26.330

Global Influences on Figure Assignment: The Role of the Border

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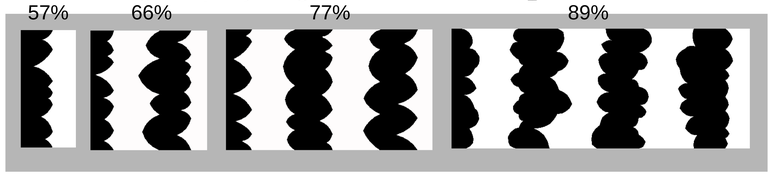
Background

Gestalt psychologists showed that convexity is a figural cue.

Convexity Context Effects: convex regions were increasingly perceived as figure as the number of alternating display regions increased. [1]



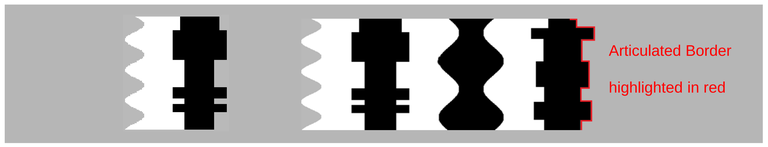
A Convexity Context Effects (CCEs) were obtained only with uniformly colored concave regions.

- This allows concave regions to appear complete behind convex objects.

Symmetry Context Effects?

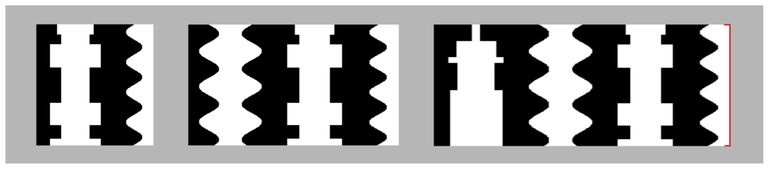
NO: Not when displays have **articulated borders**. [2]

- Even though they preserve the symmetry/asymmetry of the outermost regions.



B Articulated borders are perceived as intrinsic to the outermost regions of the display. The best interpretation is that all regions are on the same plane?

YES: When displays were enclosed with a rectangular frame-like border.

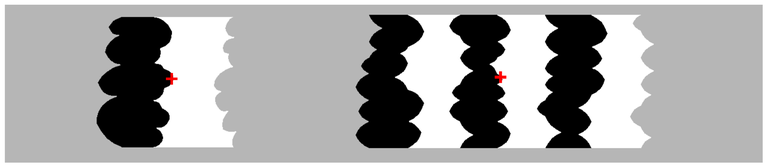


C Hypothesis: Frame-like border allows completion of asymmetric regions into a surface behind symmetric objects.

Current Experiment

Do Articulated Borders Prevent Convexity Context Effects?

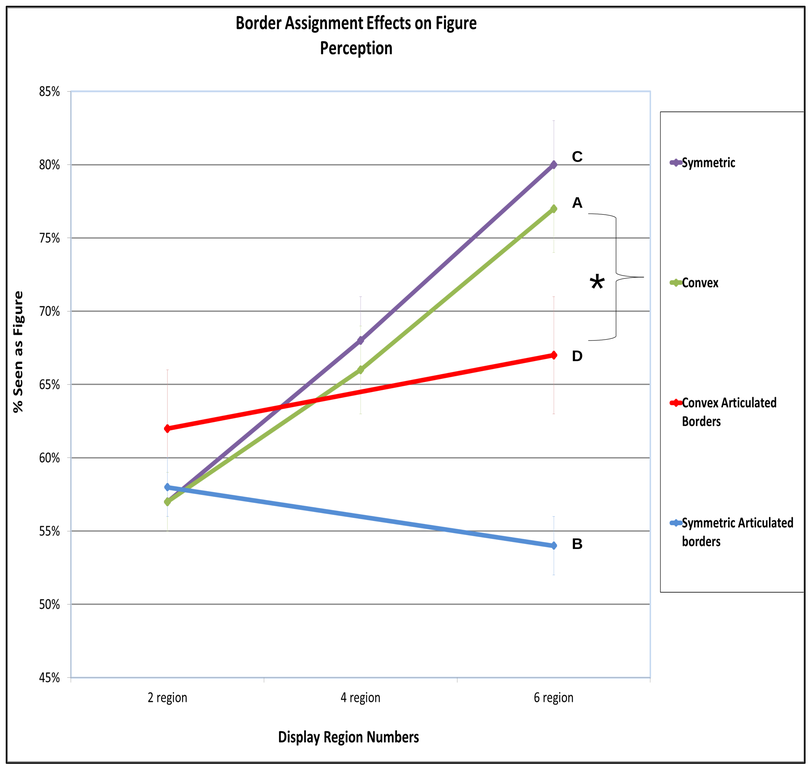
D **Yes:** CCEs were not found with articulated border displays.



Grp 1 Grp 2

B/W balanced, L/R balanced, 100ms unmasked, N=24/group

*6 region displays with articulated borders were significantly less likely to be see as figure than 6 region displays with rectangular borders.



Conclusion

Context Effects are NOT obtained with articulated border displays.

Why?

Articulated Borders are perceived as **intrinsic** to the outermost regions of the display and prevent the interpolation of concave regions into a continuous background.

- All regions appear to be on the same plane.

Context Effects are obtained ONLY with frame-like displays.

Why?

Rectangular outer borders are perceived as **extrinsic** to the outermost regions of the display and allow a 3-D interpretation of the display.

Results

Figure-Ground Cues
•Do not operate locally
•Context dependent

Acknowledgements

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References

1. Peterson, M., A. & Salvagio, E. (2008). Inhibitory competition in figure-ground perception: Context and convexity. *Journal of Vision, 8(16):4*, 1–13

2. Mojica, A., J. & Peterson, M., A. (2014). Display-wide Influences on Figure-Ground Perception: The Case of Symmetry. *Attention, Perception, & Psychophysics,* 76(2).

Contact

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