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Non-Target Cueing Benefit in Visual Working Memory is Independent of Cue-Target Compatibility

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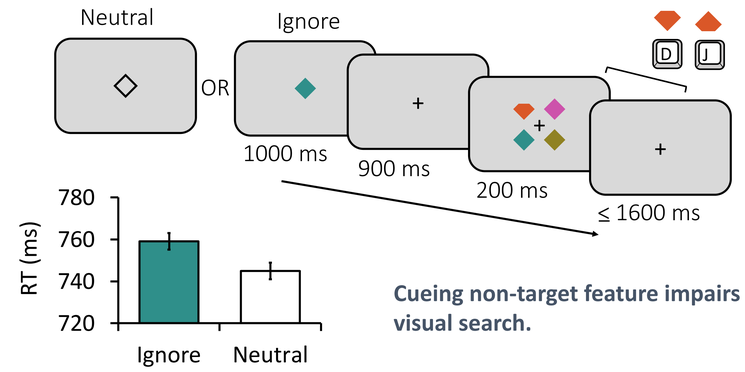
BACKGROUND

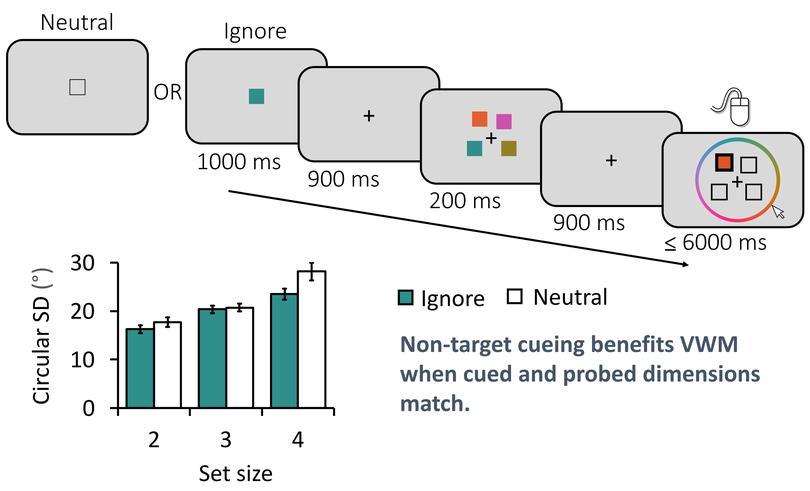
Cueing the color of a to-be-ignored item slows target judgments in visual search through a paradoxical process of attentional selection[1]. Recently, we replicated this finding and further examined the extent to which visual working memory (VWM) recall is affected by such cueing[2], given the association between attentional and VWM systems.

Visual Search Task



Cueing non-target feature impairs visual search.

Visual Working Memory Task[2]

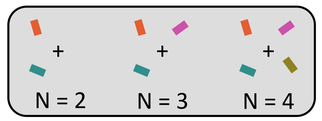


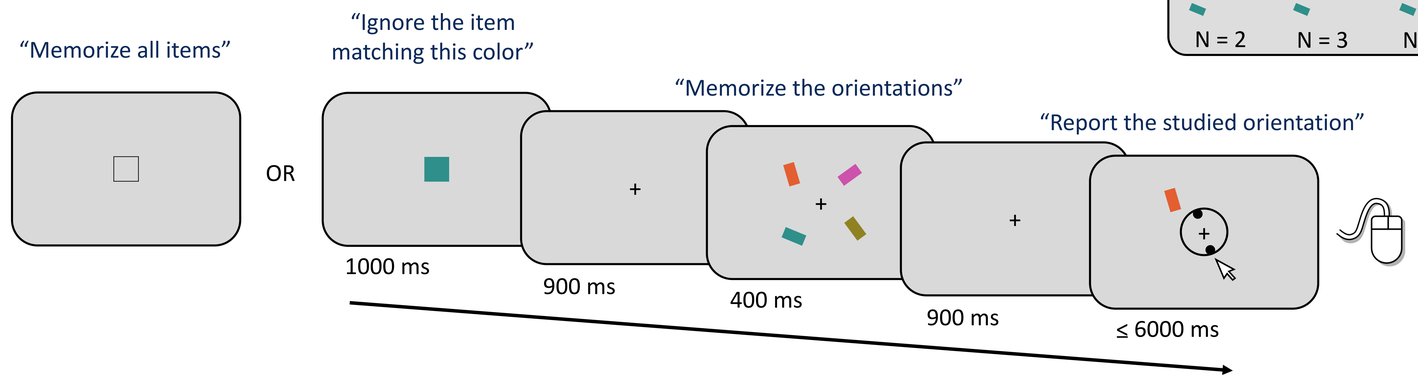
Non-target cueing benefits VWM when cued and probed dimensions match.

QUESTION

Does the non-target cueing benefit hold when the to-be-remembered feature is independent of the to-be-ignored feature?

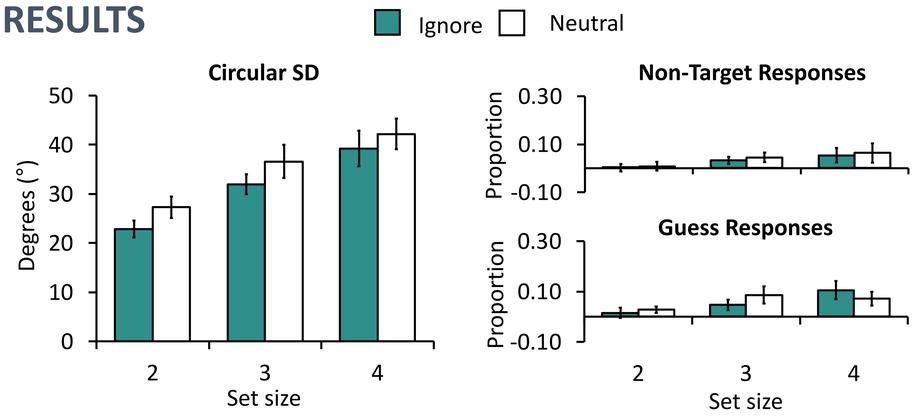
PROCEDURE





18 participants, 20.0 years, 13 female; 360 trials (6 blocks)

RESULTS



Ignore cues benefit VWM quality, without sacrificing target response probability.

CONCLUSIONS

We replicate our previous finding of a non-target cueing benefit in VWM[2].

This benefit cannot be accounted for by set-switching demands or by prior-encoding effects, since cued and probed dimensions were orthogonal in the present study.

We suggest that the discrepancy between visual search and VWM is accounted for by the deployment of attention, with a singleton-search mode[3] driving attentional capture in visual search, but not VWM.

[1] Moher, J. & Egeth, H. (2012). *Atten. Percept. Psychophys., 74.* [2] Williams, R., Newman, R., Pratt, J., & Ferber, S. (2018). *J. Vision, 18.* [3] Gaspelin, N., Leonard, C. J., & Luck, S. J. (2017). *Atten Percept Psychophys, 79.*