

Differential effects of exogenous and endogenous attention on 2nd-order contrast sensitivity

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Background

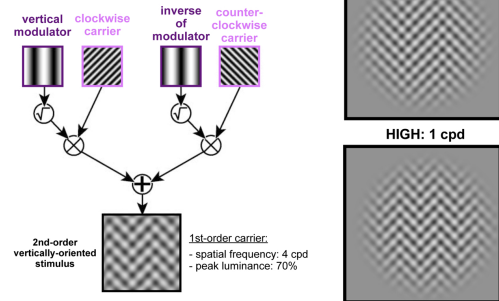


- Exogenous covert attention affects 2nd-order contrast sensitivity
- This effect depends on 2nd-order spatial frequency and target eccentricity
Barbot, Landy & Carrasco, 2011
- However, in some tasks, exogenous and endogenous attention have differential effects
Yeshurun, Montagna & Carrasco, 2008
Giordano, McEree & Carrasco, 2009
Hein, Rolke & Ulrich, 2006

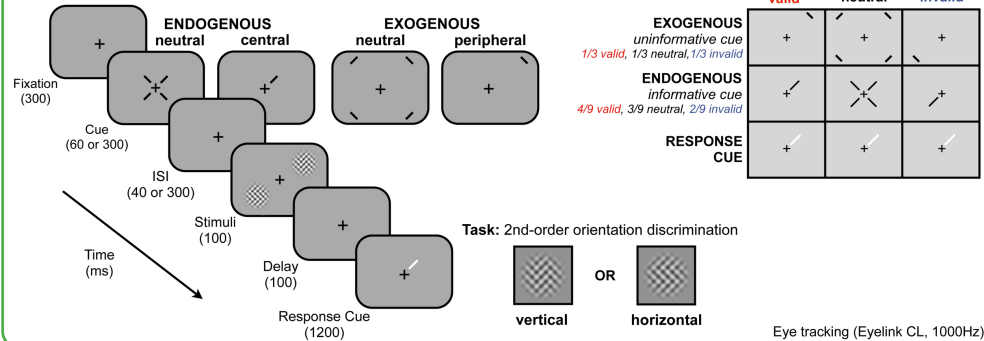
Does endogenous covert attention increase 2nd-order contrast sensitivity?

Stimuli / Conditions

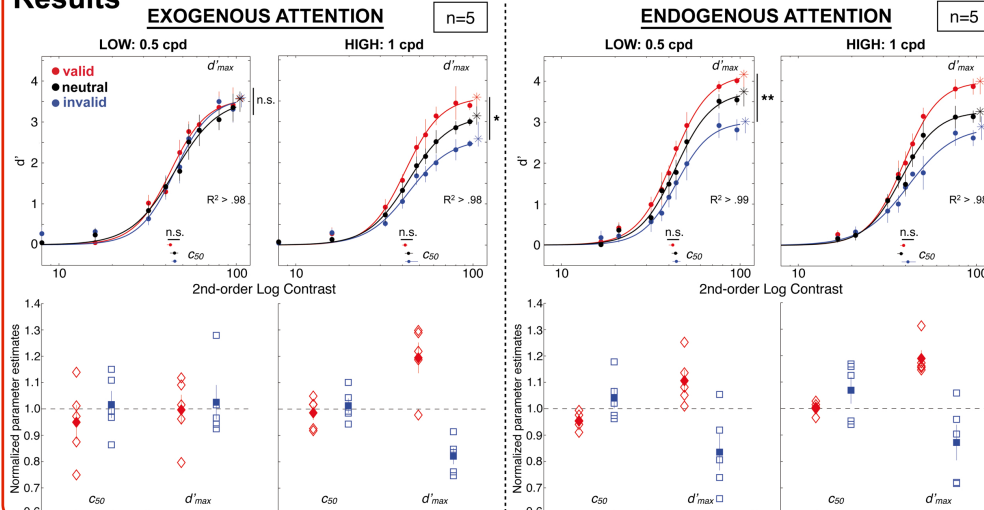
- 2nd-order orientation-defined texture patterns vertically or horizontally oriented



Procedure



Results



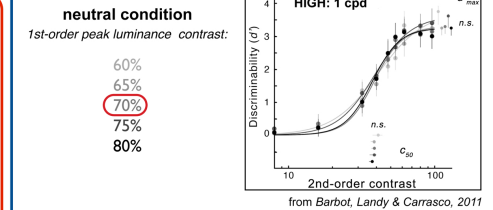
Summary

- Both **exogenous** and **endogenous** attention increase 2nd-order contrast sensitivity at the attended location, while decreasing it at unattended locations

- exogenous** attention improves performance as a function of the 2nd-order spatial frequency content
as in Barbot, Landy & Carrasco, 2011

- endogenous** attention improves performance independently of the 2nd-order spatial frequency content, consistent with a flexible mechanism

- Increased 1st-order contrast sensitivity cannot explain our results



Covert spatial attention affects 2nd-order contrast sensitivity

References

- Barbot, Landy & Carrasco (2011). Exogenous attention increases 2nd-order contrast sensitivity. *Vision Research*, 51(9), pp. 1086–1098.
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- Yeshurun, Y., Montagna, B. & Carrasco, M. (2008). On the flexibility of sustained attention and its effects on a texture segmentation task. *Vision Research*, 48(1), 78–93.

Research supported by NIH EY16165 for MSL and NIH EY16200 for MC