

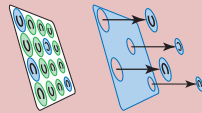


BACKGROUND and PURPOSE

Does guidance operate immediately like a filter, or does it develop over time?

Immediate Guidance

- Broadbent (1958)
- Neisser (1967)
- Feature Integration Theory (e.g., Treisman & Gelade, 1980)
- Guided Search (Wolfe, Cave & Franzel, 1989; Wolfe, 1994)
- Itti & Koch (2000)



Selection is efficient immediately

Evolving Guidance

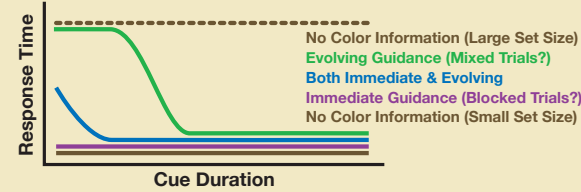
- Reentrant Processing (Di Lollo, Enns & Rensink, 2000)
- Reverse Hierarchy (Hochstein & Ahissar, 2002)
- Feature Integration Theory (Treisman, 2004)



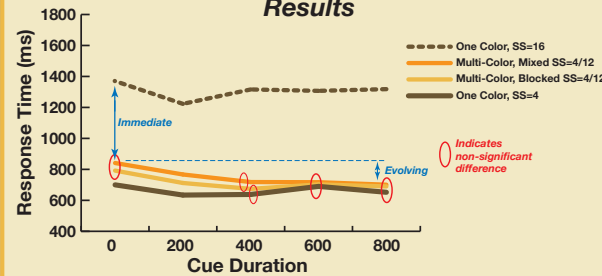
Selection improves over time

EXPERIMENT 1 - FEATURE SEARCH

Predictions



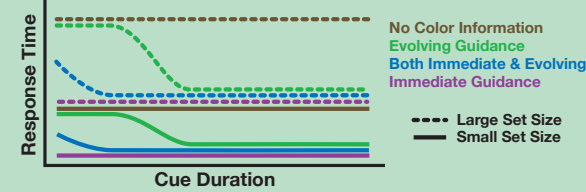
Results



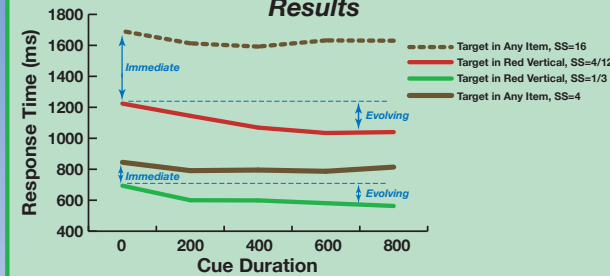
There was an immediate advantage for multi-colored displays. Guidance continued to improve over the next 400-600 ms. No difference between blocked and mixed trials at 0 ms cue duration. Guidance became fully effective in blocked trials before mixed trials.

EXPERIMENT 2 - CONJUNCTION SEARCH

Predictions



Results



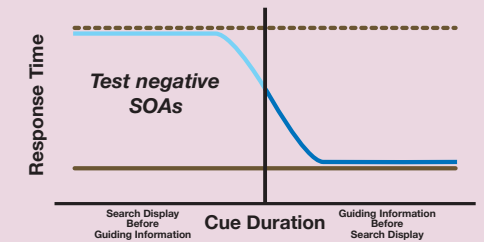
There was an immediate advantage for Conjunction Search displays. Guidance continued to improve over the next 600 ms. Guidance never became fully effective in these displays.

CONCLUSIONS

GUIDANCE IS AVAILABLE RAPIDLY even for mixed trials or conjunction searches.

GUIDANCE CONTINUES TO EVOLVE FOR ~500 ms even for blocked feature searches.

FUTURE DIRECTIONS

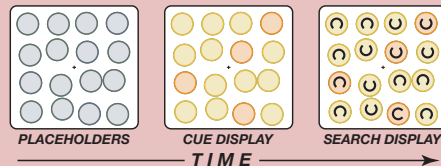


Why was selection so good for mixed trials in Experiment 1?

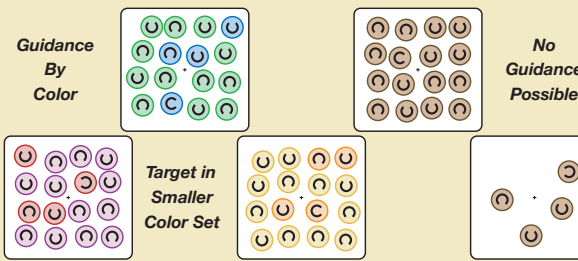
Do observers maintain multiple filters simultaneously?

METHODS

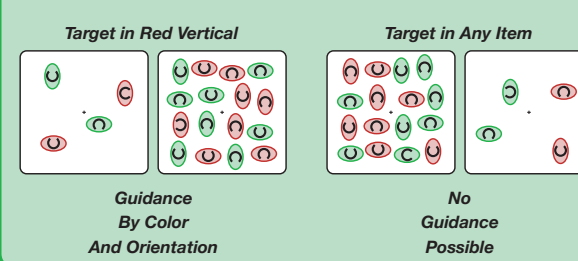
10 Observers in each Experiment. Task was to report the left/right direction of the C. Response Times gathered after Search Display onset. Displays revealed in three phases.



Displays



Displays



REFERENCES

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ACKNOWLEDGEMENTS

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