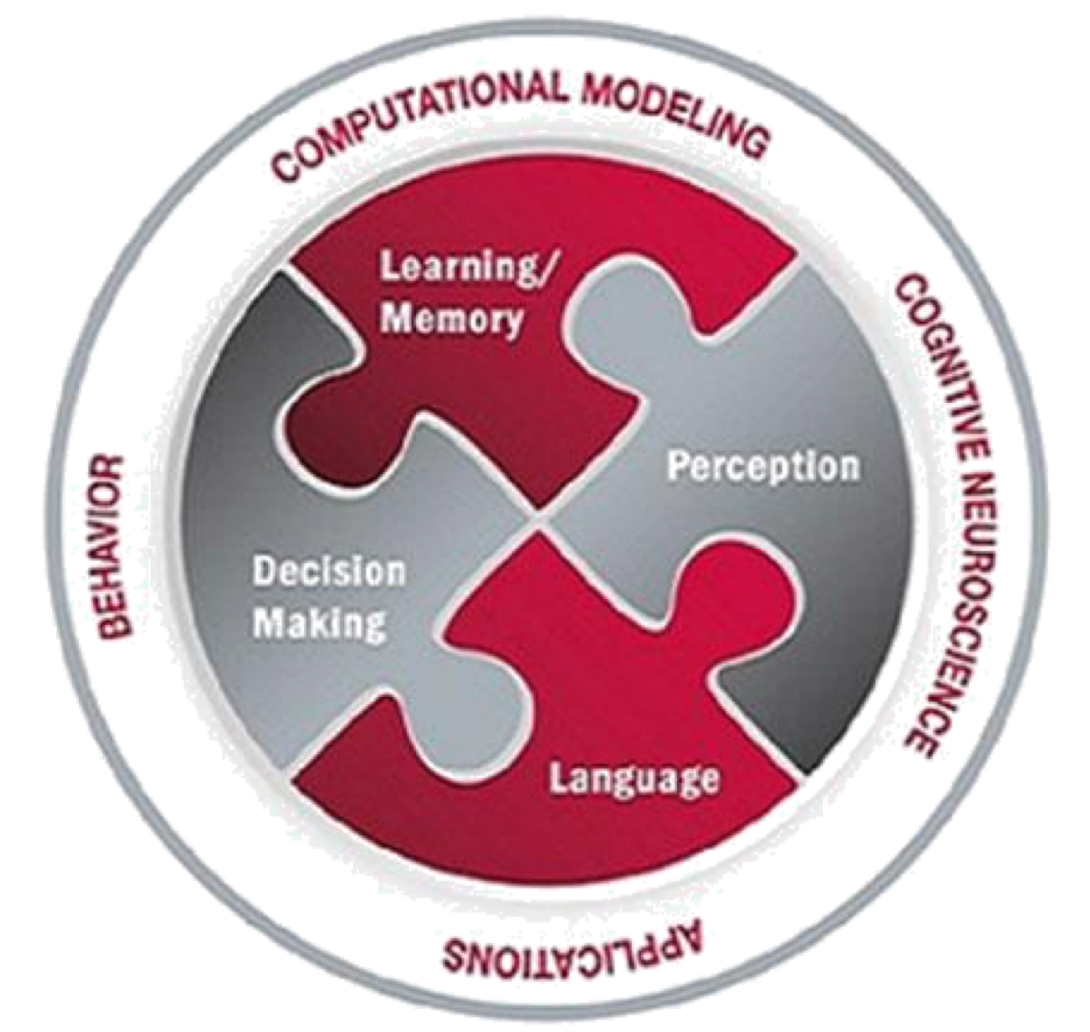


PERCEPTUAL DISTRACTION DISRUPTS THE FILTER GATING VISUAL WORKING MEMORY ACCESS

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Background

Despite its capacity limit, visual working memory (VWM) is critical in supporting many everyday behaviors such as visual search

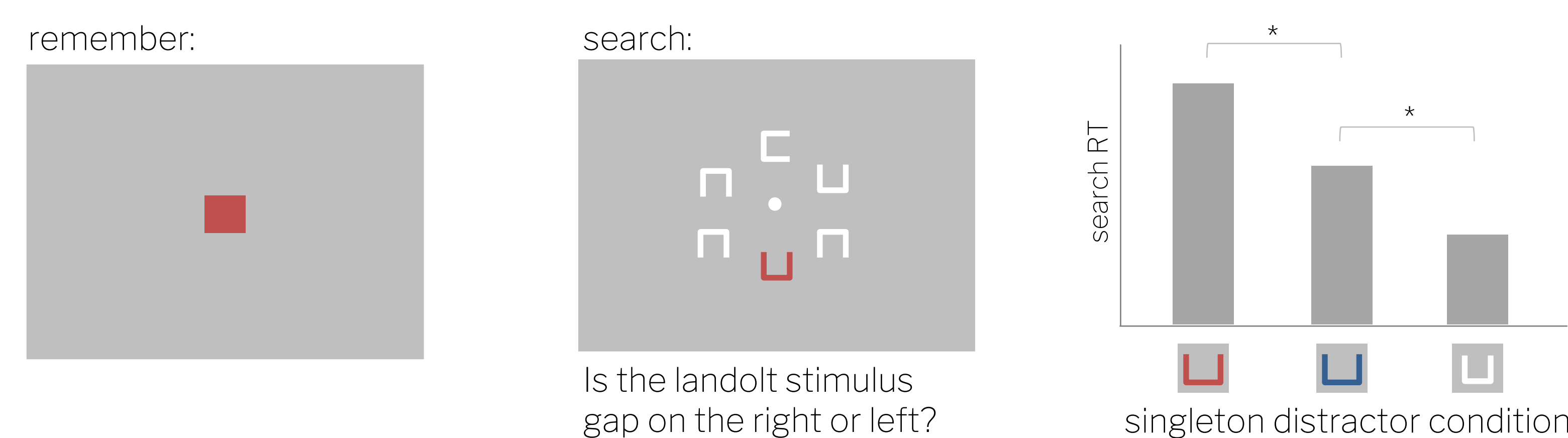
- i.e., VWM maintains a representation of your search target¹, marks previously searched locations to prevent re-selection²

When salient/unexpected information appears, attention is captured, slowing search time³, but what are the consequences of distraction for VWM?

Are irrelevant distractor features encoded into visual memory during attentional capture?

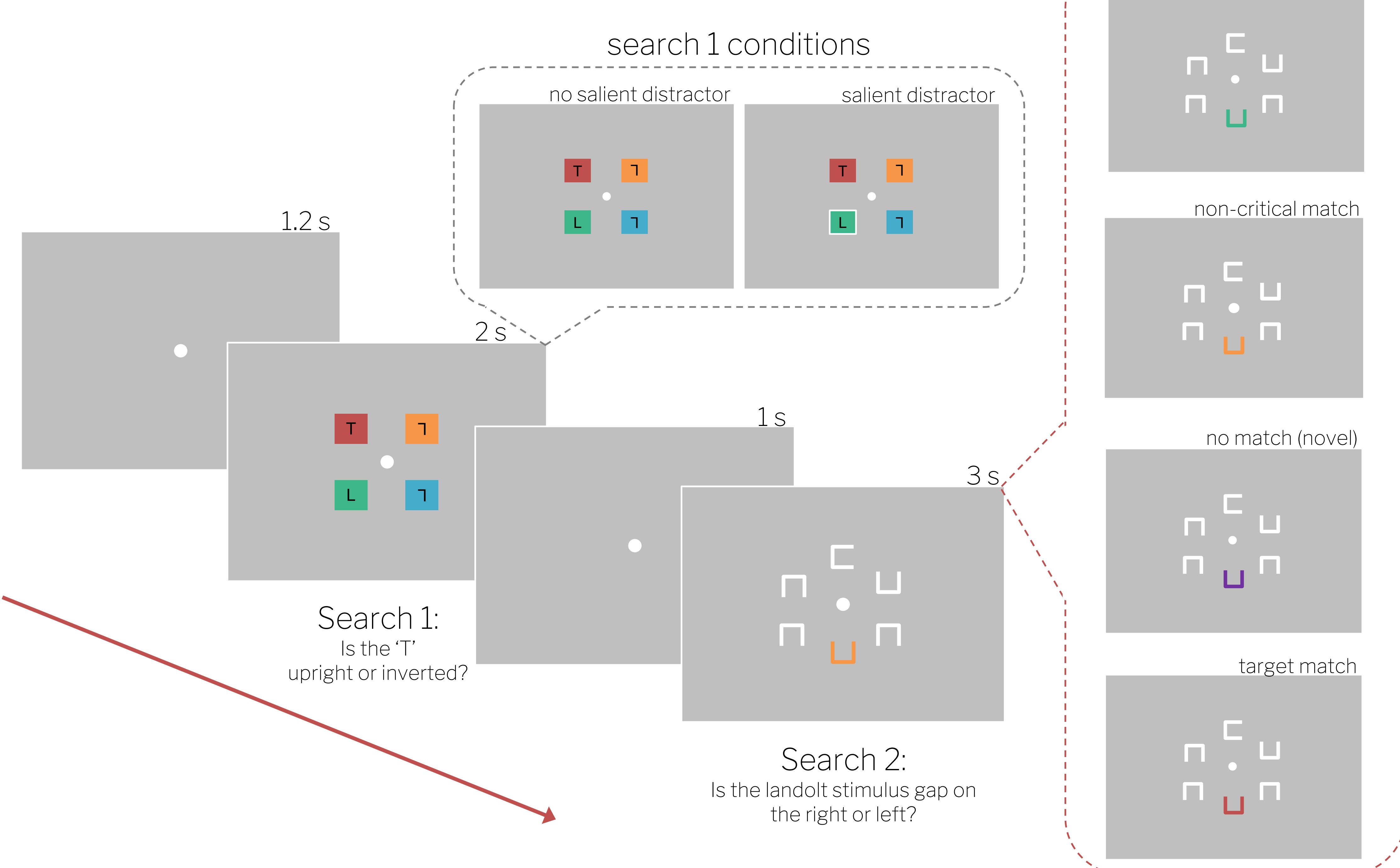
Methods

Memory-driven capture⁴ paradigm



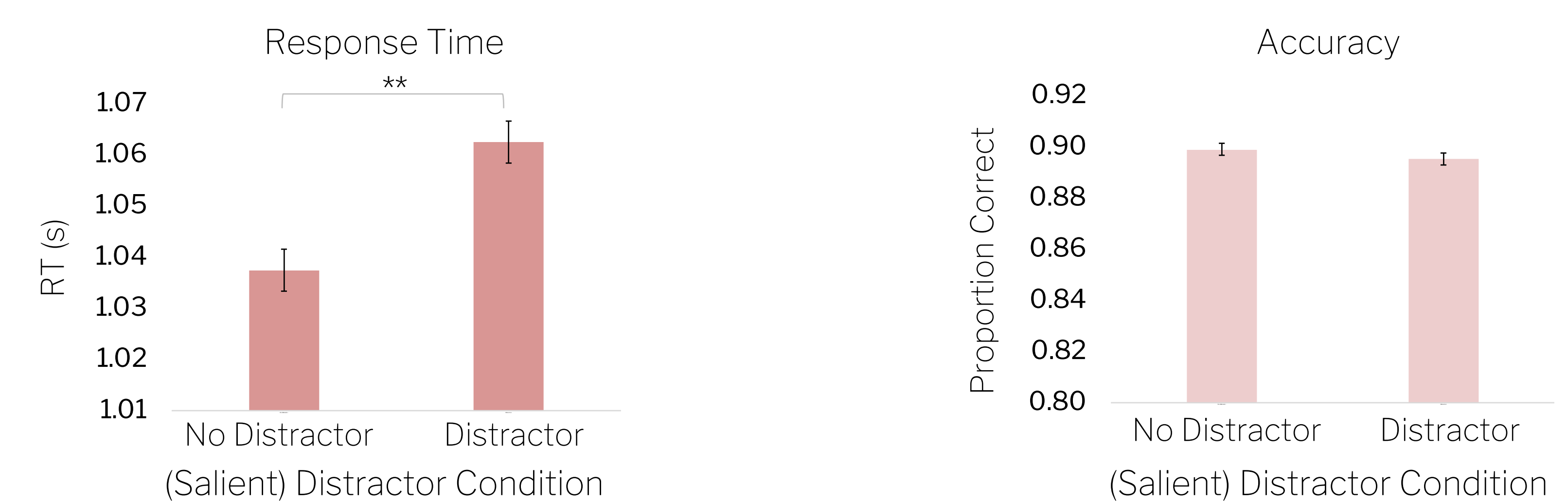
Current paradigm

Does a salient distractor in S1 produce memory-driven capture in S2?



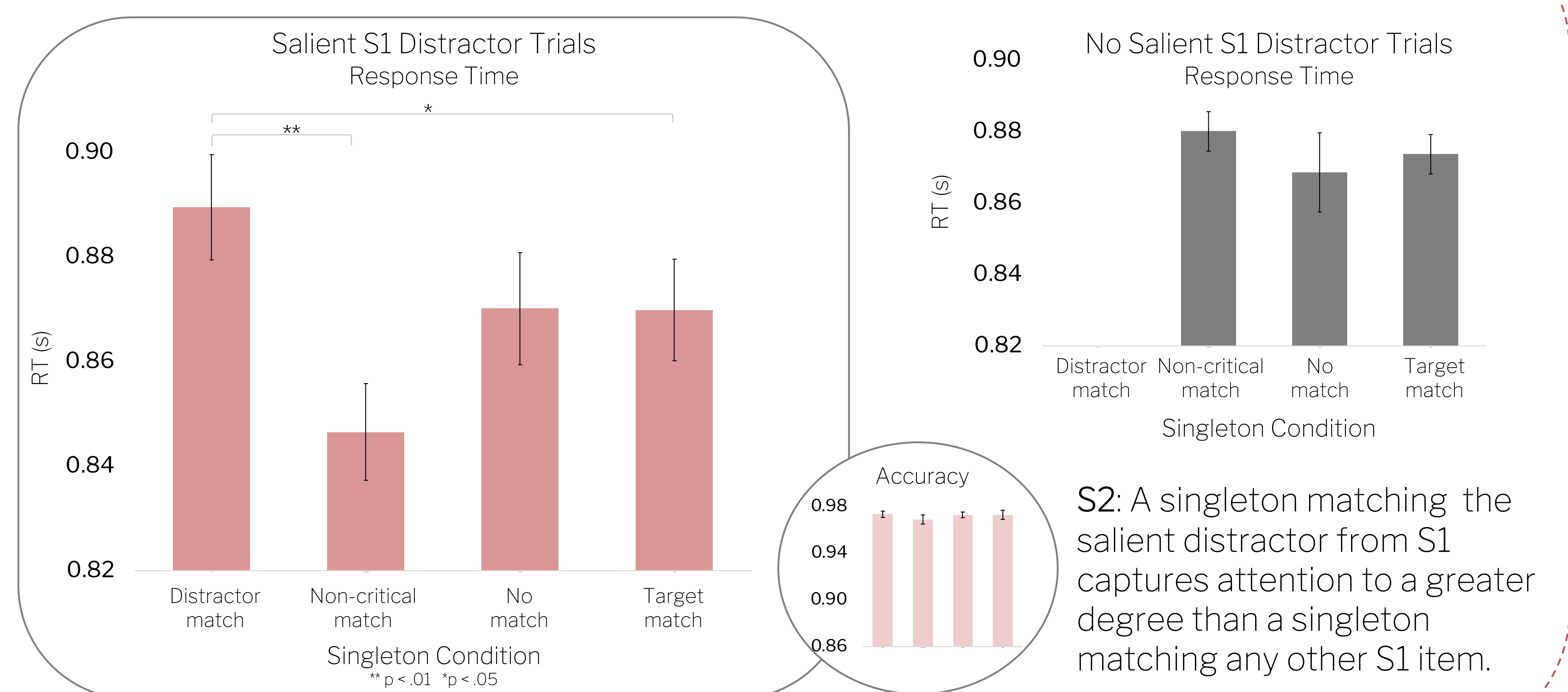
Results

Search 1



S1: Salient distractor induces attentional capture

Search 2



Conclusions

In a sequential search paradigm, we observed *exacerbated* attentional capture (i.e., memory-driven capture) in S2 when the singleton matched the salient distractor from S1. In addition to slowing RTs during the current search (S1), distraction also disrupts the filter that typically restricts irrelevant information from VWM encoding, causing the unnecessary storage of distractor features. These incidentally encoded distractor features can then drive attention during a subsequent visual search (S2).

Irrelevant distractor features are encoded into memory during attentional capture, and drive subsequent attention.

References
¹Woodman et al. (2013). Journal of Vision, 13(3); ²Emrich et al. (2009). PLoS ONE, 4(11); ³Yantis (1993). JEP:HPP, 19(3); ⁴Olivers et al. (2006). JEP: HPP, 32(5).