

Natural variation between working memory items causes only one item to guide attention

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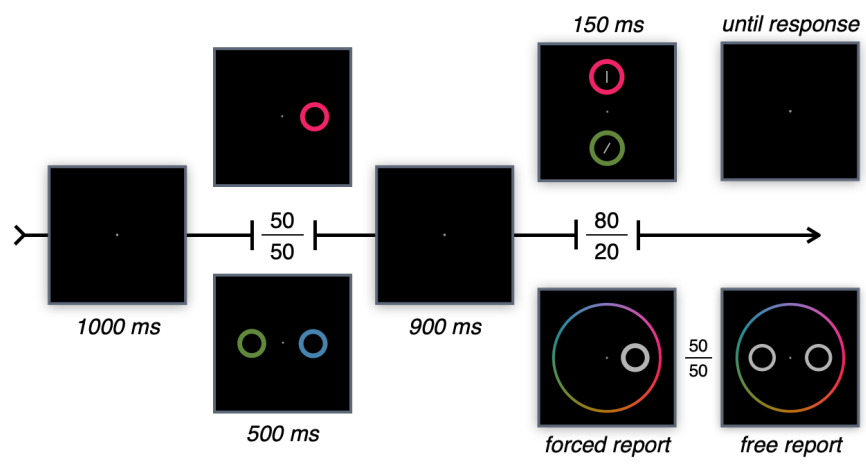
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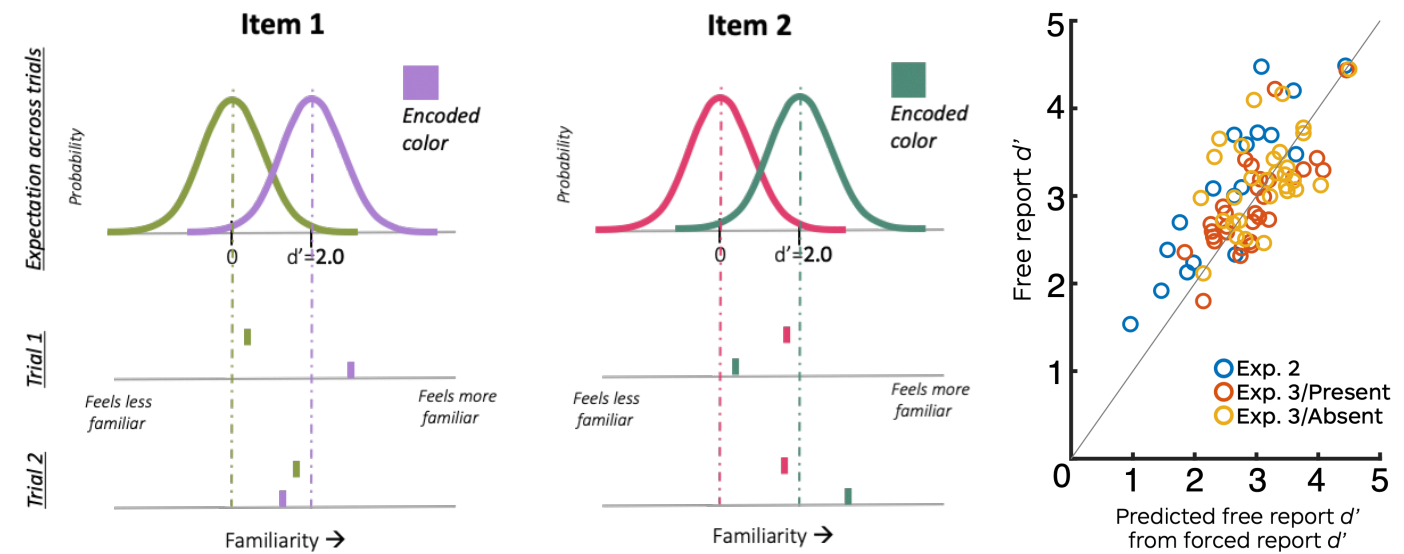
GUIDANCE AT WM SET SIZE 2

- A single WM item guides attention
- Whether this occurs for two items is less clear
- Two alternatives are suggested
 - Both items guide attention equally
 - Only one active WM item guides attention for one reason or another

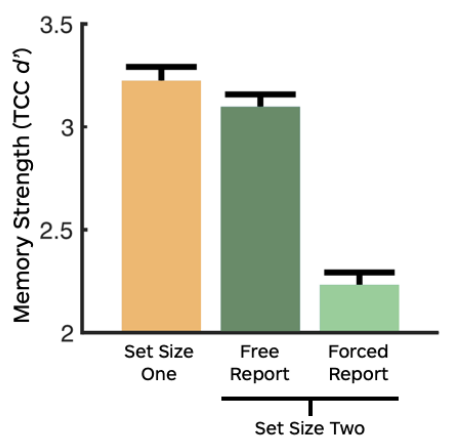


Participants remembered 1 or 2 colors and performed a visual search or memory task

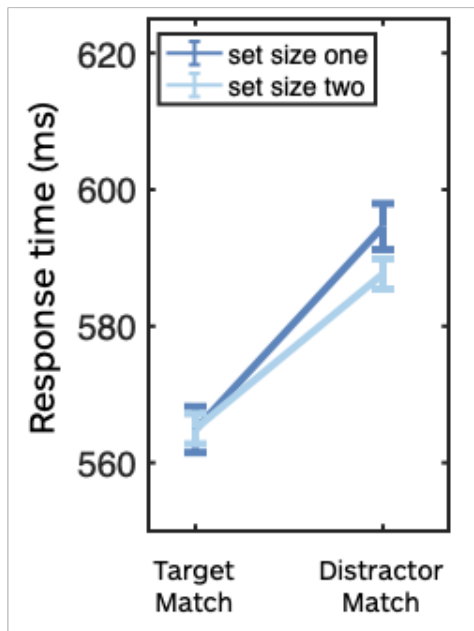
NATURAL VARIATION



The inter-item variance in memory strength is consistent with an independent noise account and the free report memory strength improvement is consistent with both items being encoded with the same precision (d')



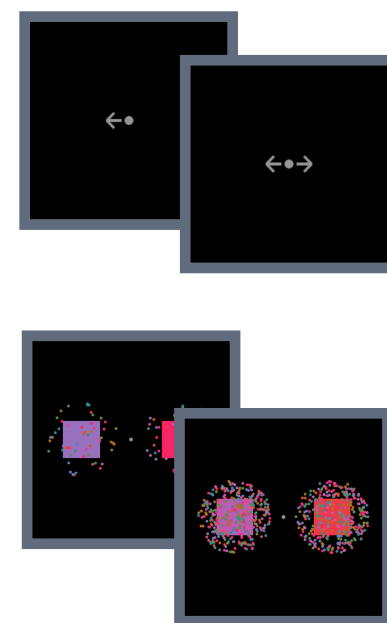
1 of 2 WM items is maintained with set size one like precision



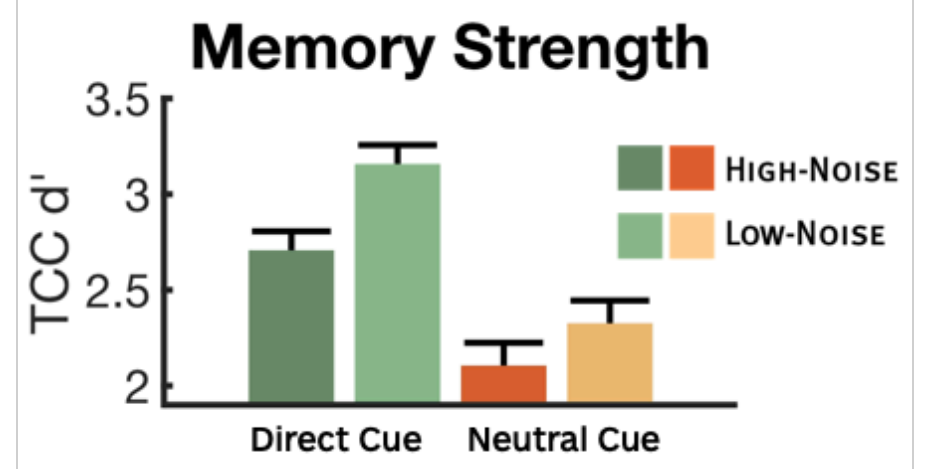
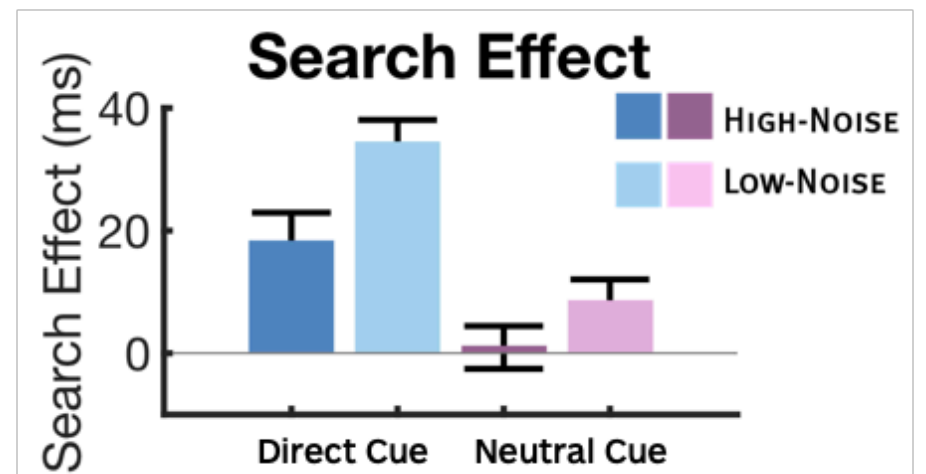
Attention is guided when 2 WM items are active.

Whether one, or both WM items are capable of guiding attention remains unclear

FOA AND MEMORY STRENGTH

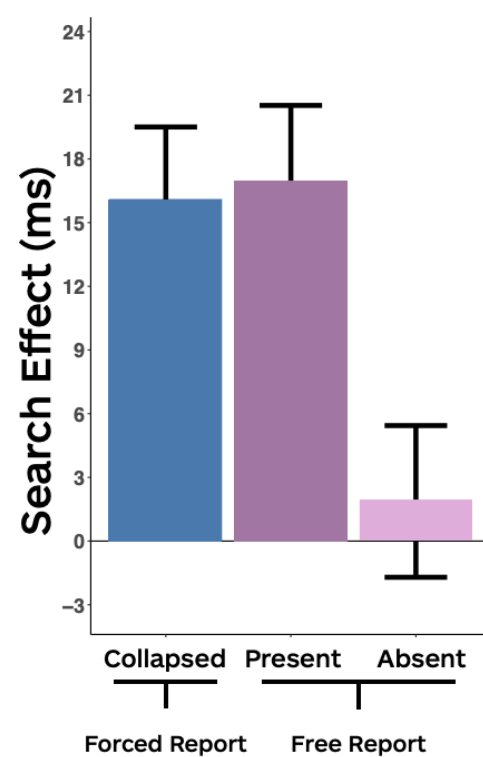
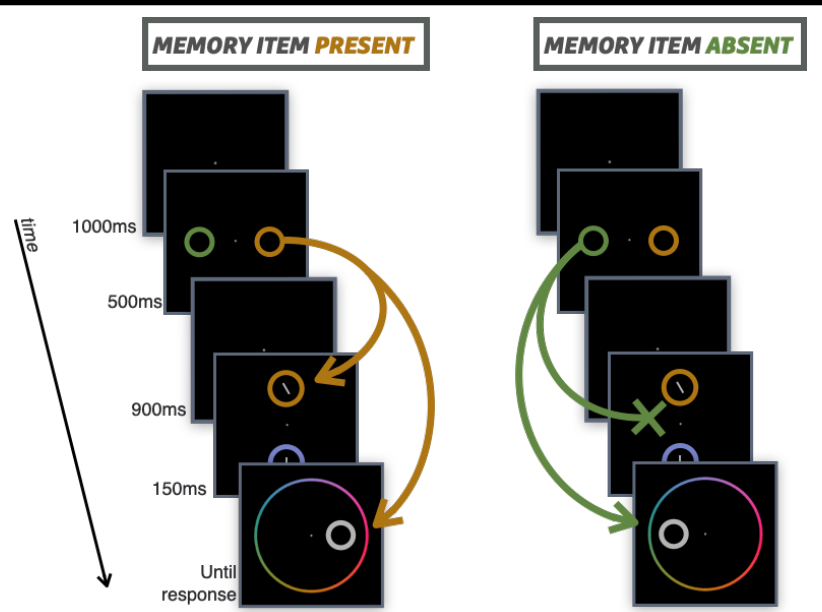


Retro-cues and perceptual noise manipulate both attention and memory strength independently

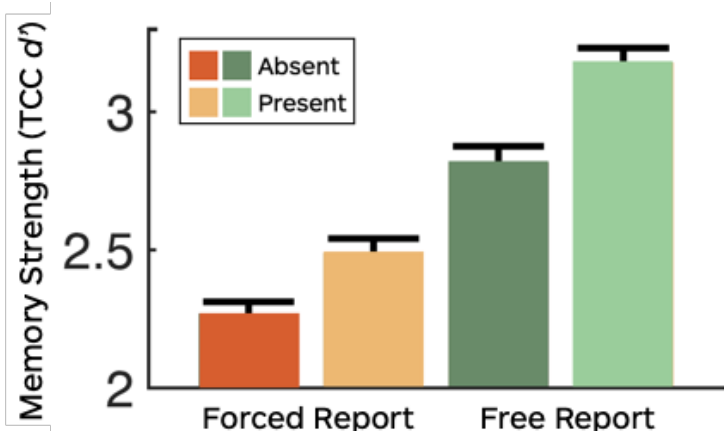


The search effect tracks memory strength

ONE ITEM GUIDES ATTENTION



Participants remembered 2 colors and memory was tested on every trial and were sometimes free to choose a WM item to report



An unchosen, poorly represented item does not guide attention (free report: absent)

These data demonstrate that one, not both WM items guide attention

CONCLUSIONS

- WM items are maintained with differential representational fidelity, and only well-represented items guide
- Memory strength differences between forced and free report are predicted by SDT and TCC
- The FOA doesn't grant a special status, it facilitates memory and increases the likelihood of guidance
- Across all experiments memory strength predicts the observed search effect(right)

