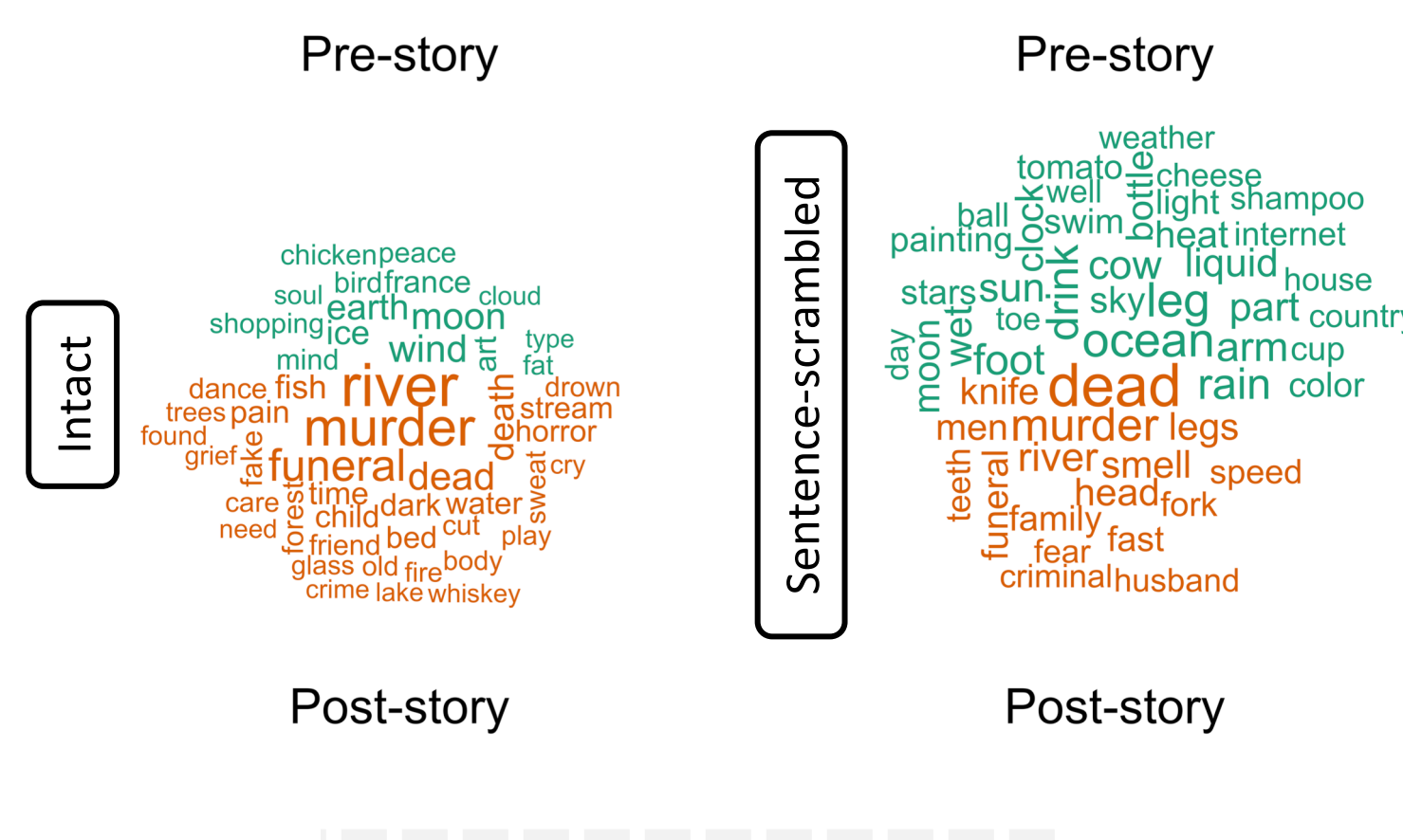


Classification Details:

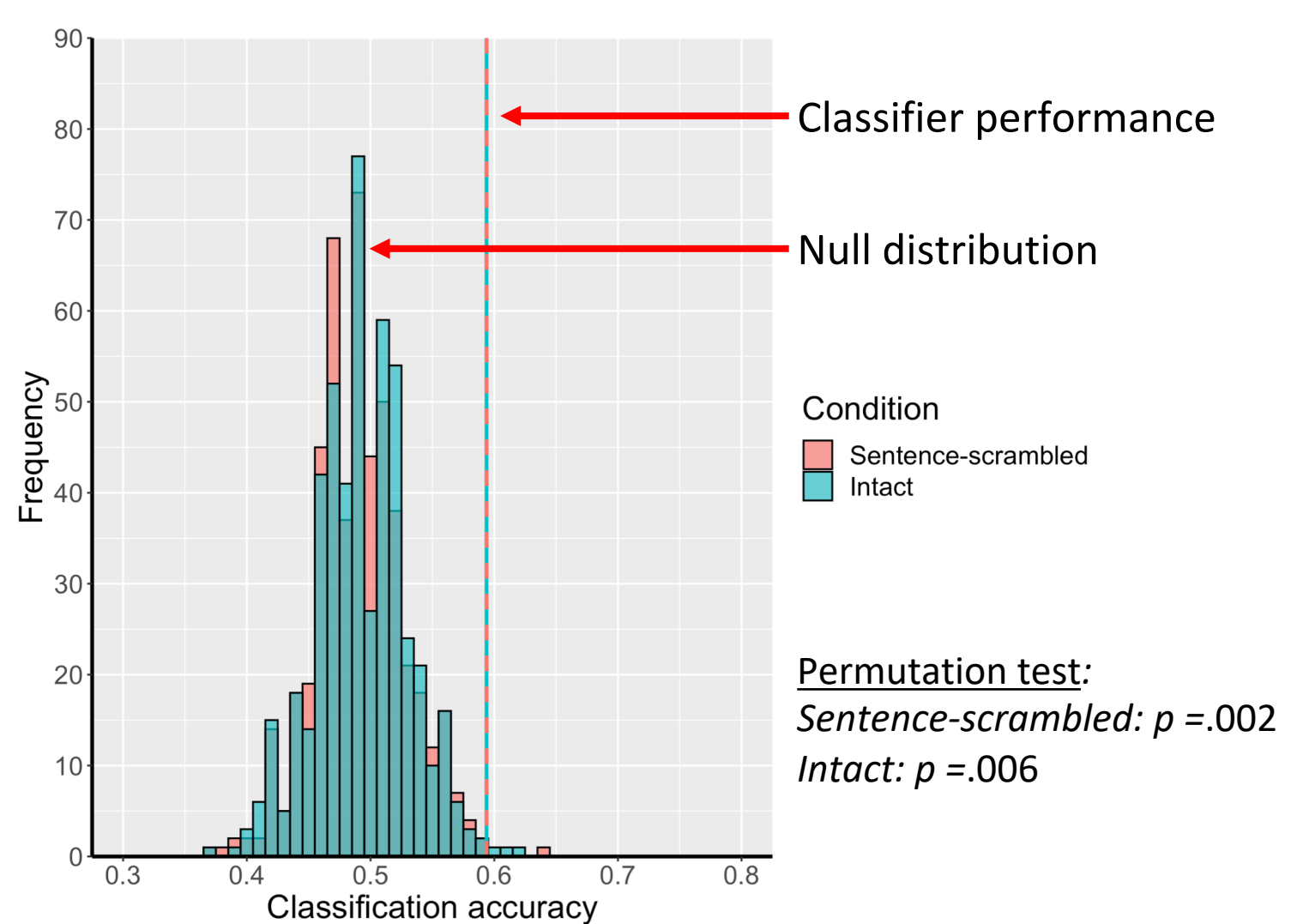
- Training *within* experimental condition (e.g., Intact-only)
- Testing via LOOCV at the subject-level
- Null distribution via 500 resamples + shuffling test labels

Classification Results

Word-clouds (based on term frequency)



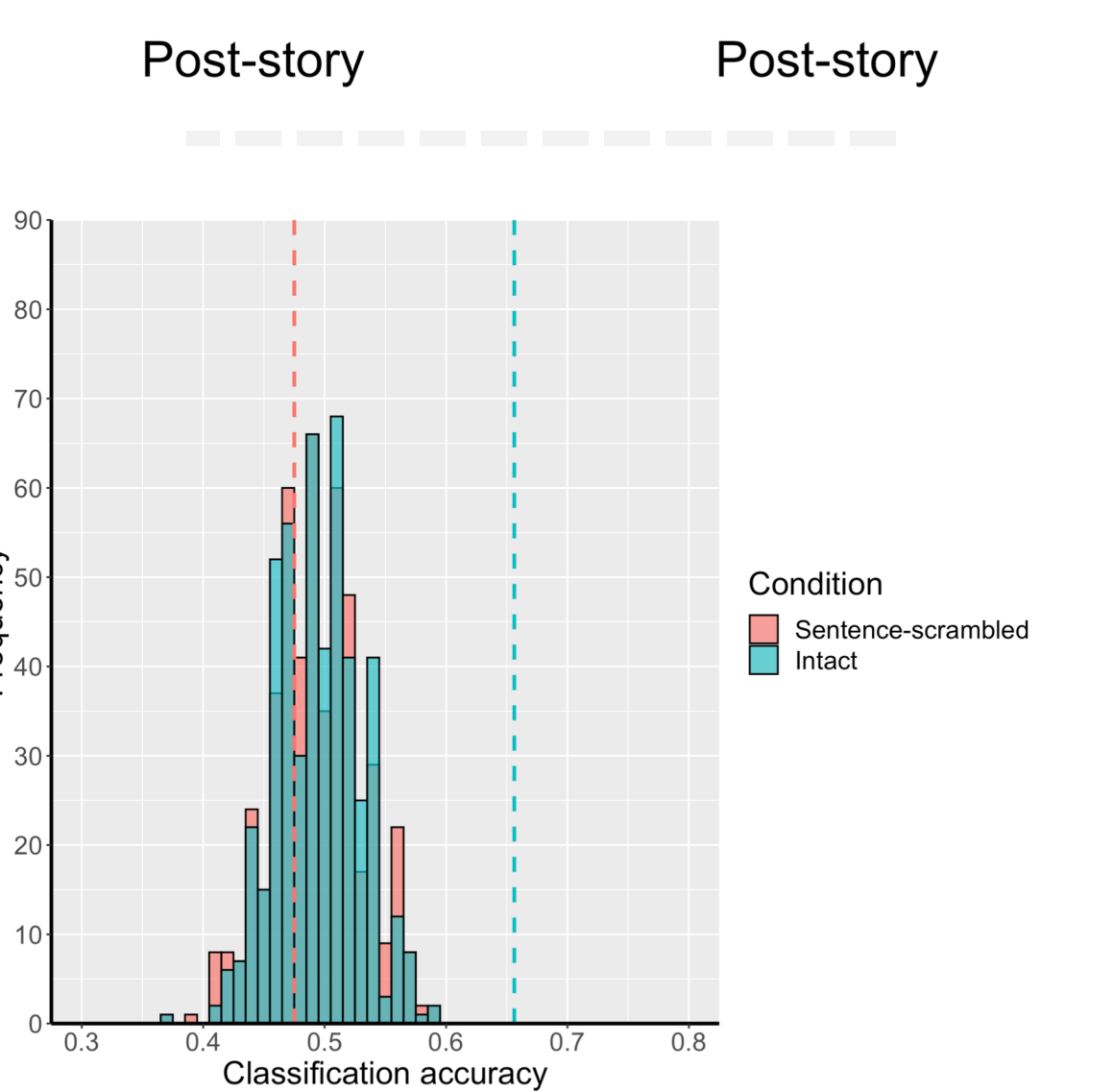
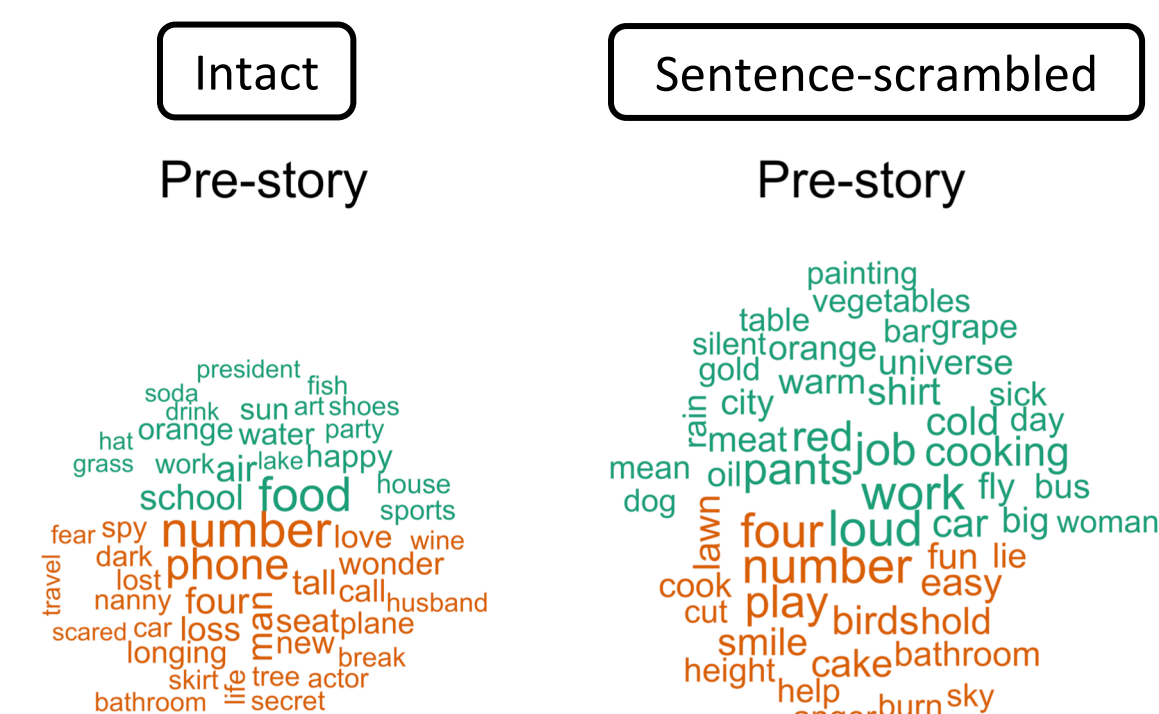
Document classification accuracy



Summary: Pre- vs. Post-story free association is discriminable, and it may be via story-themes.

Replication

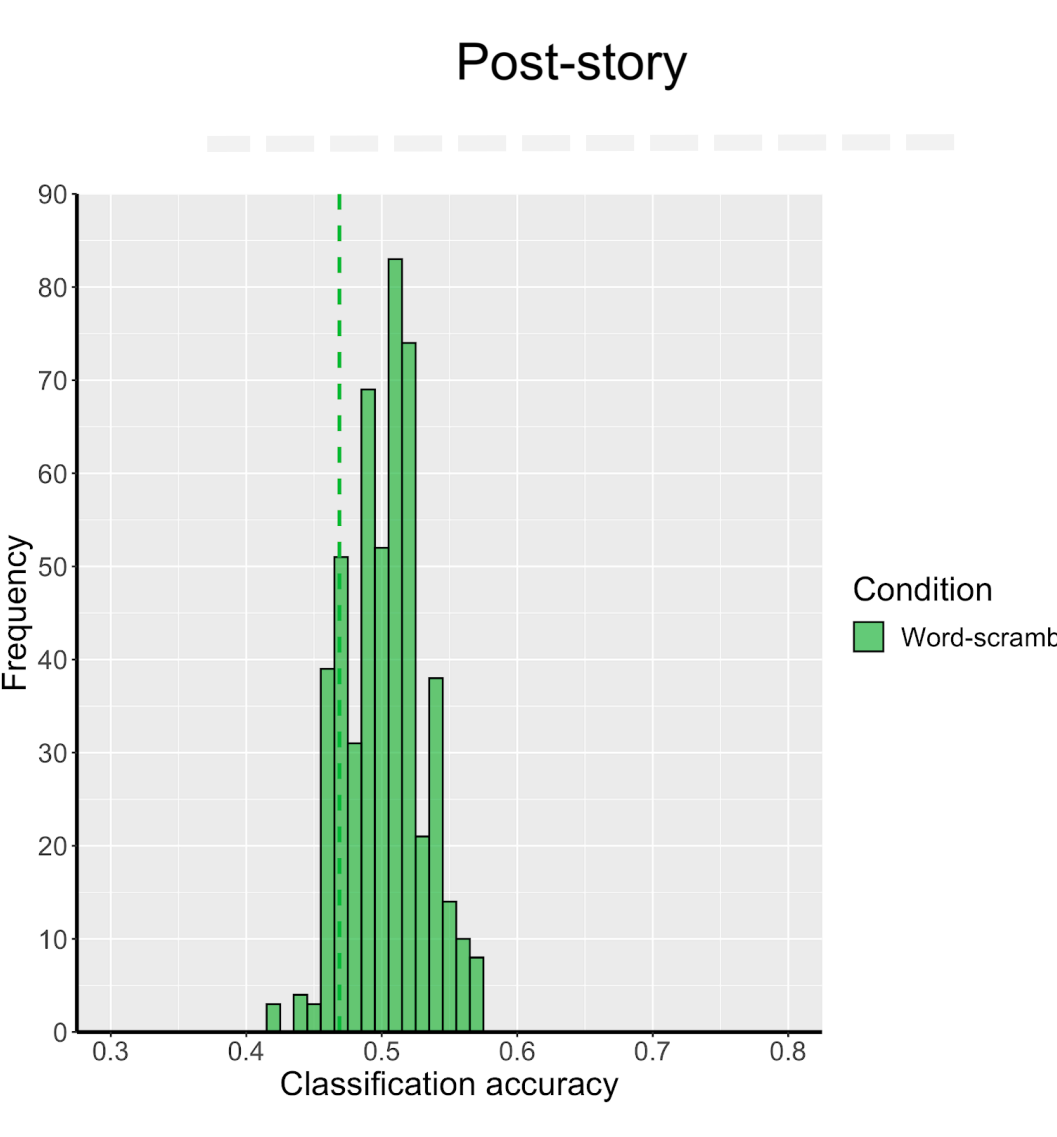
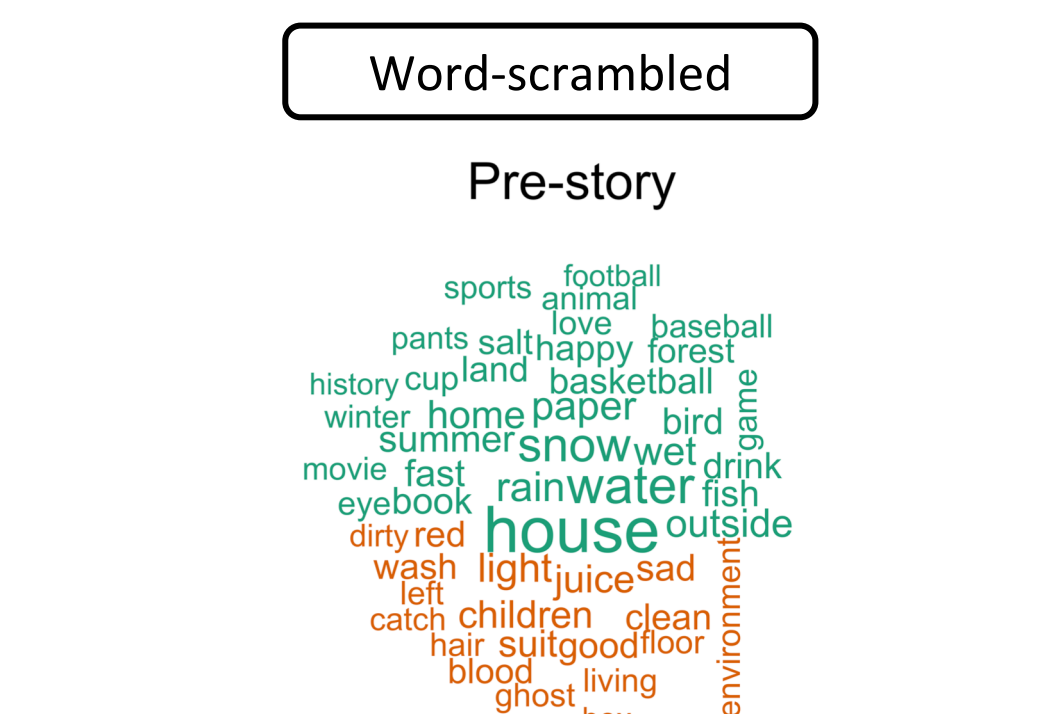
Sample: N = 160
Story: *Roy Spivey* by Miranda July
Summary: A women and a famous actor flirt on an airplane. He gives her a secret number: four.
Length: 2798 words; 266 sentences



Summary: Pre- vs. Post-story free association is discriminable, and it may be via story-themes.

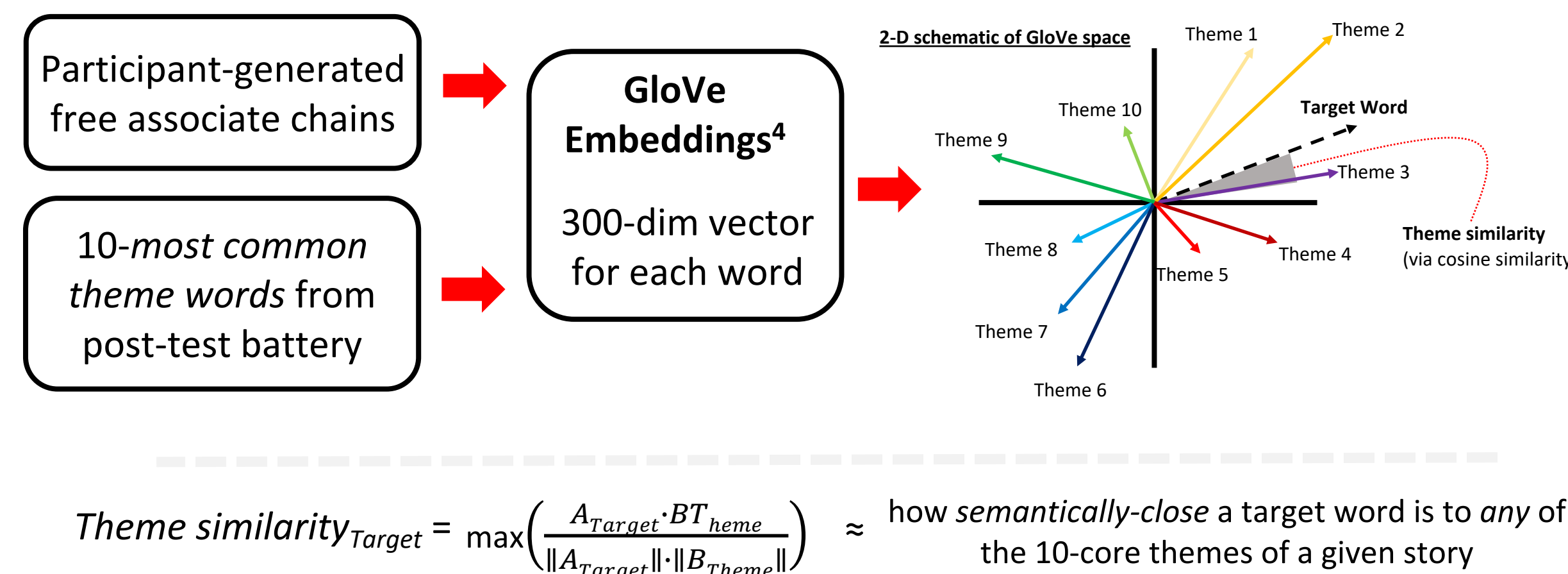
Word Priming?

Sample: N = 80
Story: *Word-scrambled* version of the Carver story
Details: Scrambling within 5-sentence windows from intact story to preserve order.

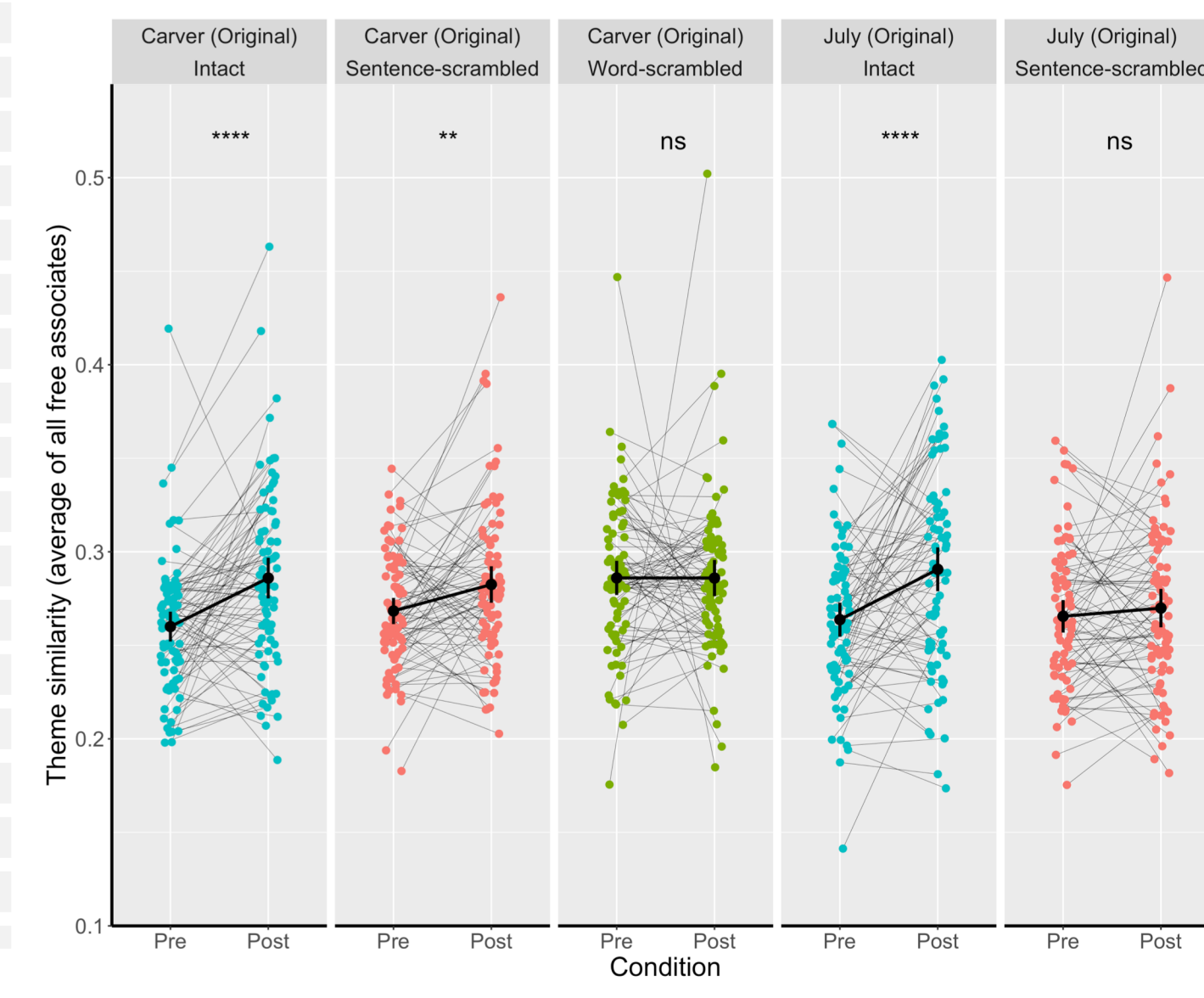


Summary: Pre- vs. Post-story free association is discriminable, and it may be via story-themes.

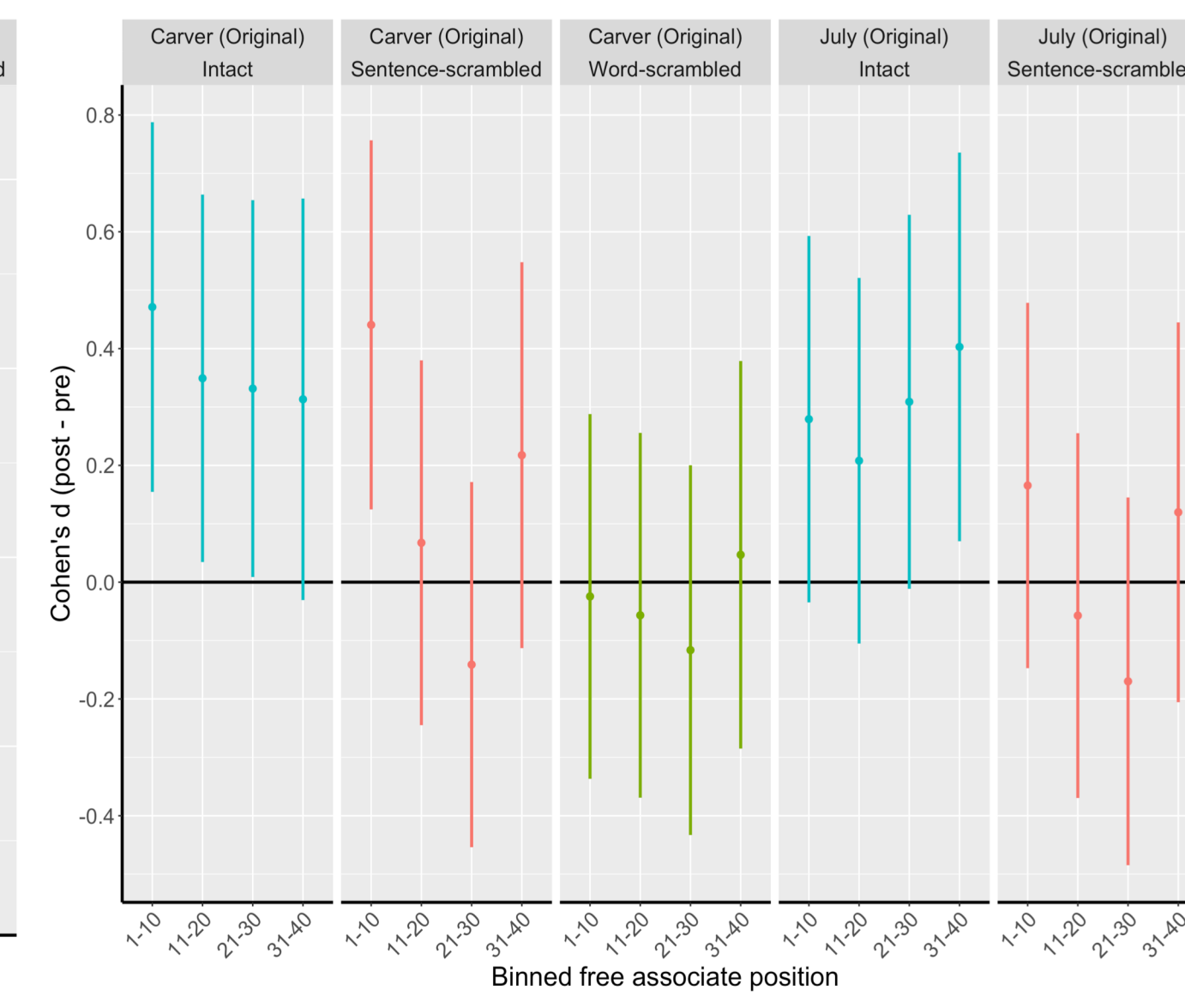
Theme Similarity



Pre vs. Post-Story (overall)



Effect sizes over time (windowed)



Summary: Story-themes continue to influence/intrude into spontaneous free association even after the story ends. Also, this effect persists longer into free association when the story is intact.

Summary

Stories shape our spontaneous thoughts, not only during reading, but beyond it.

The *coherence (or meaningfulness)* of the text determines the strength of this lingering context, which suggests that word-level priming accounts are inadequate.

We propose that the extent to which a recent experience is processed *deeply*⁵, determines its ability to restructure existing knowledge networks. This restructuring of existing association networks then affects how we traverse them during spontaneous thought⁶.

References

- Green & Brock (2000). *J. Pers. Soc. Psychol.*, 79(5), 701-721.
- Kuijpers et al. (2014). *Sci. Study. Lit.*, 4(1), 89-122.
- Bower & Clark (1969). *Psychon. Sci.* 14, 181-182.
- Pennington et al. (2014). *In Conference on Empirical Methods on Natural Language Processing (EMNLP)*, 1532-1543.
- Craik & Lockhart (1972). *J. Verbal Learning Verbal Behav.* 11(6), 671.
- Mildner & Tamir (2019). *Trends Neurosci.* 42(11), 763-777.