



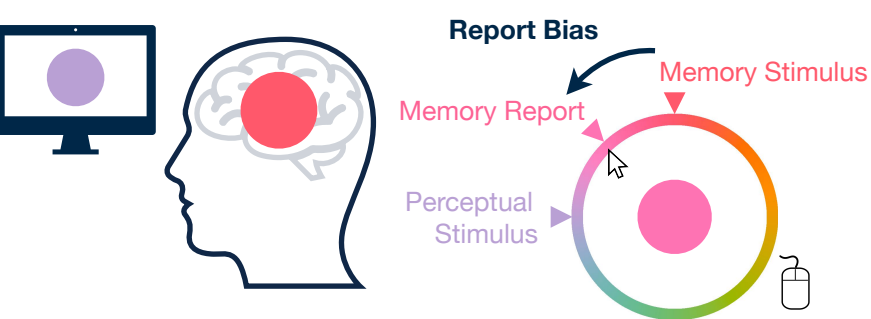
Perceptual history modulates working memory biases beyond local sensory properties

Joseph M. Saito, Boheng Li, & Timothy F. Brady

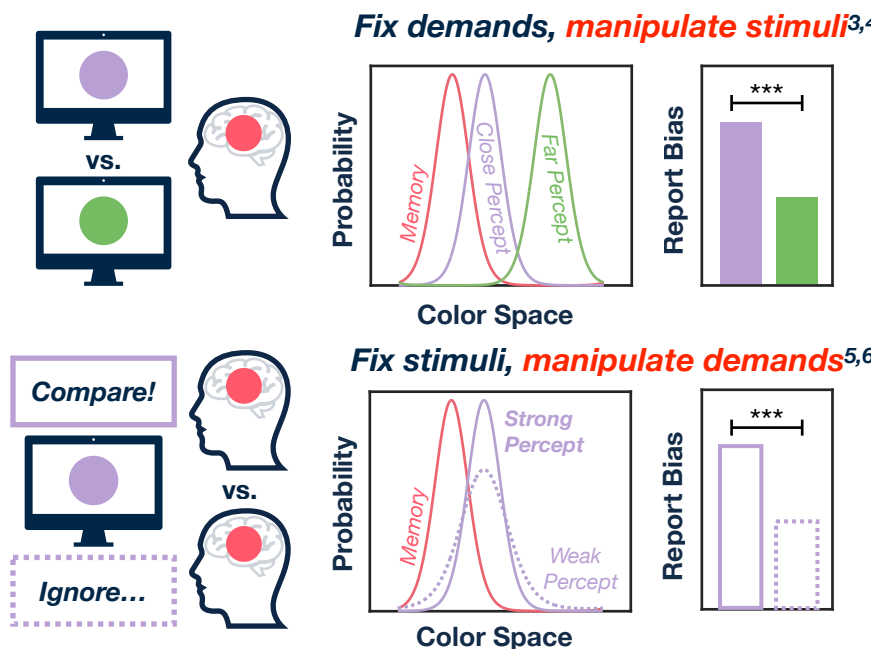
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Background & Research Question

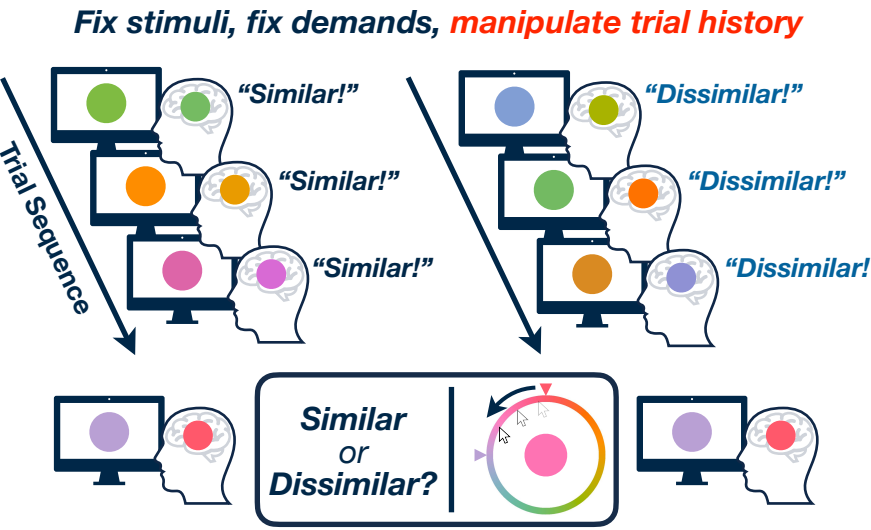
Working memory (WM) reports are **systematically biased towards percepts** encountered during maintenance



Most studies assume that these biases are **fully explained by relational properties** that vary each trial^{1,2}



However, these relational properties may produce **dependencies across trials** that further modulate bias

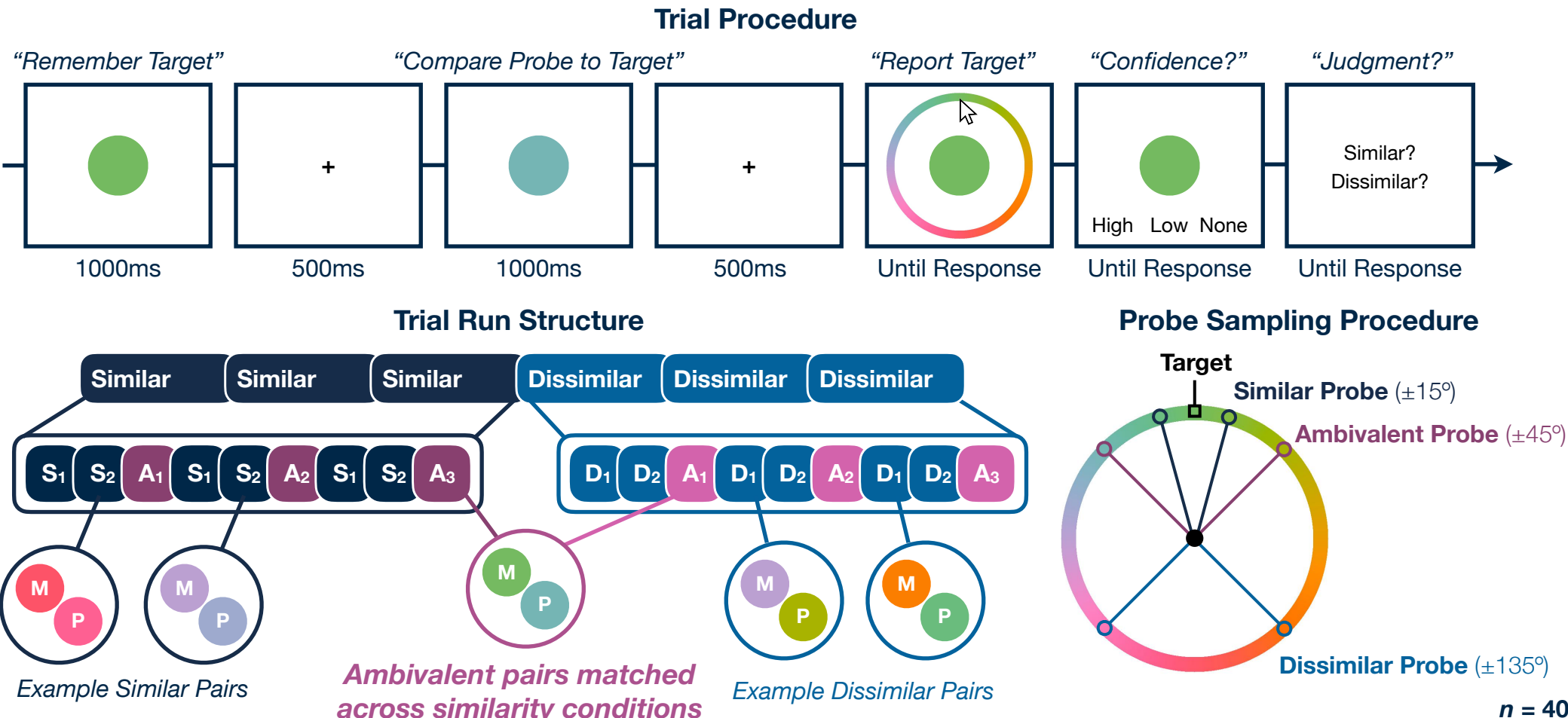


Does relational history between memory & perception modulate biases beyond current relational properties?

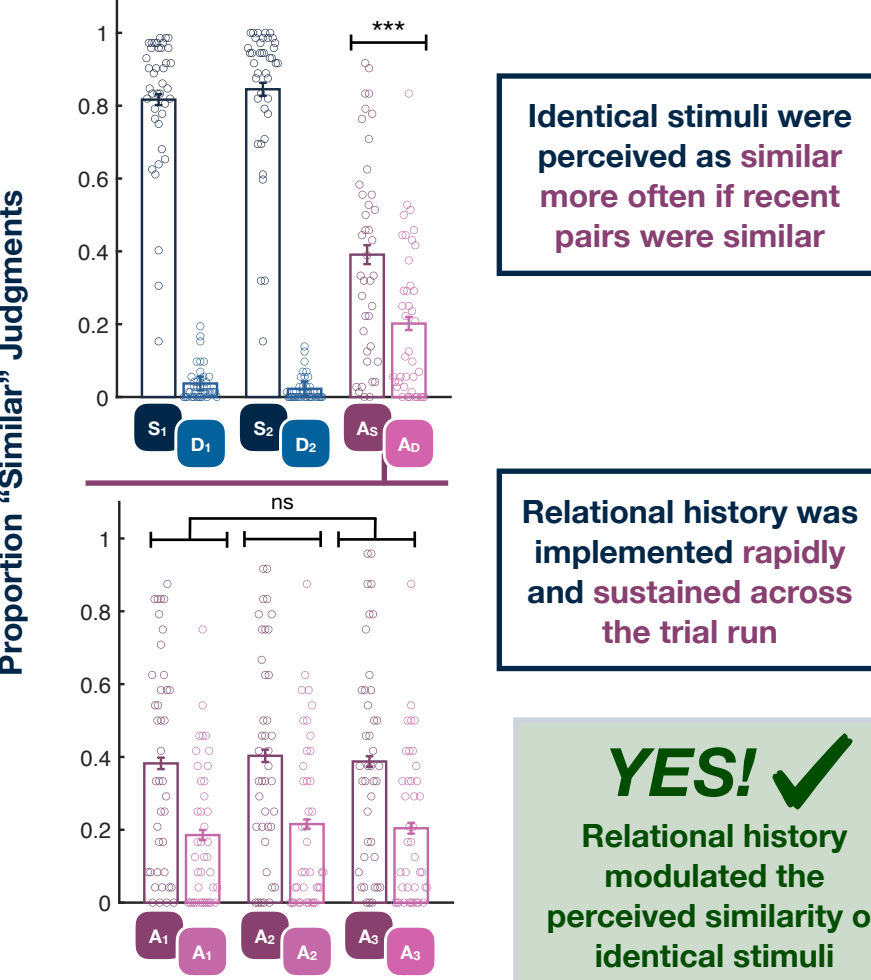
1. Lorenc, Mallett, Lewis-Peacock (2021) *Trends in Cognitive Sciences*
2. Adam, Rademaker, & Serences (2022) *Visual Memory*
3. Teng & Kravitz (2019) *Nature Human Behavior*
4. Rademaker, Bloem, et al. (2015) *Journal of Exp. Psych: HPP*
5. Saito, Kolinsky, & Fukuda (2022) *Psychonomic Bulletin & Review*
6. Zhang & Lewis-Peacock (2023) *Journal of Exp. Psych. General*

Exp. 1 — Does recent relational history between working memory and perception modulate memory biases between identical stimuli?

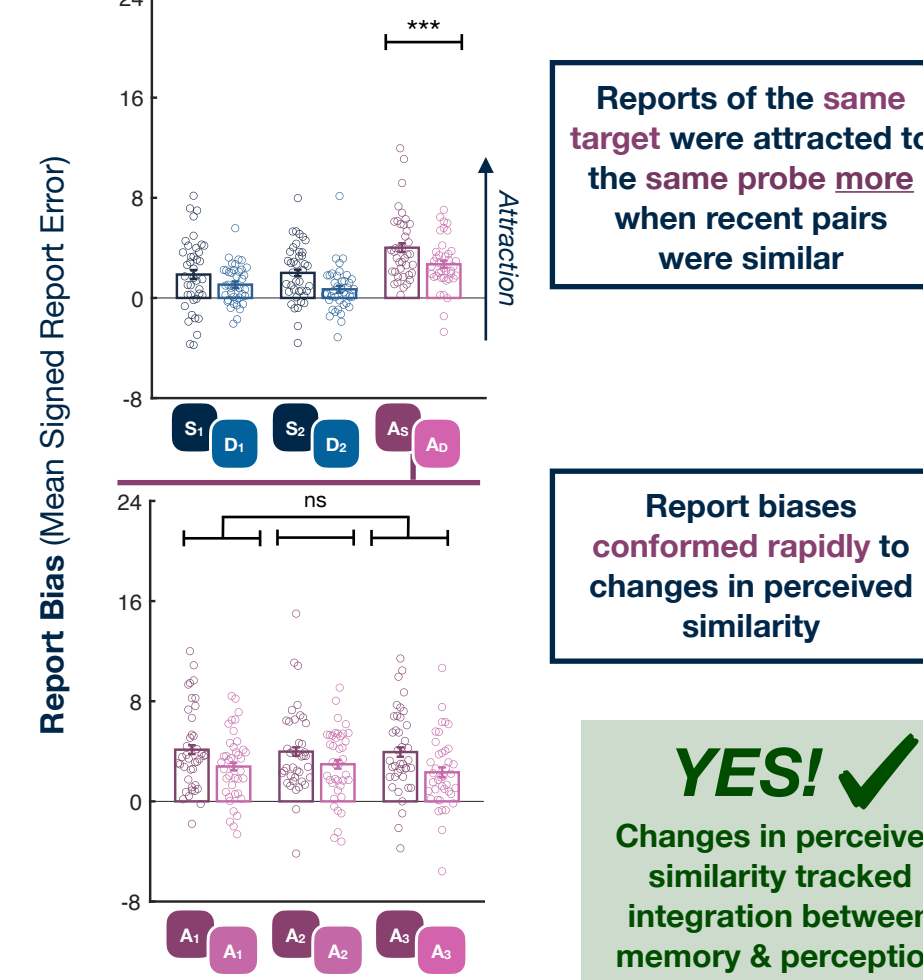
Method — Short runs of **similar** or **dissimilar** target-probe pairs interleaved with identical **ambivalent** pairs



Did history influence perceived similarity?

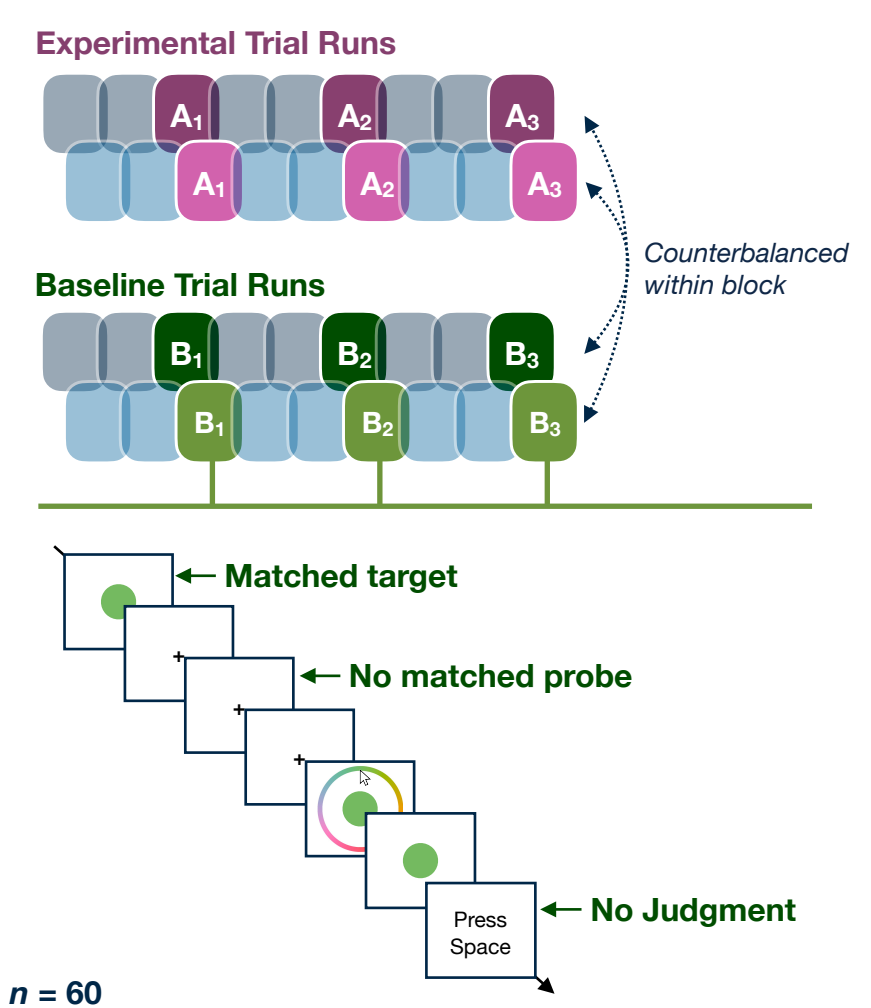


Did perceived similarity track report bias?

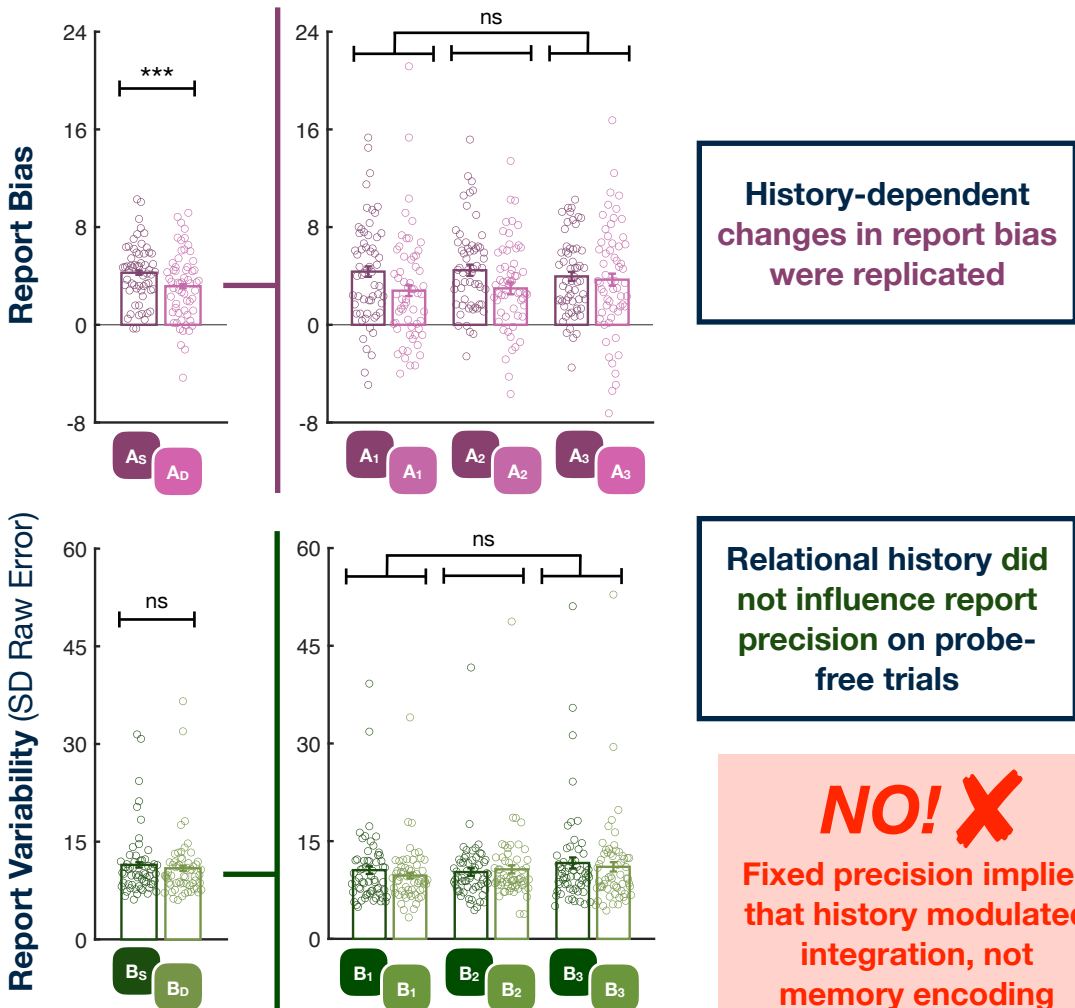


Exp. 2 — Does relational history modulate integration or memory encoding?

Method — Introduce **probe-free trials**

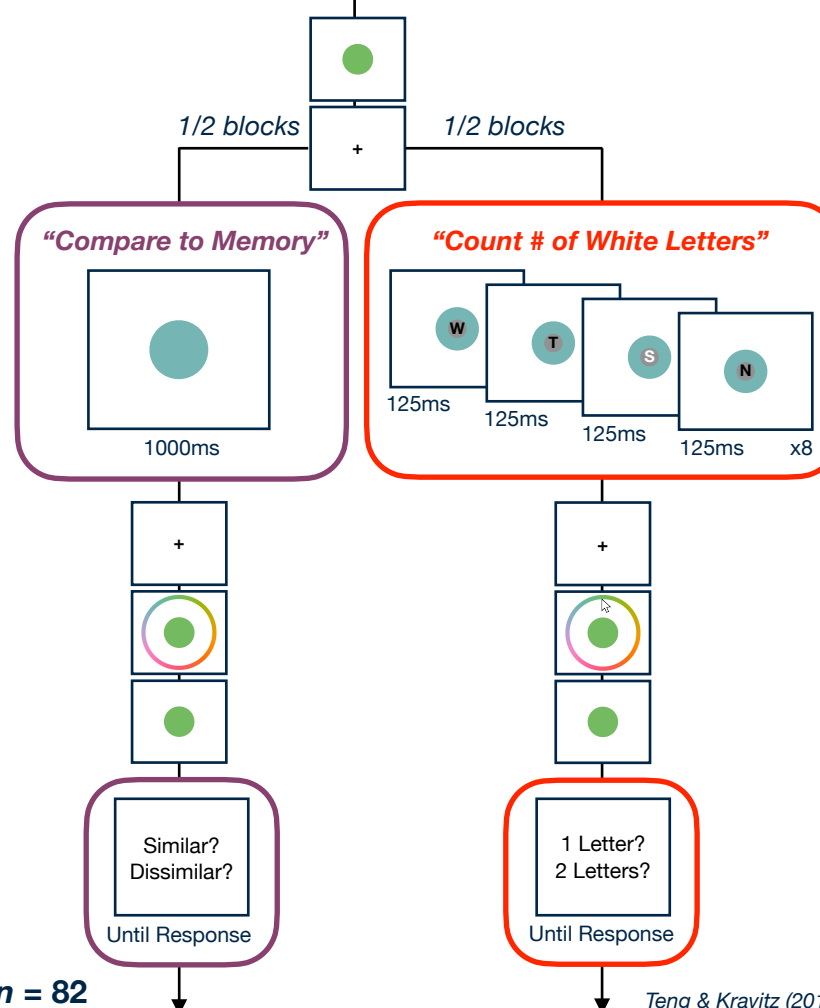


Did report bias correspond with report precision?



Exp. 3 — Does the effect of relational history depend upon explicit perceptual comparisons?

Method — Manipulate **task demands**



Did bias modulation by history generalize across tasks?

