Does Contextual Cueing Guide the Deployment of Attention?

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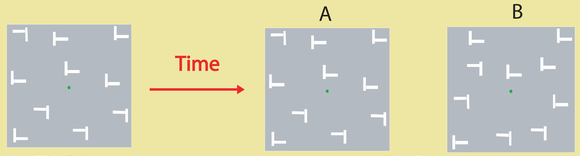
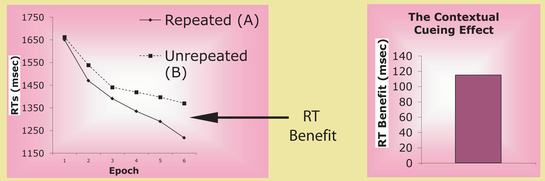
Contextual Cueing

In contextual cueing (Chun & Jiang, 1998), repeating the search display (Display A) reduces RTs, compared to an unrepeated search display (Display B)





Attentional Guidance

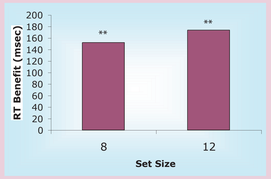
1. Improves search efficiency
2. Can Guide to multiple locations
3. Little impairment if the location of the target on one trial is the location of the distractor on the next

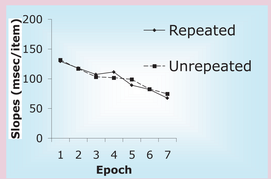
Is Contextual Cueing a form of Guidance?

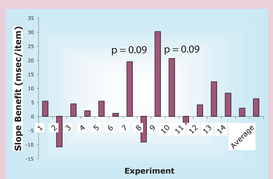
1) Does Contextual Cueing Improve Search Efficiency?

NO

Repeating the display reduced RTs, but not slopes







Fifteen Replications!

Even over the course of fifteen experiments, little improvement in search efficiency was found

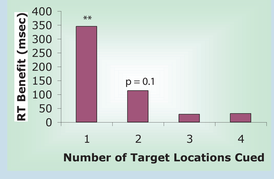
2) Can you Contextually Cue Multiple Locations?

Limited Cueing

Targets could appear in up to 4 locations

The configuration of the display was kept constant by square placeholders

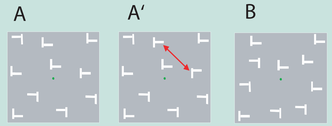
The target always appeared in an otherwise empty placeholder



Contextual Cueing was found when a display cued one and perhaps even two target locations but not three or four

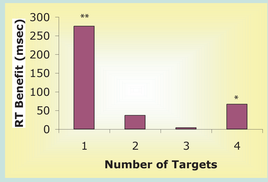
3) Is There Contextual Cueing if a Distractor Appears in a Previous Target Location?

NO



Targets could appear in up to 4 locations

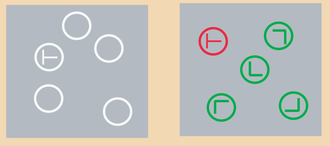
A distractor replaced other target locations



Overall Contextual Cueing was removed when a distractor appeared in a target location

4) Is There Still a Contextual Cueing Effect when Guidance is Perfect?

YES

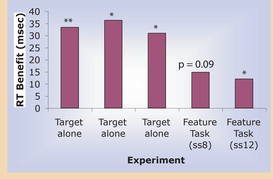


Set Size = 8 and 12

Search slopes = 0 msec/item ('Perfect' Guidance)

Half the displays were Repeated

The other half were Unrepeated



There was still a small but reliable Contextual Cueing Effect even when Guidance was perfect

Conclusions

Is Contextual Cueing Guidance?

Mostly Not:
It does not improve search efficiency

There is limited Contextual Cueing to multiple target locations

There is no Contextual Cueing if a distractor appears in a target location

Contextual Cueing occurs even when there is perfect Guidance

What is Contextual Cueing ?

Maybe early processing of the display?

Maybe response selection?

Adding interference to response selection removes the Contextual Cueing Effect

References

Chun, M. M., & Jiang, Y. (1998). Contextual cueing: implicit learning and memory of visual context guides spatial attention. *Cognitive Psychology*, 36, 28-71.

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