

SUPPRESSION OF COMPETING INFORMATION DURING MEMORY-GUIDED ATTENTION

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SIPPS 2022



ATTENTION AND SELECTION



Attention is essential for responding according to the world around us



Attention can be guided by salient cues from our environment such as sights and sounds

ATTENTION AND SELECTION



Attention can also be cued by learned information stored in long-term memory¹

Learned differentiation serves memory guided attention



This platform

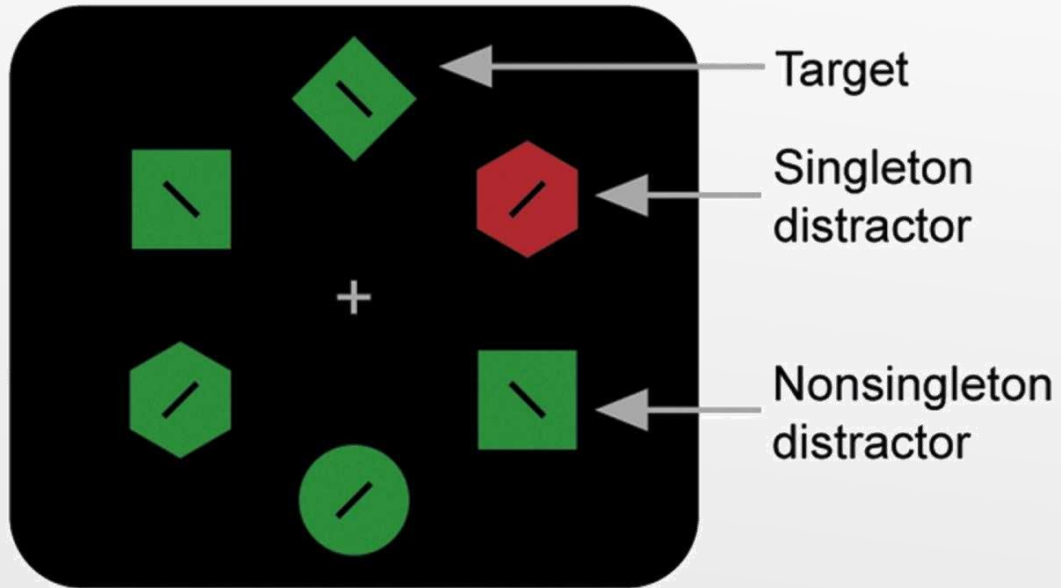


Not this one



¹ Hutchinson & Turk-Browne (2012)

DISTRACTOR SUPPRESSION



What about *learned* distractor information stored in long-term memory?



Tasked with searching for target objects, participants demonstrate oculomotor suppression of the color singleton distractor below the nonsingleton distractor baseline²



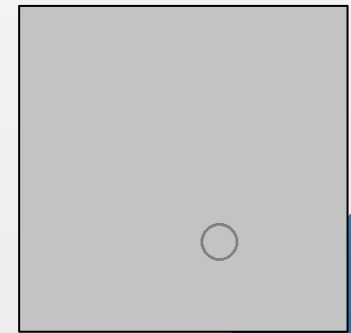
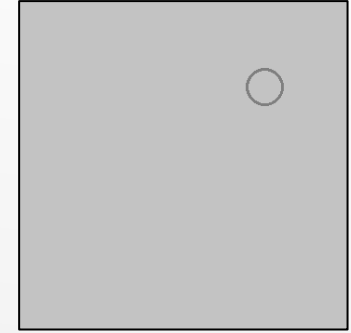
THE QUESTION

Does the process of learning to differentiate between similar pieces of information result in suppression of the competing information during memory-guided attention?

DESIGN (DAY 1)

Participants are tasked with learning visual associations between images of scenes followed by spatial locations

They must also learn to differentiate between very similar scenes with different associated spatial locations

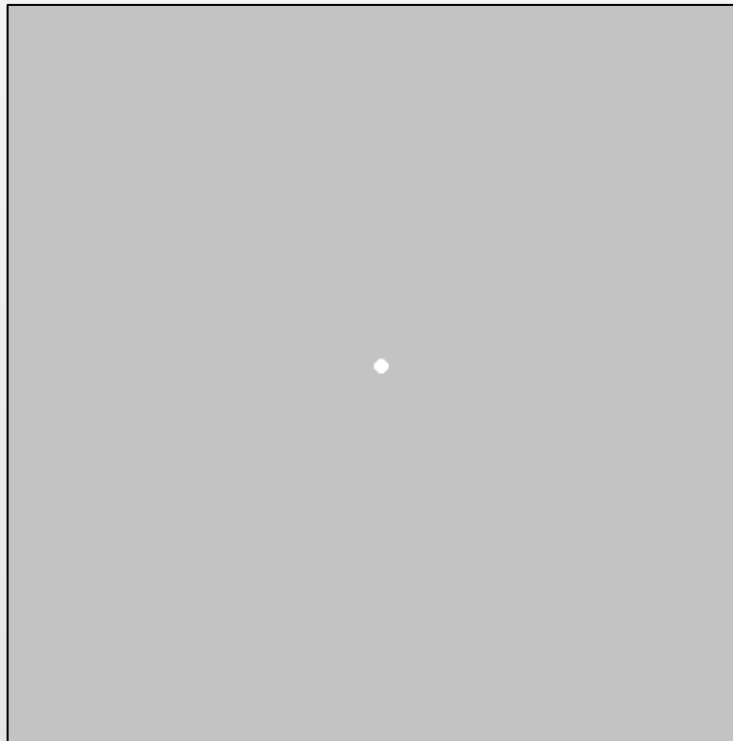


DESIGN (DAY 2)

Participants are tasked with using the previously learned information to guide their attention in a search task for distortions in subsequent scenes



Cue image presented



Fixation and recall period



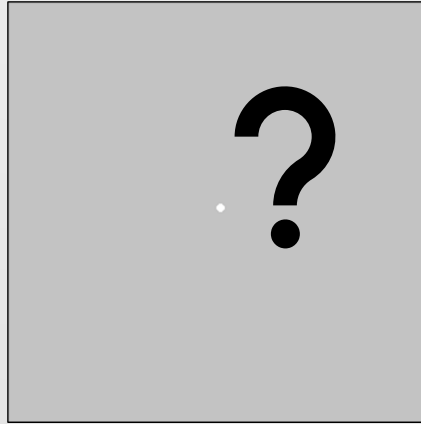
Distortion search

DESIGN (DAY 2)

The distortions can be potentially presented in three different locations:

- Valid location
- Invalid - Competitor
- Invalid - Control

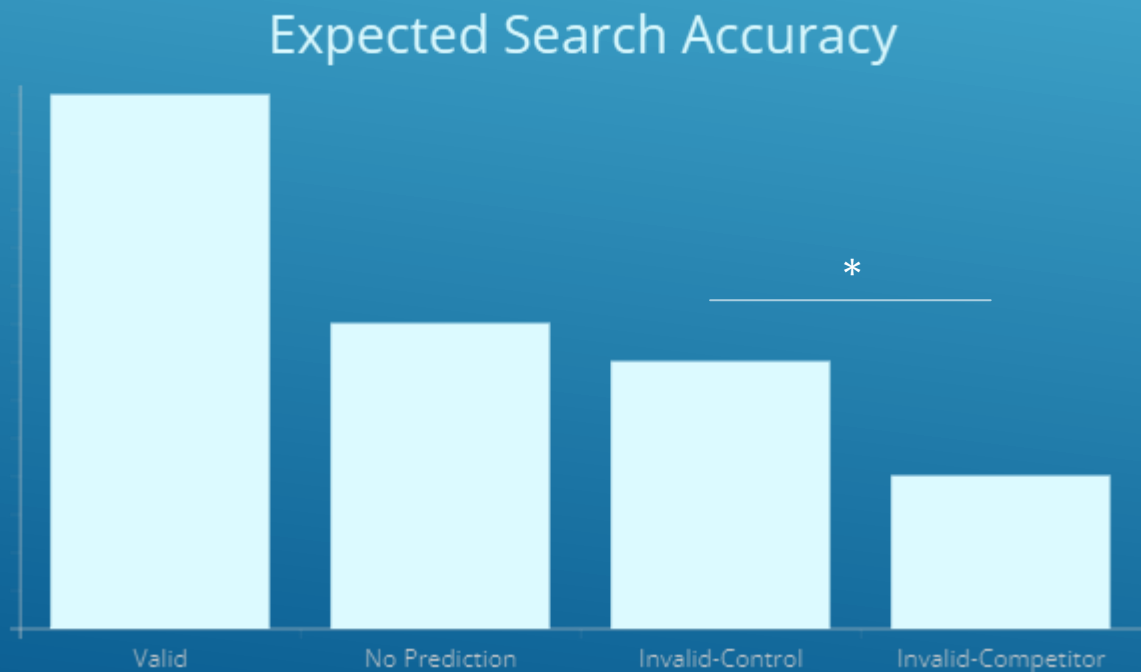
Some cue scenes will be novel (No prediction)



EXPECTED RESULTS

We seek to analyze the frequency of participants accurately identifying the distortion between the various locations it might appear

In particular, the frequency of locating the distortion in the invalid-competitor location as opposed to locating the distortion in the invalid-control location



THANK YOU