



Are items in working memory, but outside focal attention, stored via long-term memory?

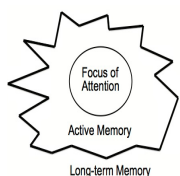
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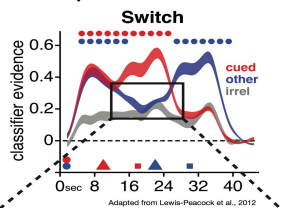


Introduction

Several memory models suggest a distinction between items inside and outside focal attention (FoA).



Neuroimaging and MPPA analyses provide no evidence for a neural trace of items retained in WM, but outside FoA.



Are items outside FoA processed via long-term memory?

Lewis-Peacock et al., 2012; LaRocque et al., 2013

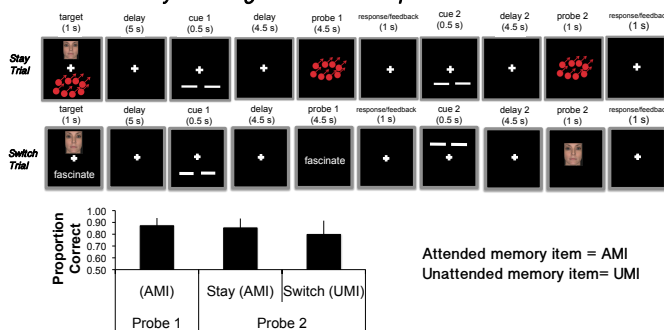
References

- Cowan, 2008, *Progress in Brain Research*
- LaRocque et al., 2013, *J. Cog. Neuro.*
- LaRocque et al., in press, *Mem. & Cog.*
- Lewis-Peacock et al., 2012, *J. Cog. Neuro.*
- Oberauer & Hein, 2012, *Curr. Dir. Psych. Sci.*

Experiment 1

Working Memory Task

Two-item delayed recognition task with prioritization cues



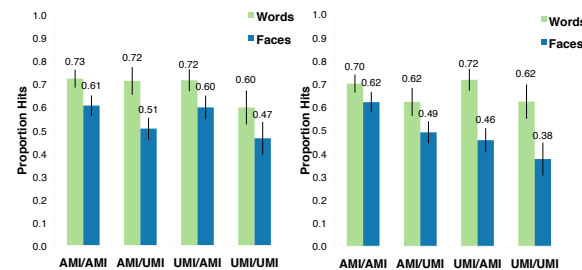
Attended memory item = AMI
Unattended memory item = UMI

Long-Term Memory Test

Surprise Subsequent Recognition Test of AMI and UMI

10 min delay group (n = 10)

2 hr delay group (n = 10)



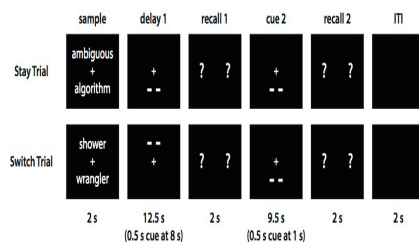
False Alarm Rate: Words = 19%, Faces = 38%

False Alarm Rate: Words = 29%, Faces = 43%

Experiment 2

Working Memory Task

Two-item delayed recall task with prioritization cues



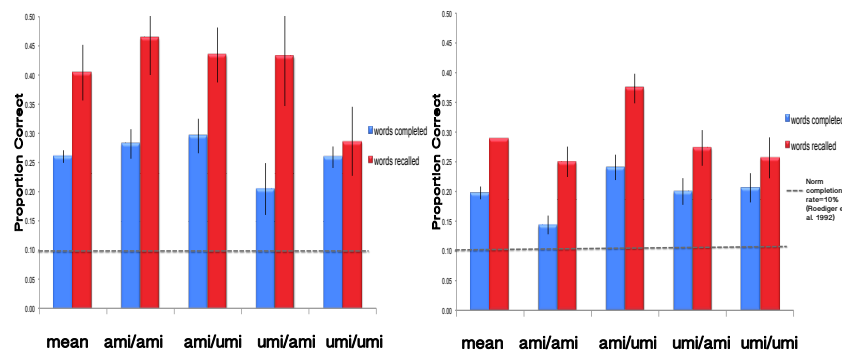
Recall Performance Estimate = 99.9% correct

Long-Term Memory Test

Surprise Subsequent Word-Stem Completion and Cued Recall

AMI/AMI: *algorithm*

UMI/UMI: *ambiguous*



10 min delay group (n=11)

2 hr delay group (n=15)

Conclusions

- Unattended memory items are not preferentially represented in LTM.
- Rather, subsequent LTM depends on the amount of active processing in WM (i.e., number of times cued).
- These findings replicate and extend those of LaRocque et al., in press, *Memory & Cognition*.