

Automatic Multi-Location Inhibition of Return

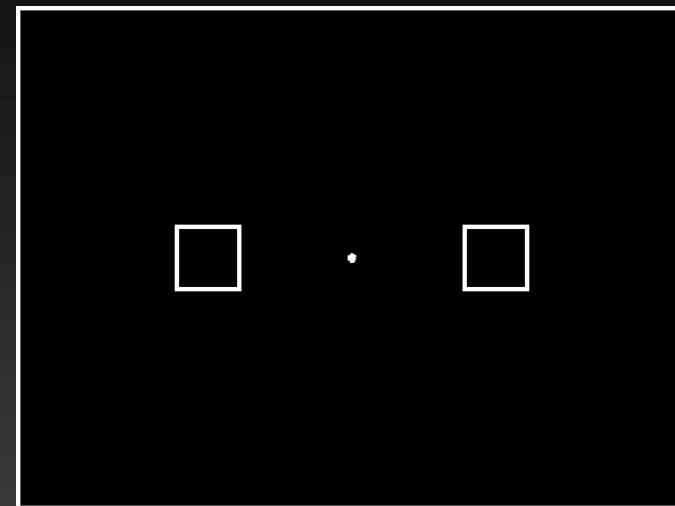
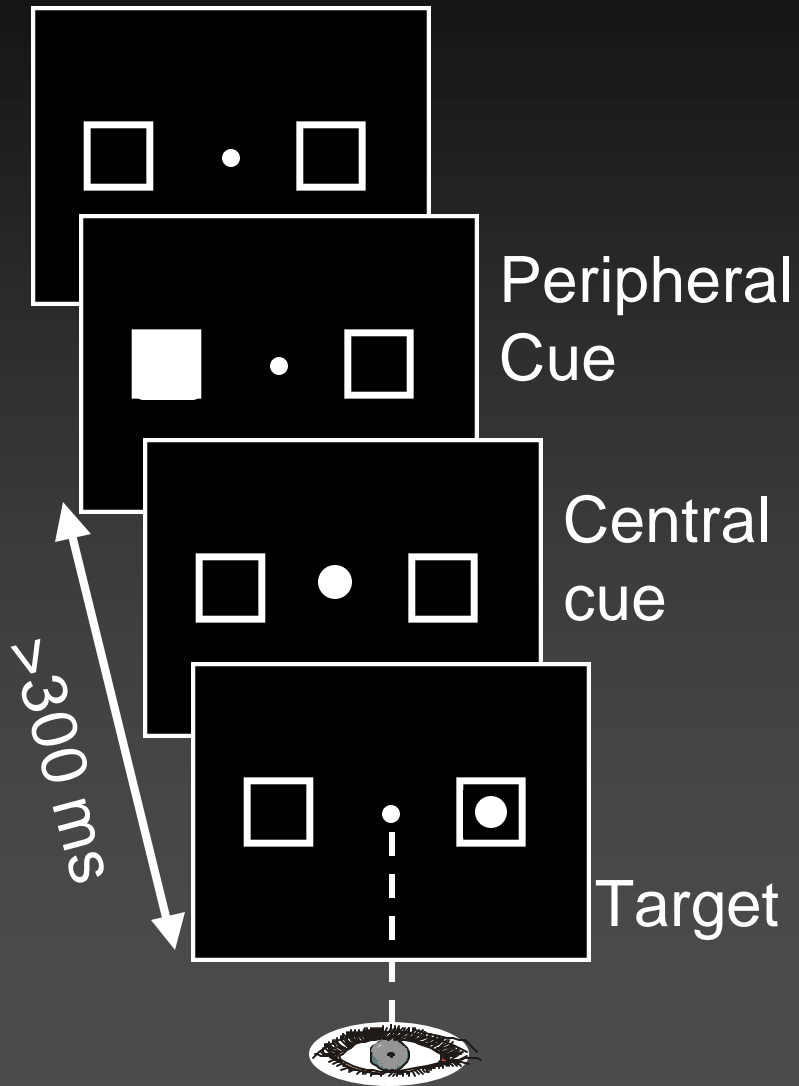
William H. Knapp III

Richard A. Abrams

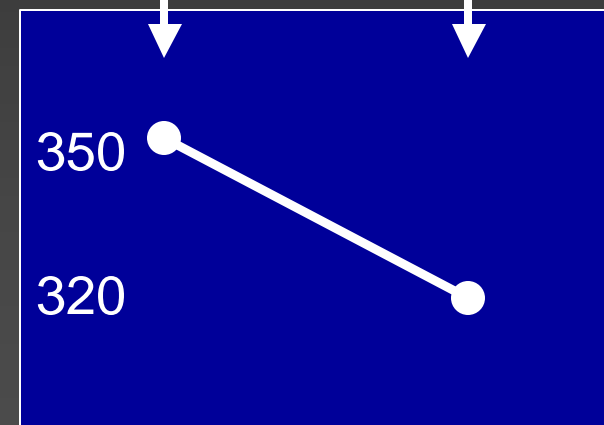




Inhibition of Return (IOR)



RT



Cued

Uncued

Multiple location IOR?

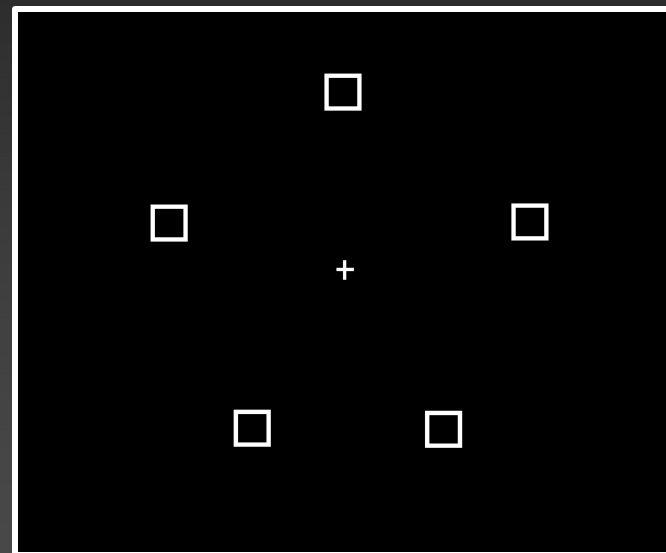


Multiple location IOR?

- Pratt & Abrams (1995): “No.”
- Tipper et al. (1996): “Yes.”
- Abrams & Pratt (1996): “Maybe.”
If cued locations are contiguous.
- Danziger, Kingstone, & Snyder (1998),
Snyder & Kingstone (2001): “Maybe.”
If cues must be attended.

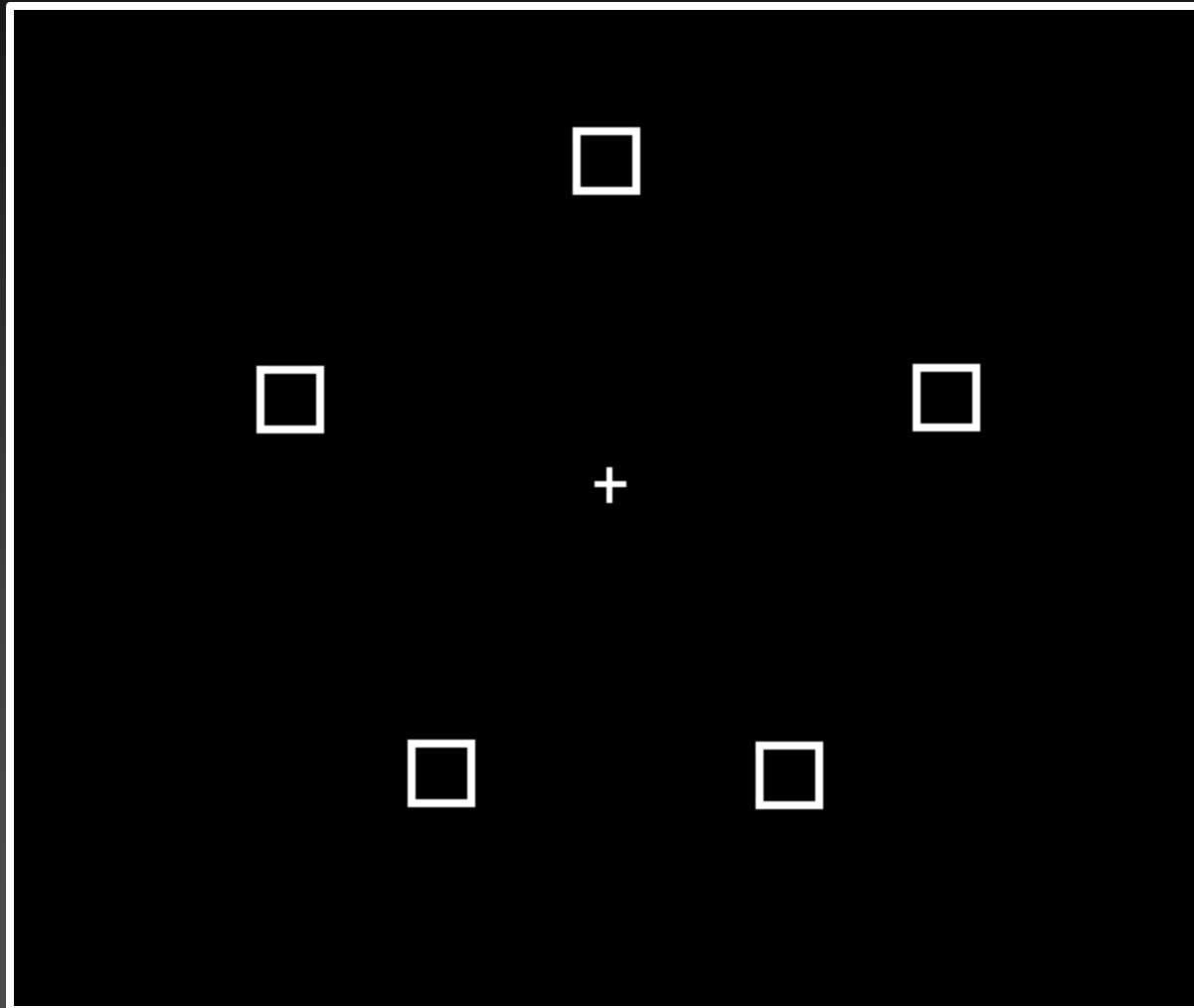
Experiments

- Five objects
- Two successive uninformative peripheral cues
- Predictable timing
- Detect target onset
- Catch trials



Experiment 1

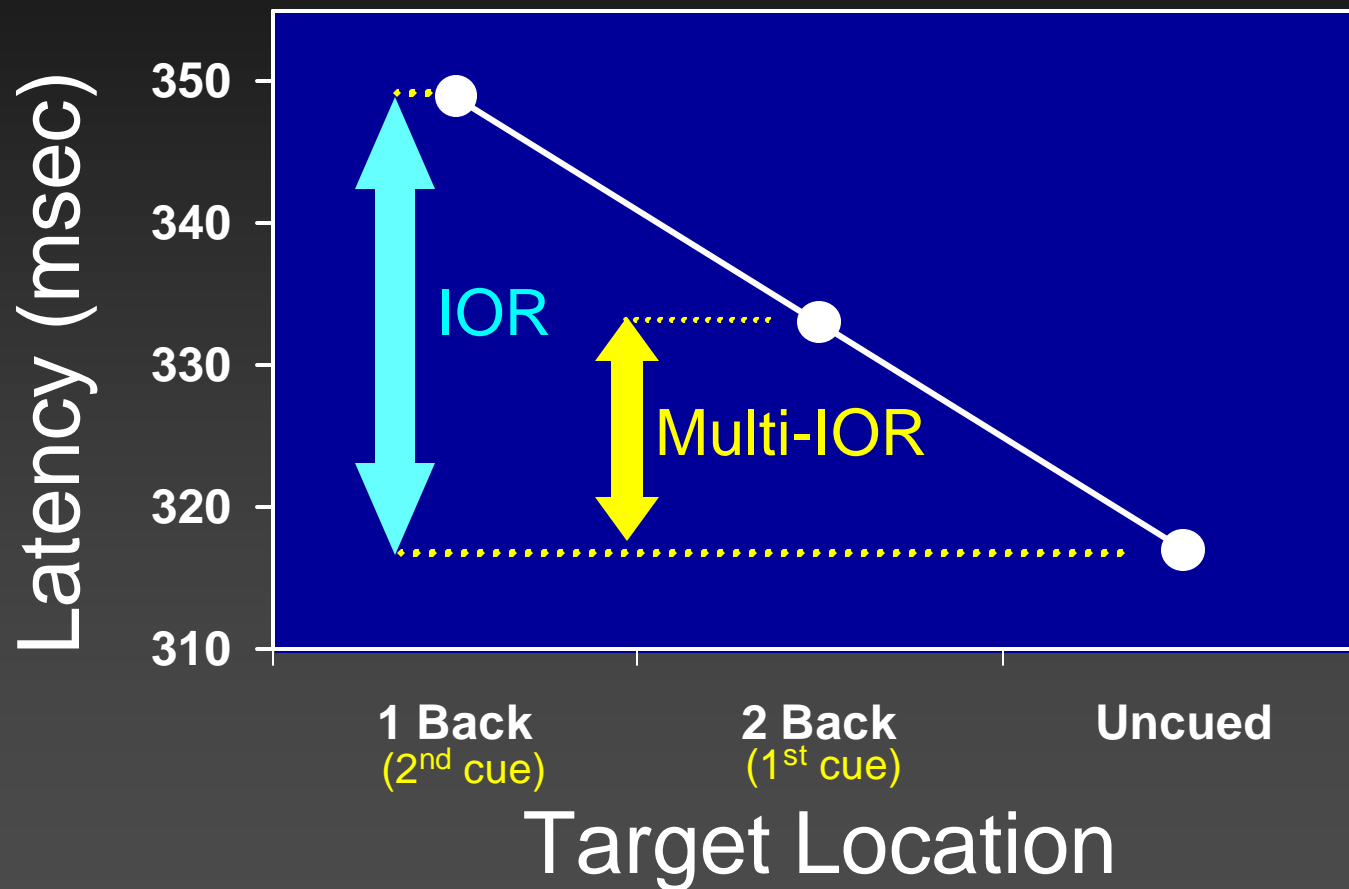
Two cues, central flash



17% catch trials
750 ms soa

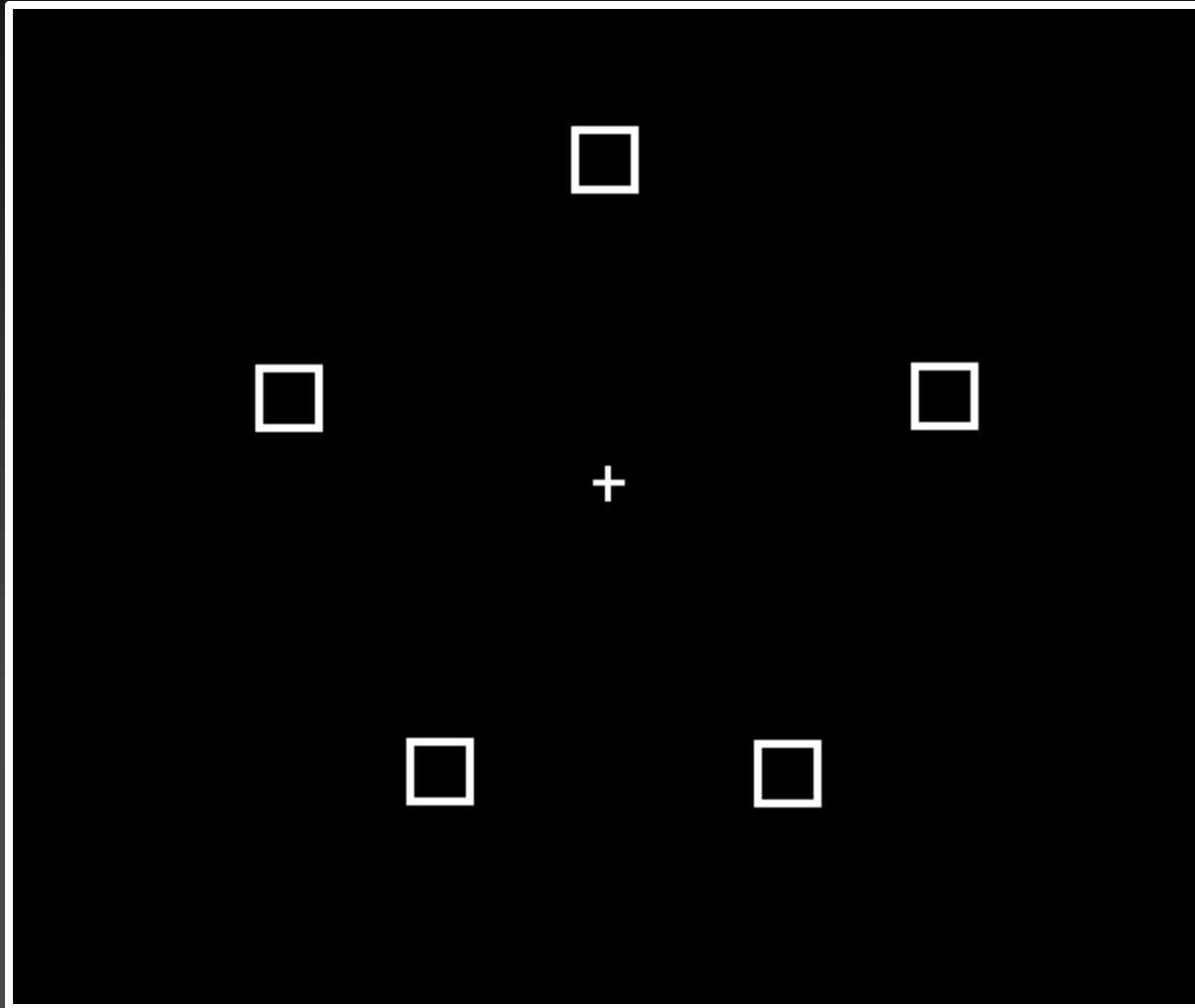
Experiment 1

Two cues, central flash



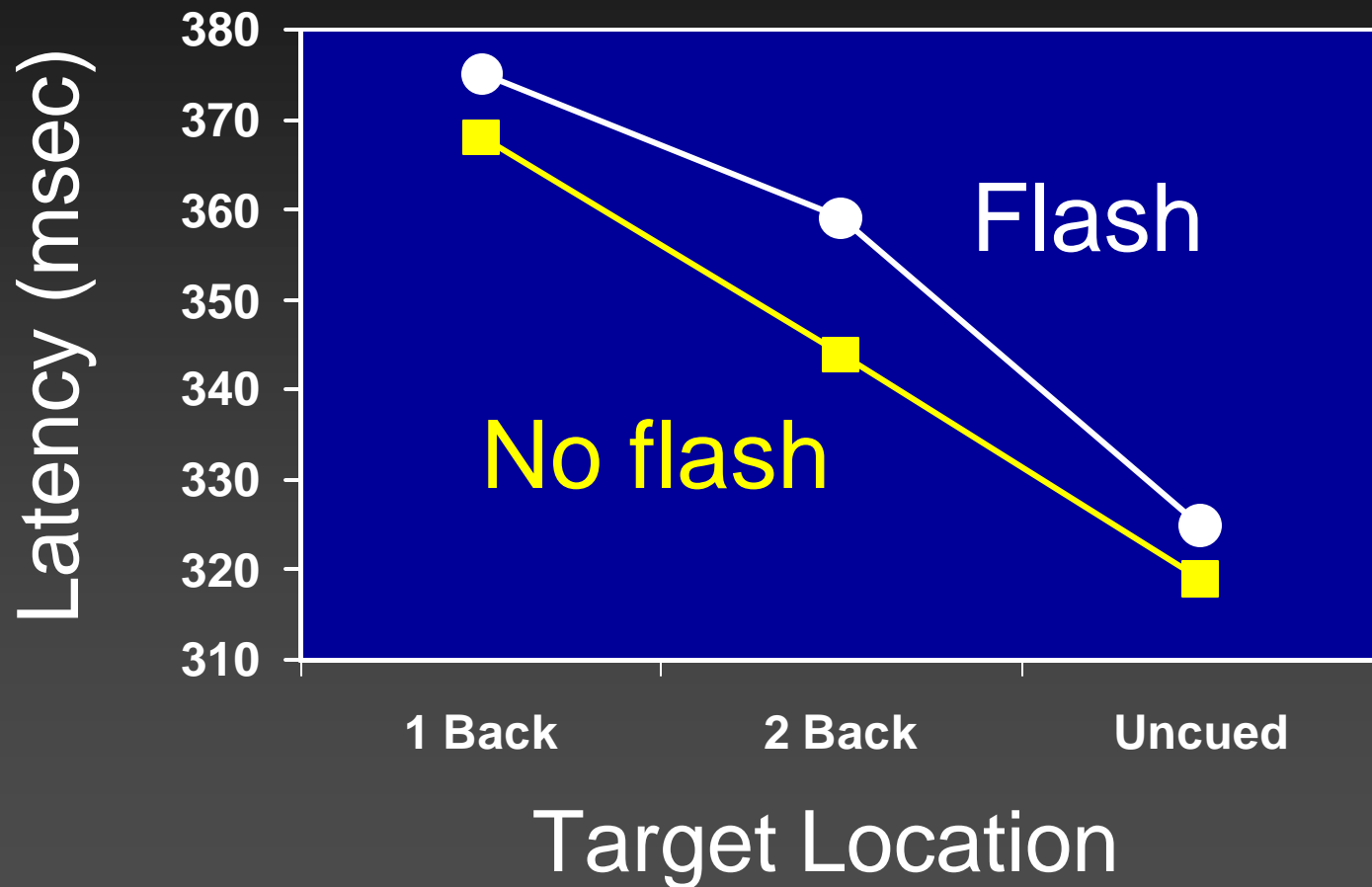
Experiment 2

Flash coincident with cues



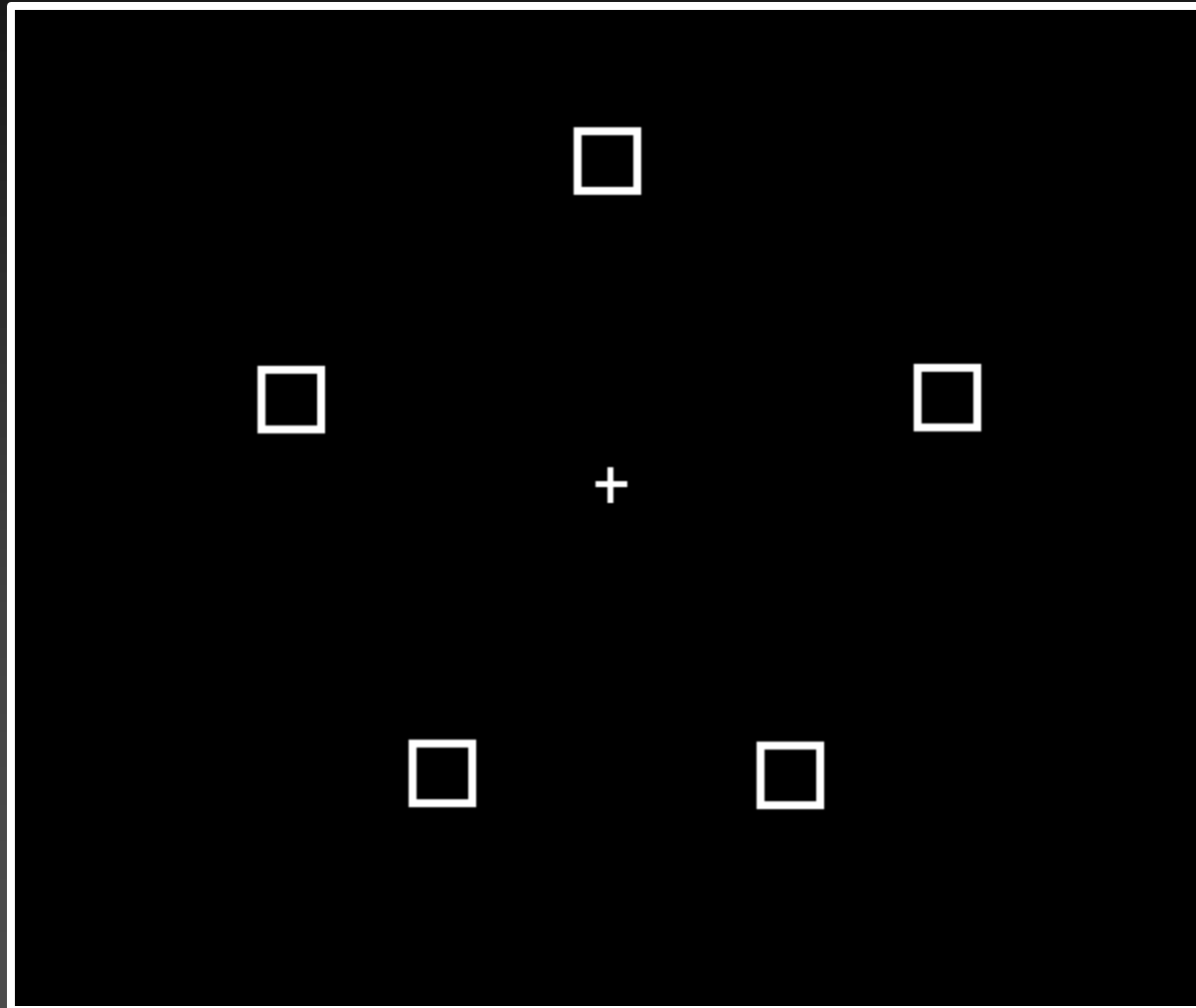
Experiment 2

Flash coincident with cues

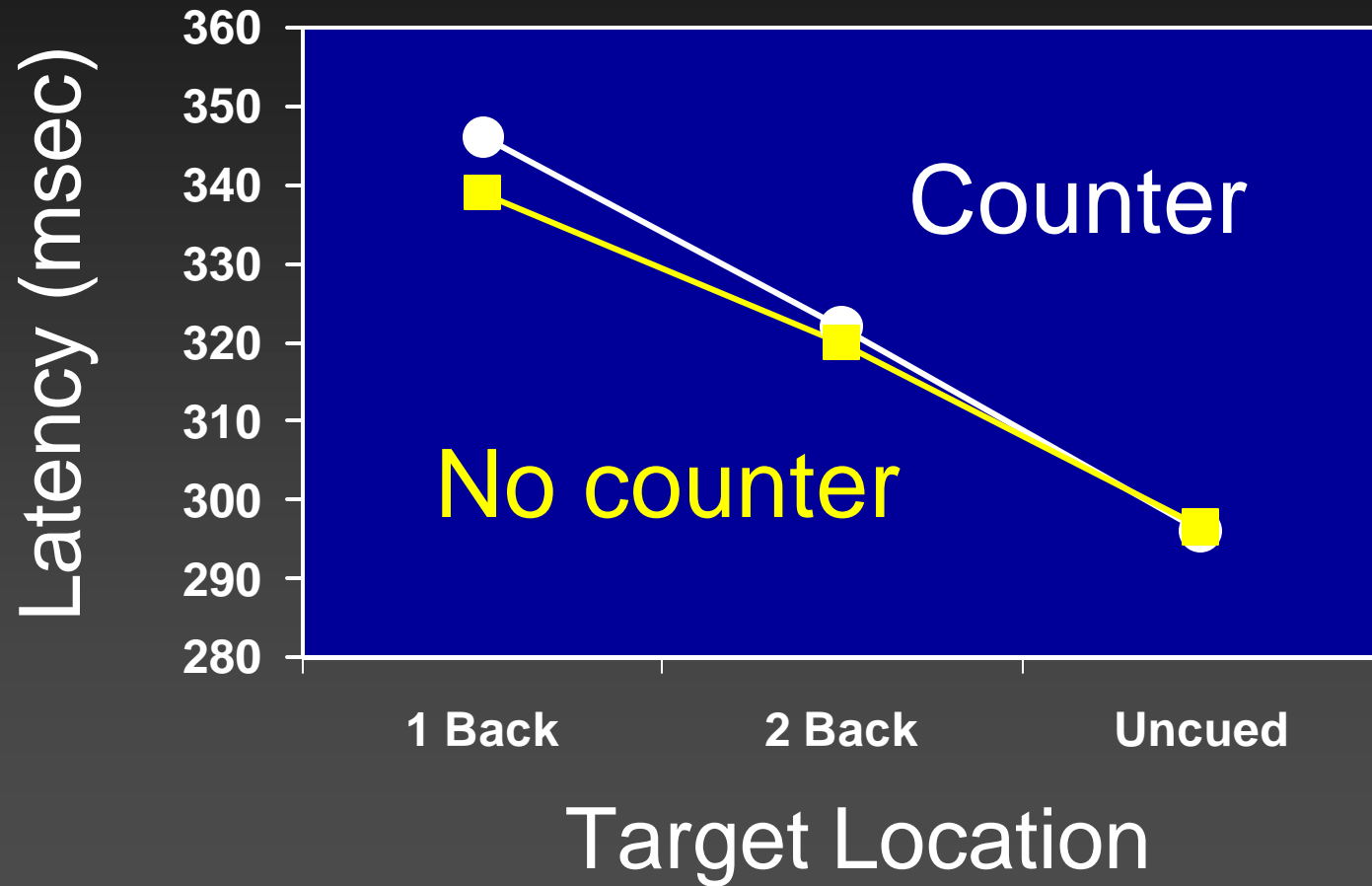


Experiment 3

Counter



Experiment 3 Counter

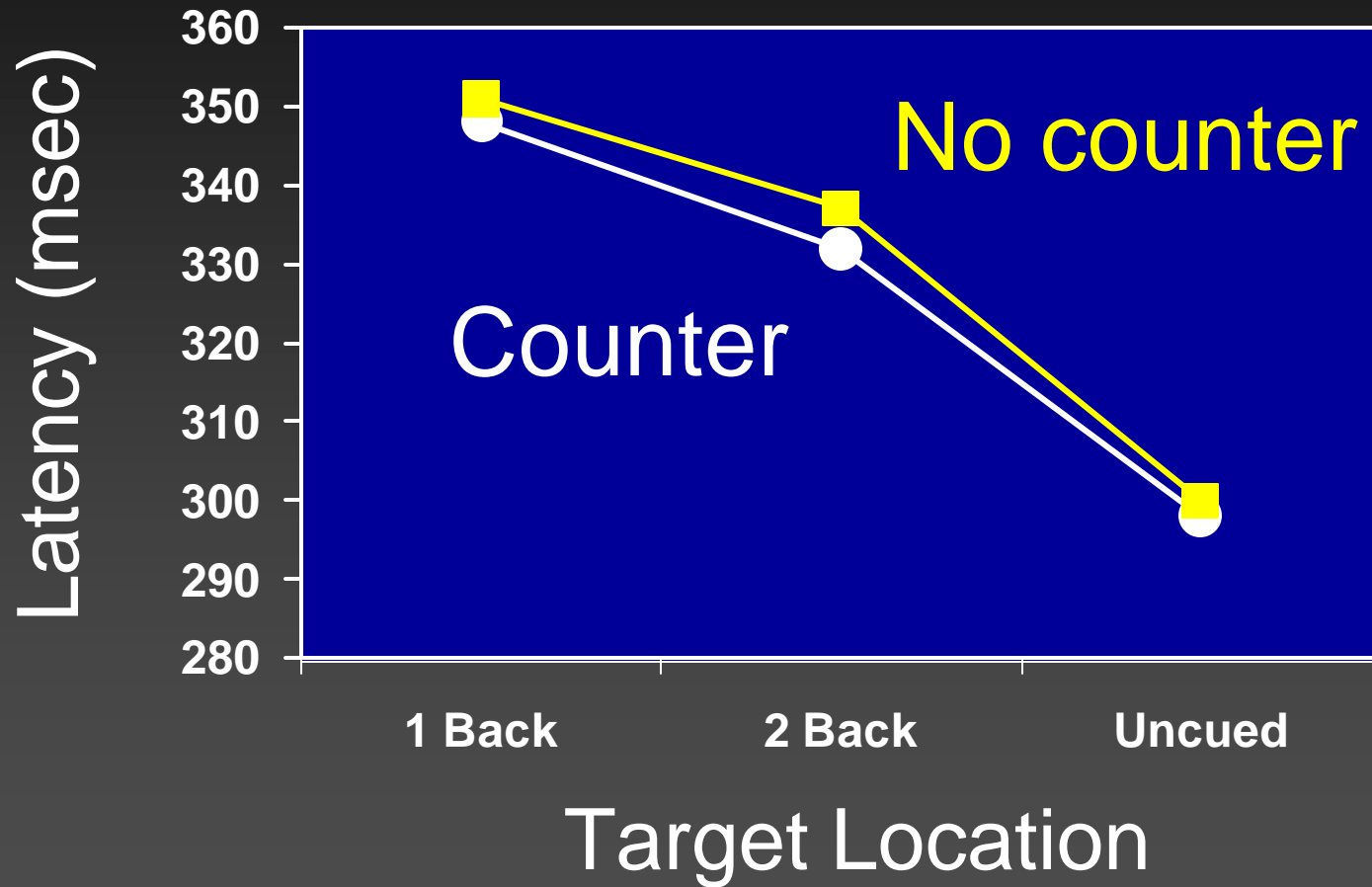


Experiment 4

Instructions

“Use the counter.”

Experiment 4 Instructions



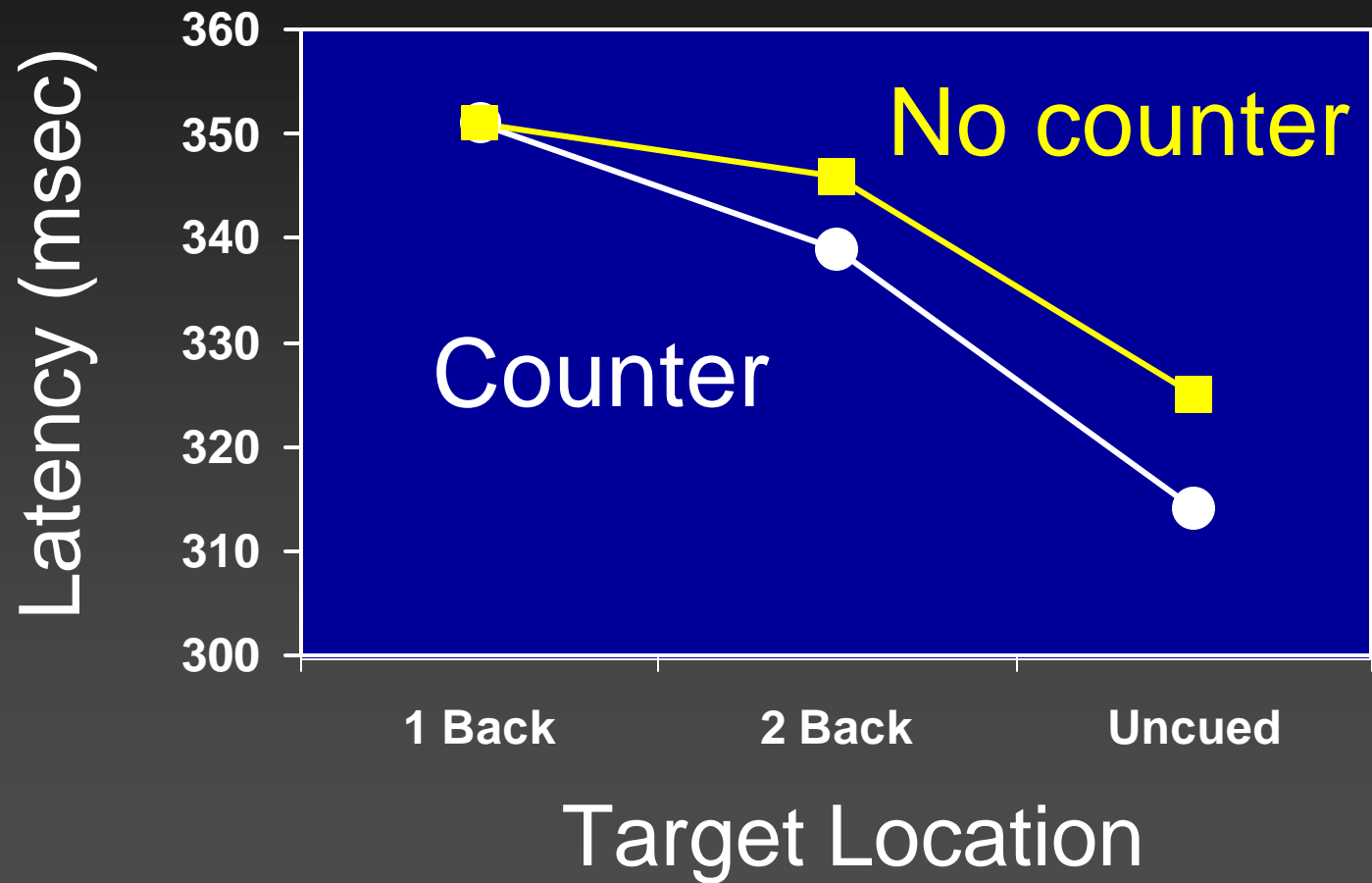
Experiment 5

Timing

Experiments 1 – 4:
750 ms SOA

Experiment 5:
1500 ms SOA

Experiment 5 Timing



Experiment 6

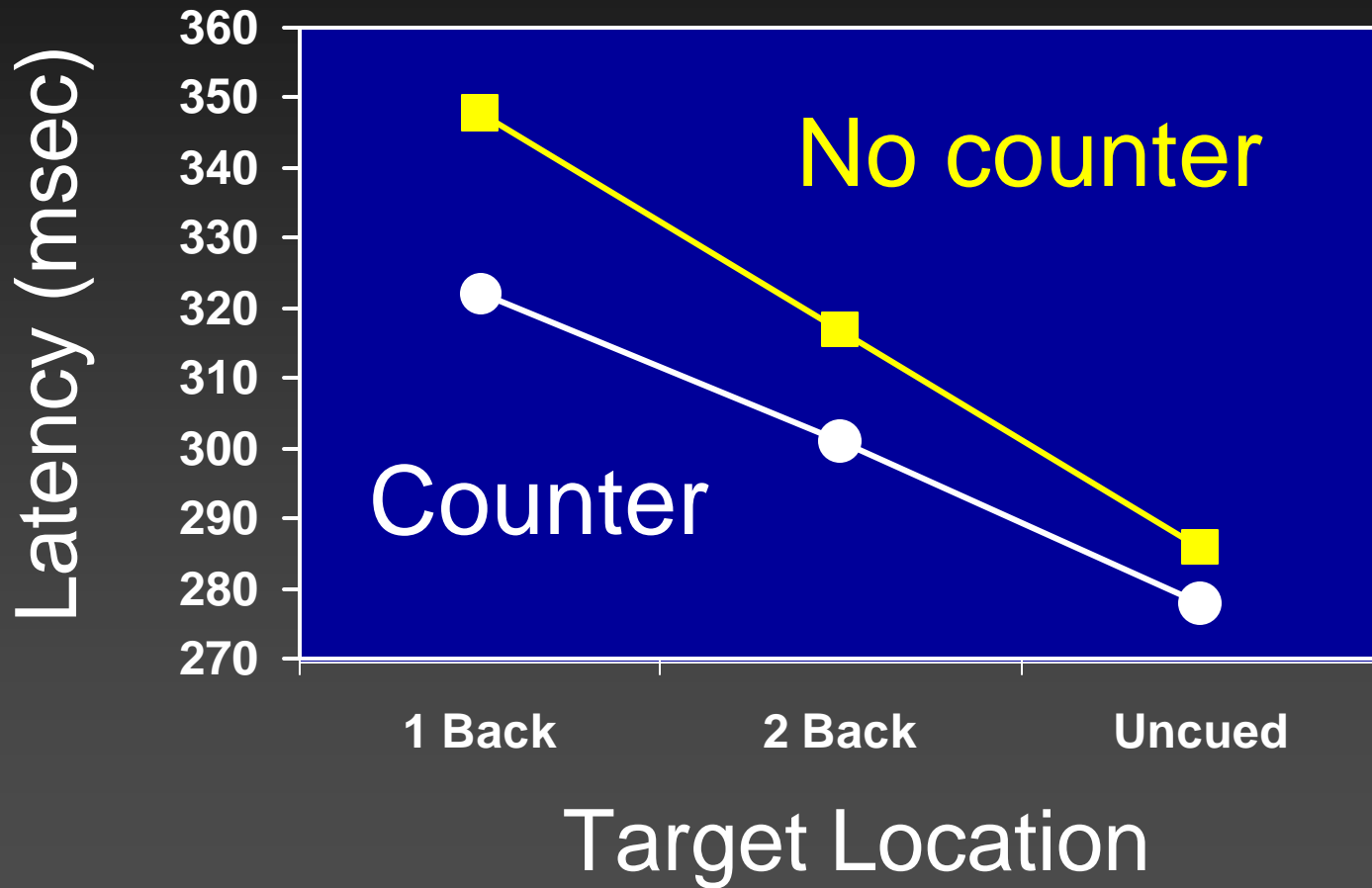
Big targets

Experiments 1 – 5:
 $.25^\circ \times .25^\circ$

Experiment 6:
 $.75^\circ \times .75^\circ$

Experiment 6

Big targets



Experiment 7

Cue n blocked/mixed

Mixed:

1, 2, or 3 cues prior to the target.

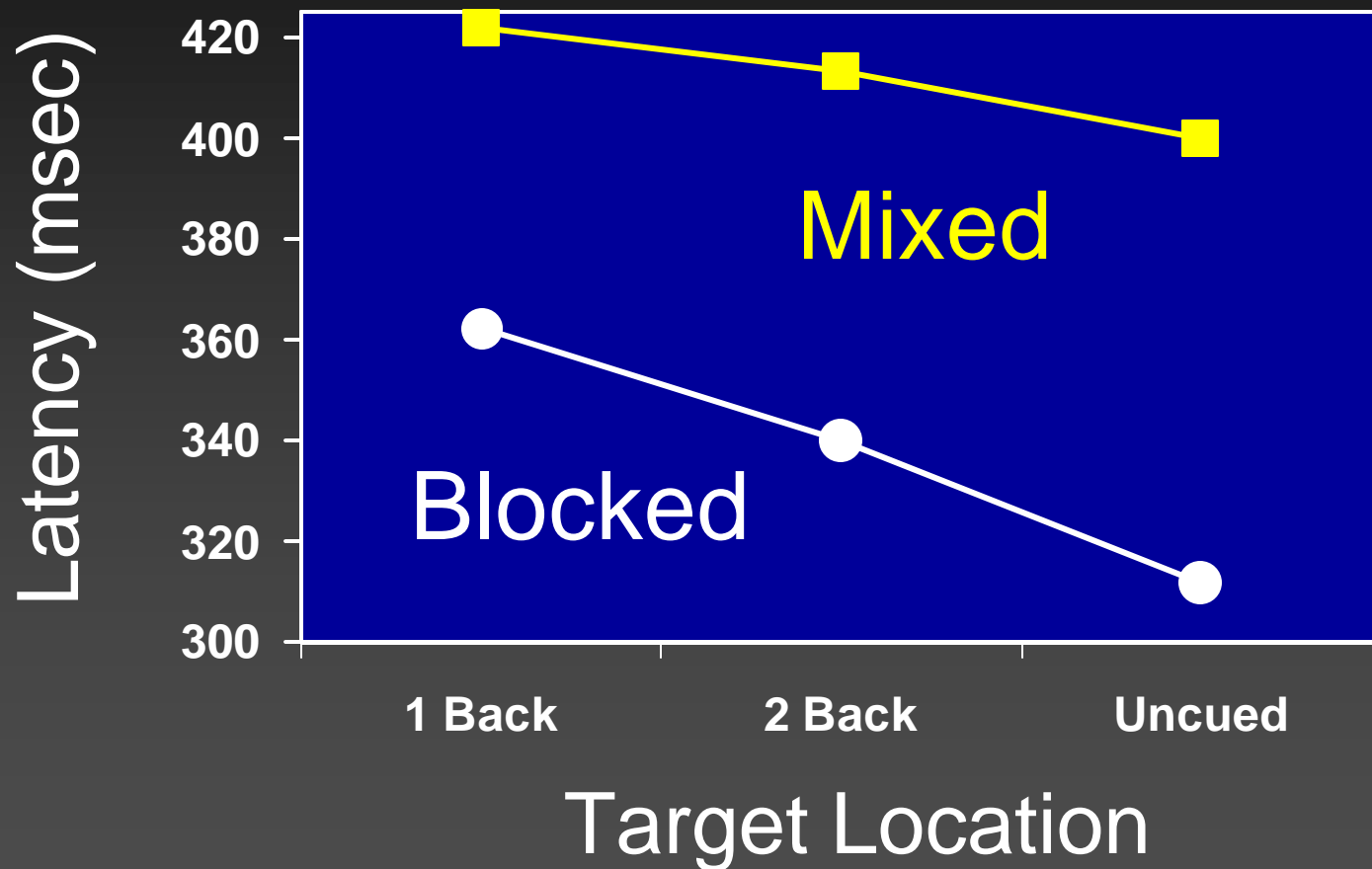
Blocked:

2 cues on every trial.

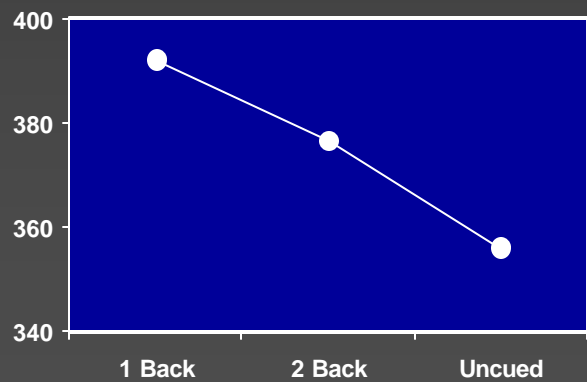
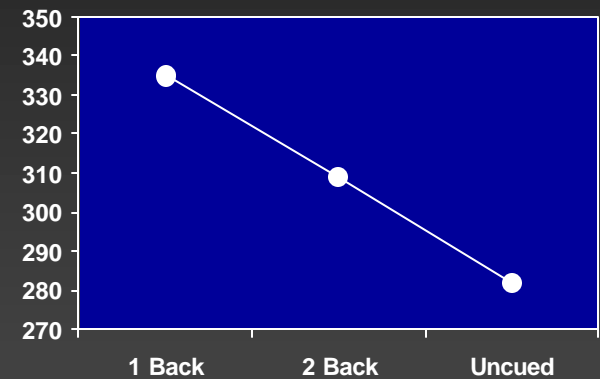
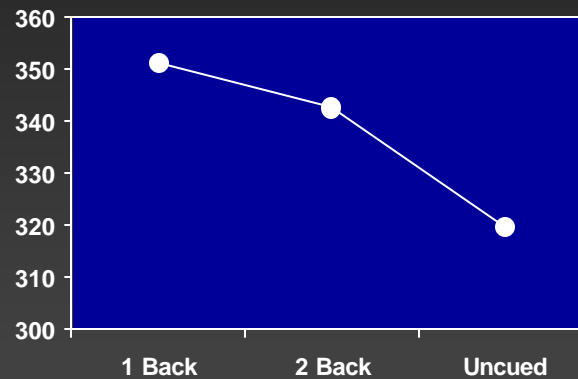
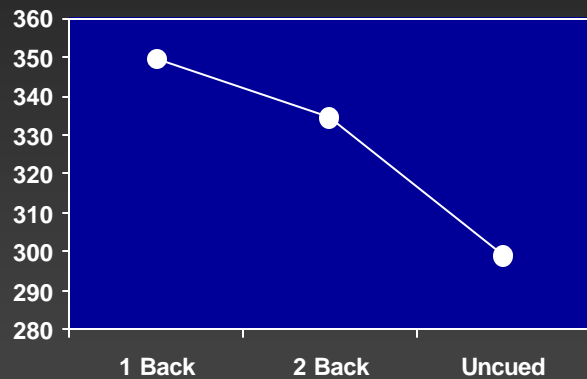
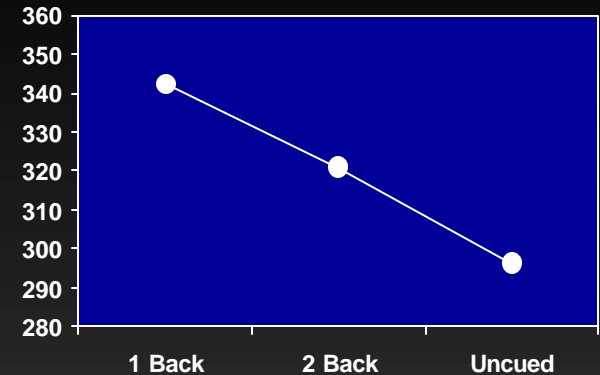
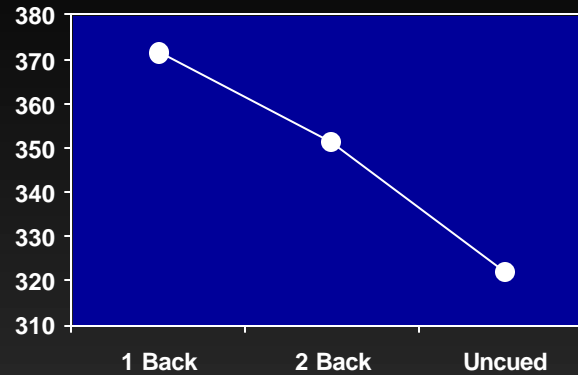
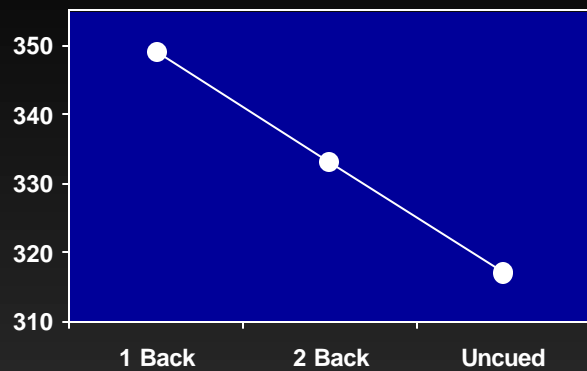
“Use the counter.”

Experiment 7

Cue n blocked/mixed



Intermediate conclusions

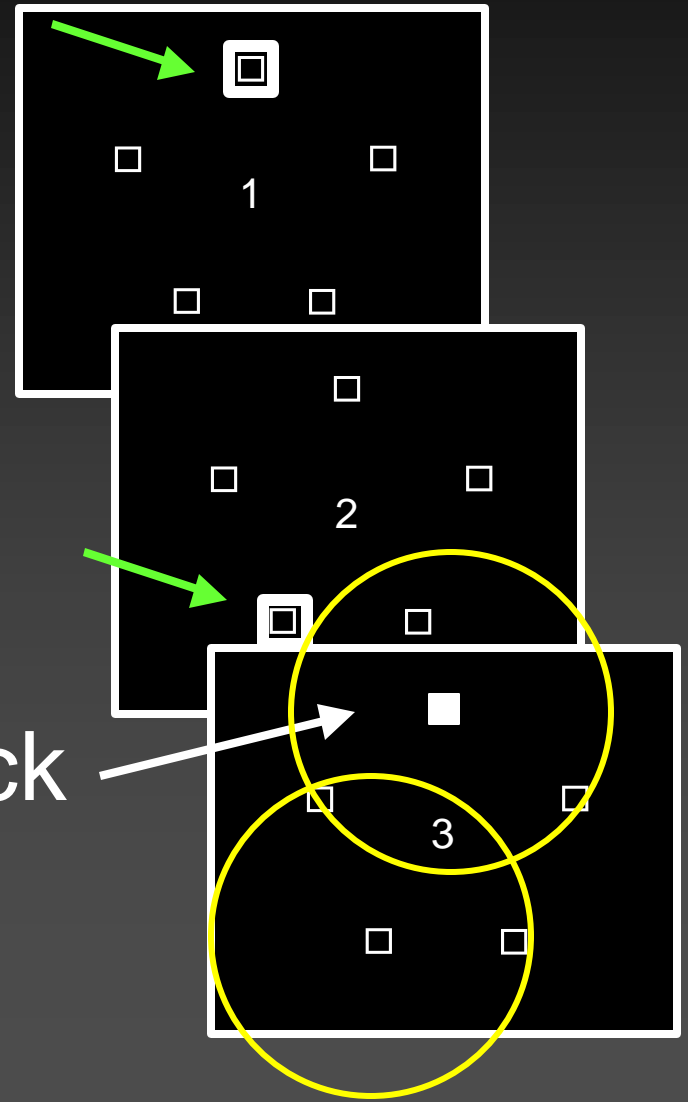
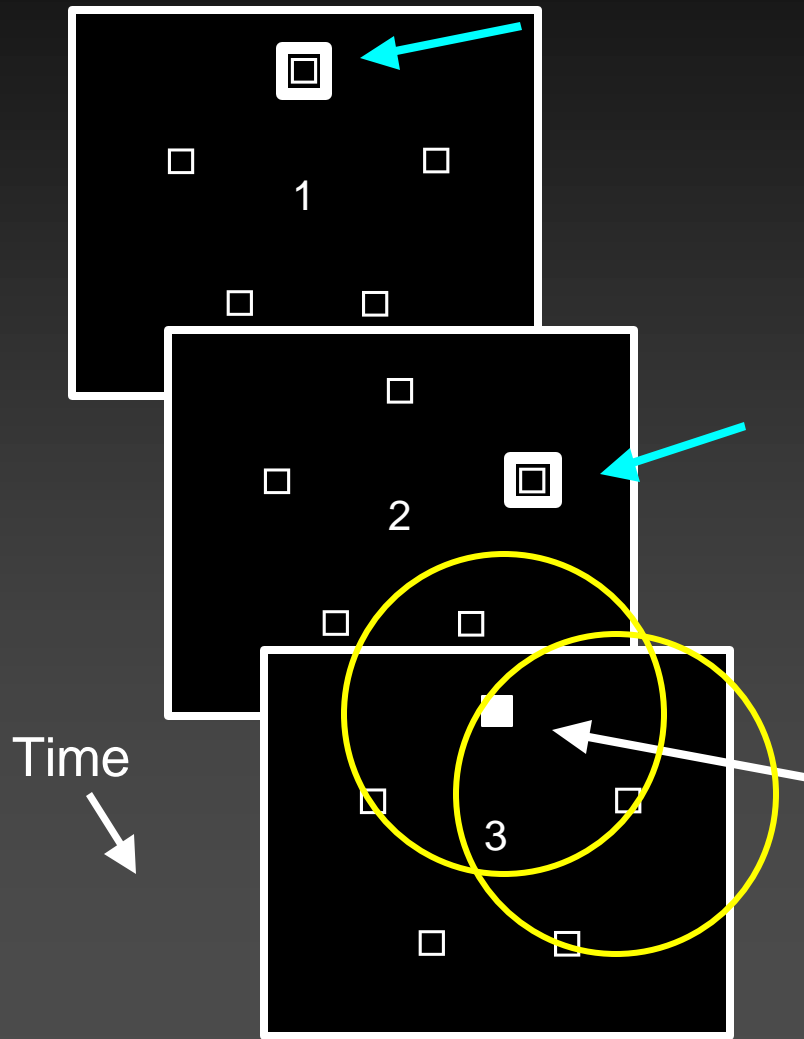


- IOR accrues to several cued locations
- Multi-IOR does not require need to attend
- IOR is strongest for most recently cued location, weaker for 2-back

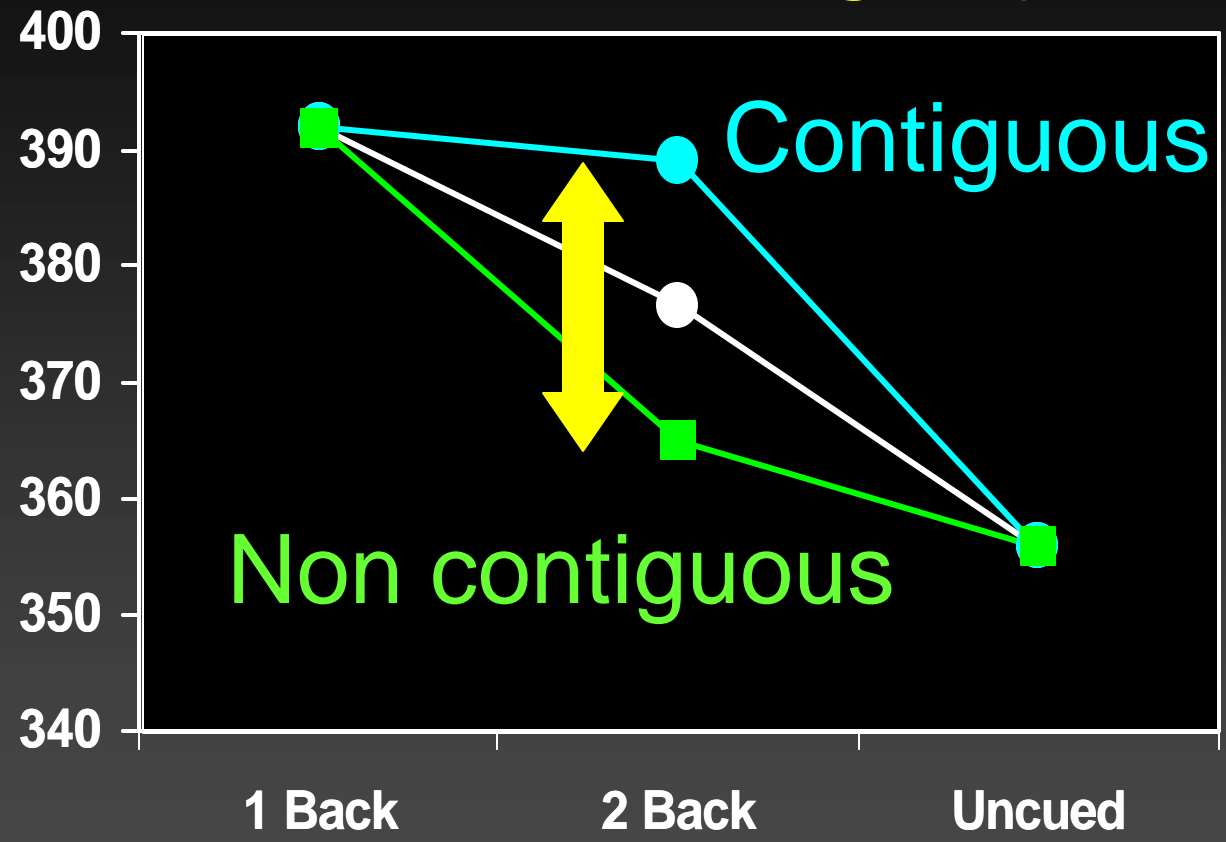
Cue Contiguity

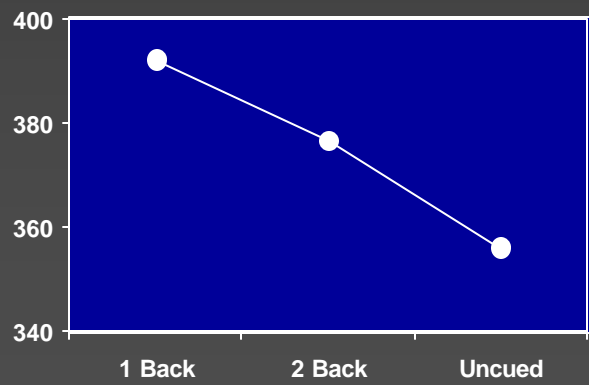
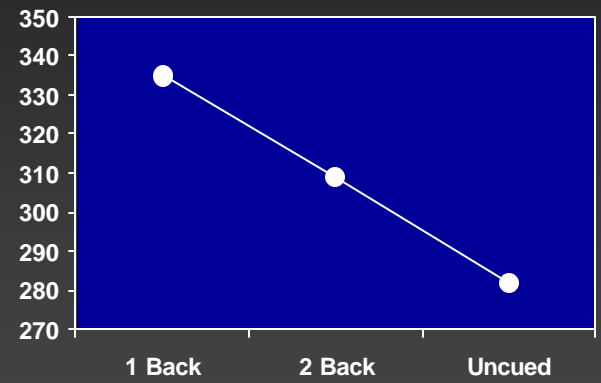
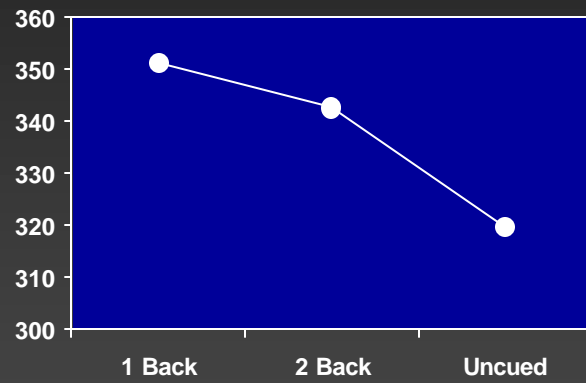
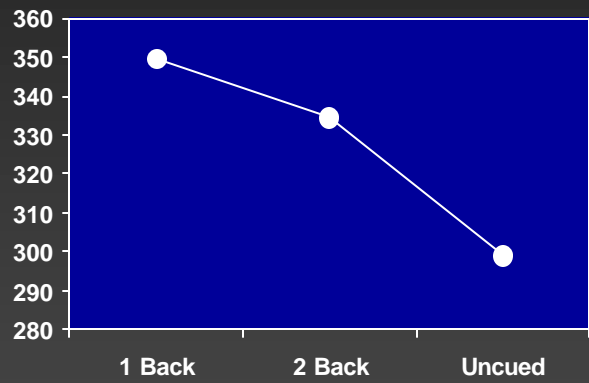
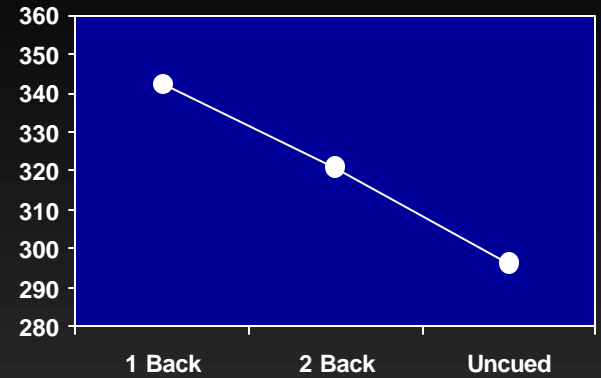
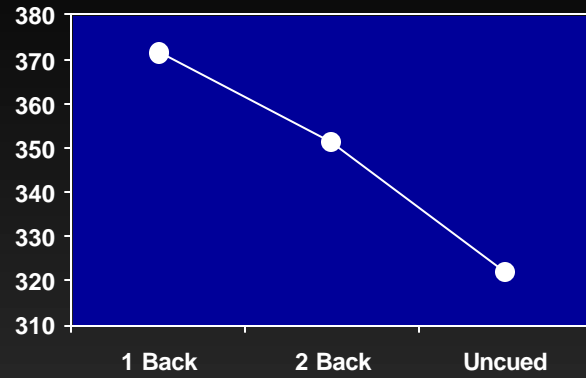
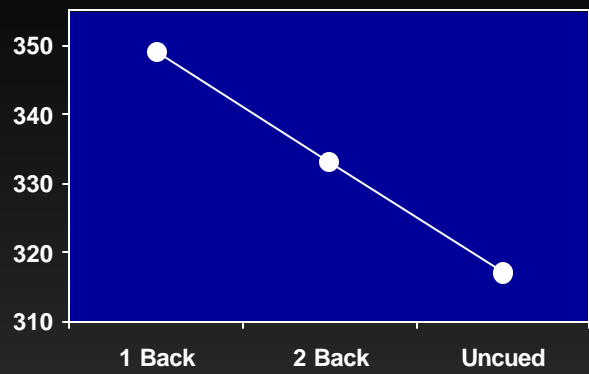
Contiguous cues

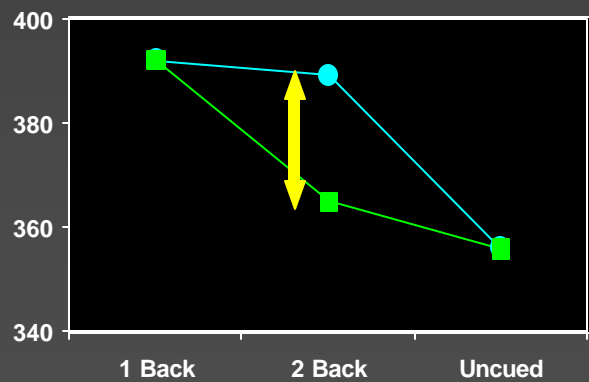
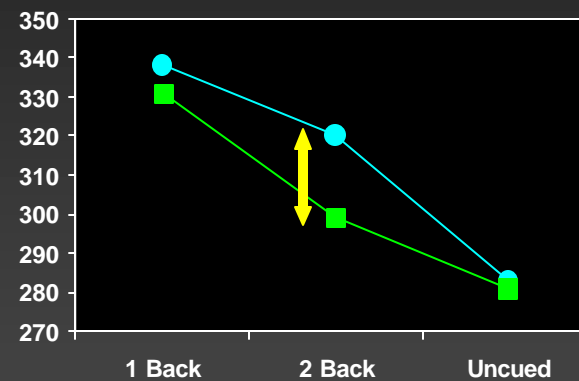
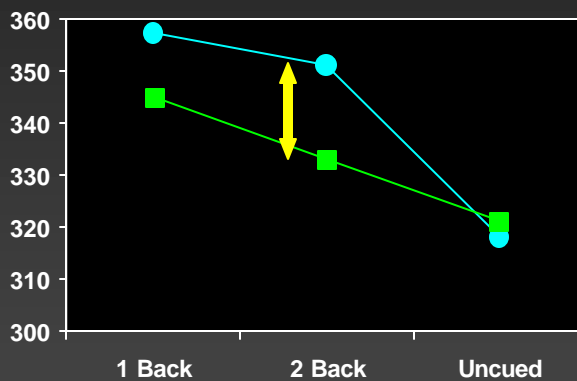
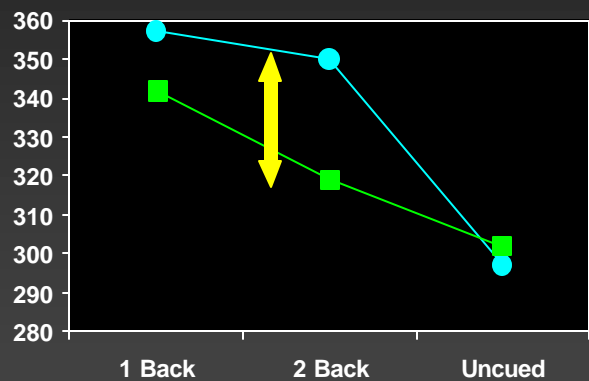
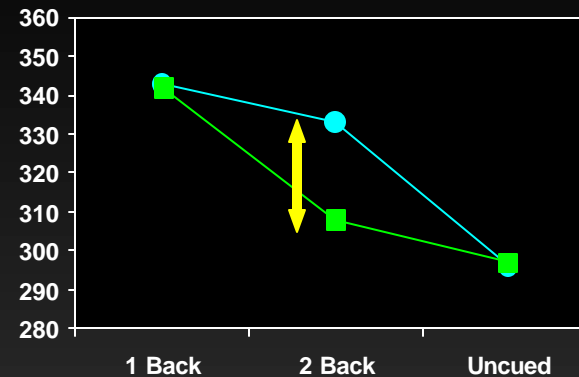
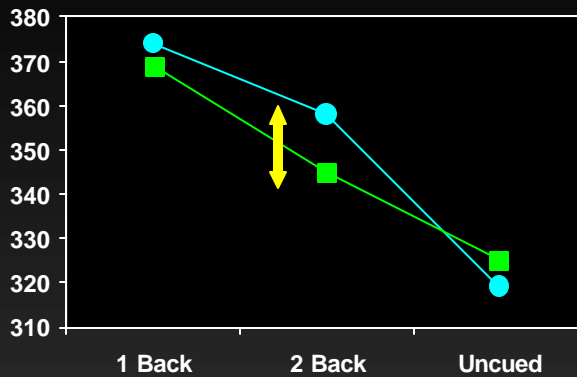
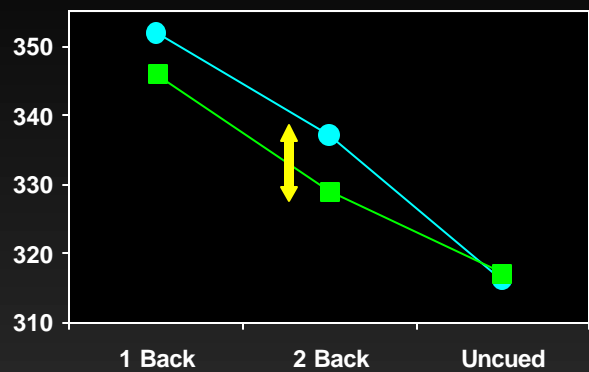
Non contiguous cues



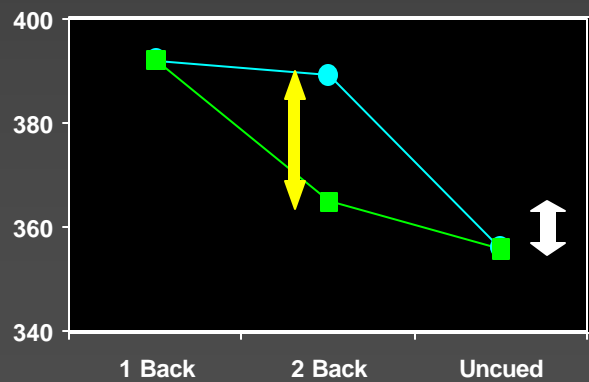
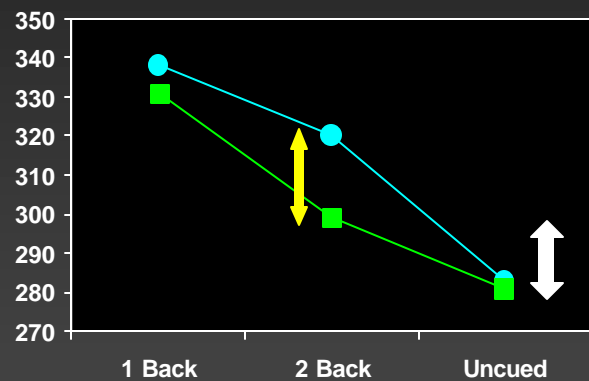
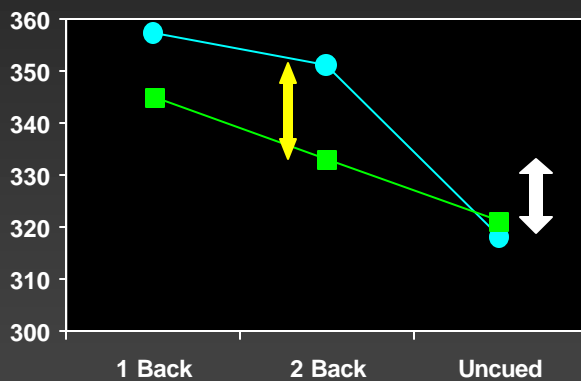
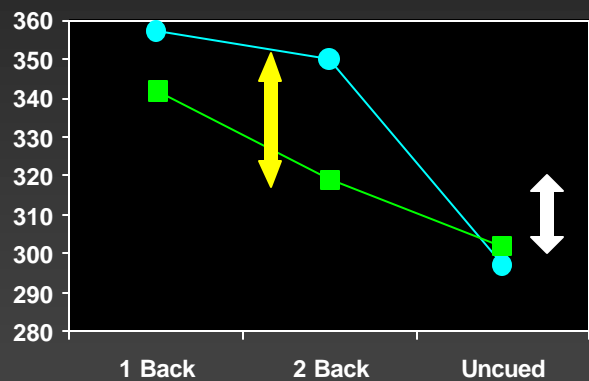
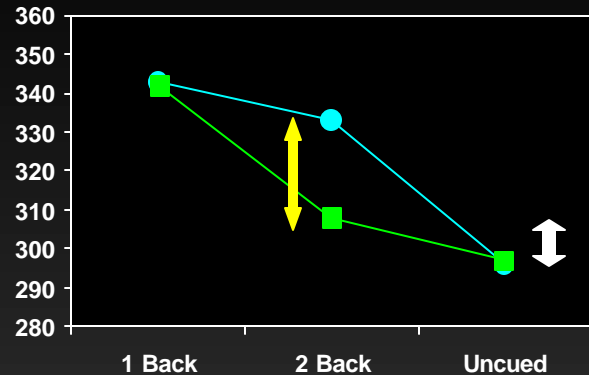
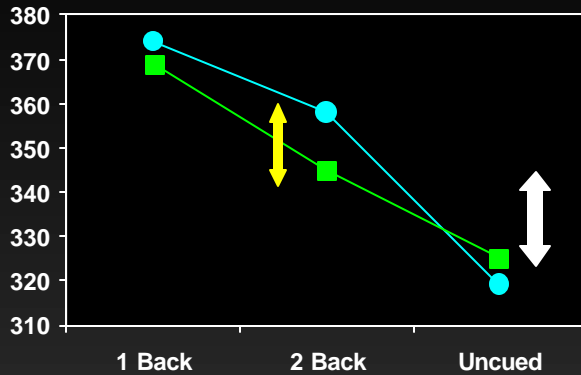
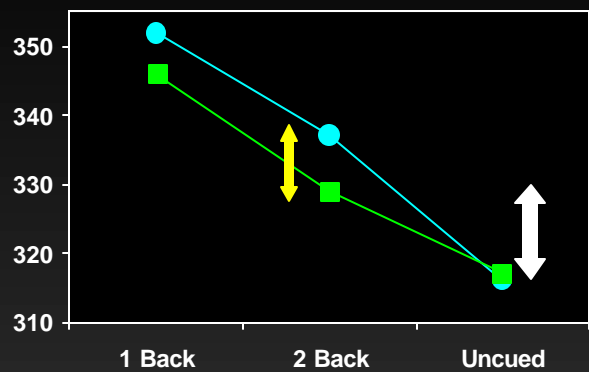
Cue Contiguity











● Contiguous cues
 ■ Non-contiguous cues

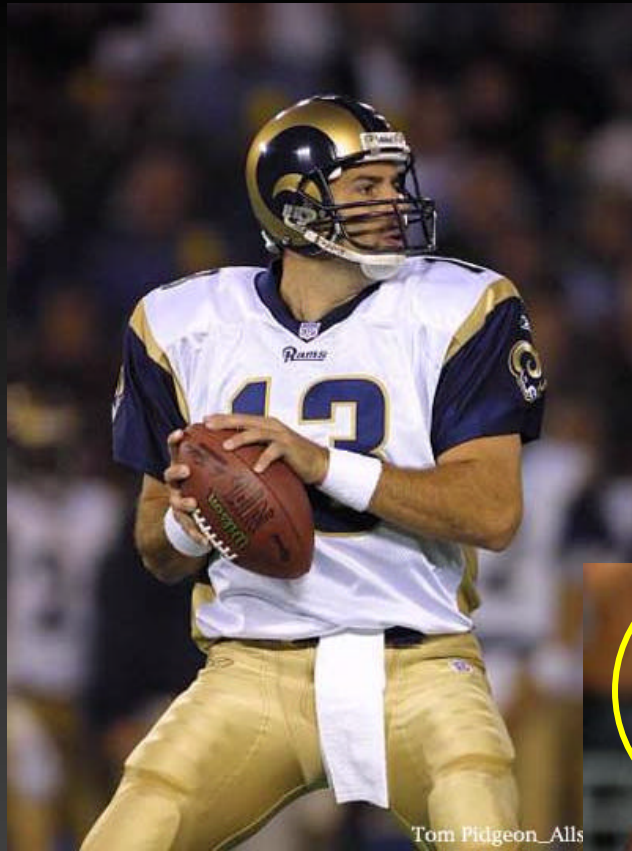


 Contiguous cues
 Non-contiguous cues
 Automatic multi-location Inhibition of Return
 Automatic multi-location Inhibition of Return

Conclusions

- Multiple-location Inhibition of Return occurs regardless of the “need to attend”.
- Inhibition of Return is greatly enhanced when the cued locations are contiguous.
- Overlapping regions of inhibition can have combined effects.

Contiguous cues



Non contiguous cues

