

Morphed Objects Do Not Capture the Eyes

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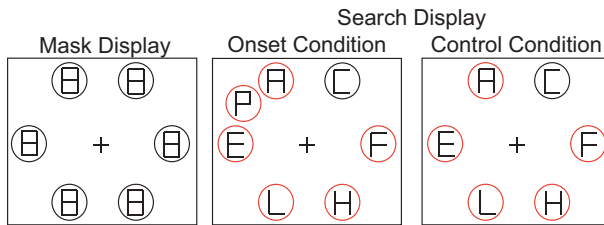
Introduction

The abrupt onset of a new object has the ability to capture both attention (Jonides & Yantis, 1988) and the eyes (Theeuwes et al., 1998). The new object hypothesis says that it is new semantic and structural information, not low-level transients, that cause capture (Yantis & Hillstrom, 1994).

We are testing whether new semantic and structural information unconfounded with low-level transients will capture the eyes.

Background

The experiments here used the oculomotor capture paradigm of Theeuwes, et al. (1998), in which participants searched for a color singleton target while a new object abruptly onsetted onto the screen.



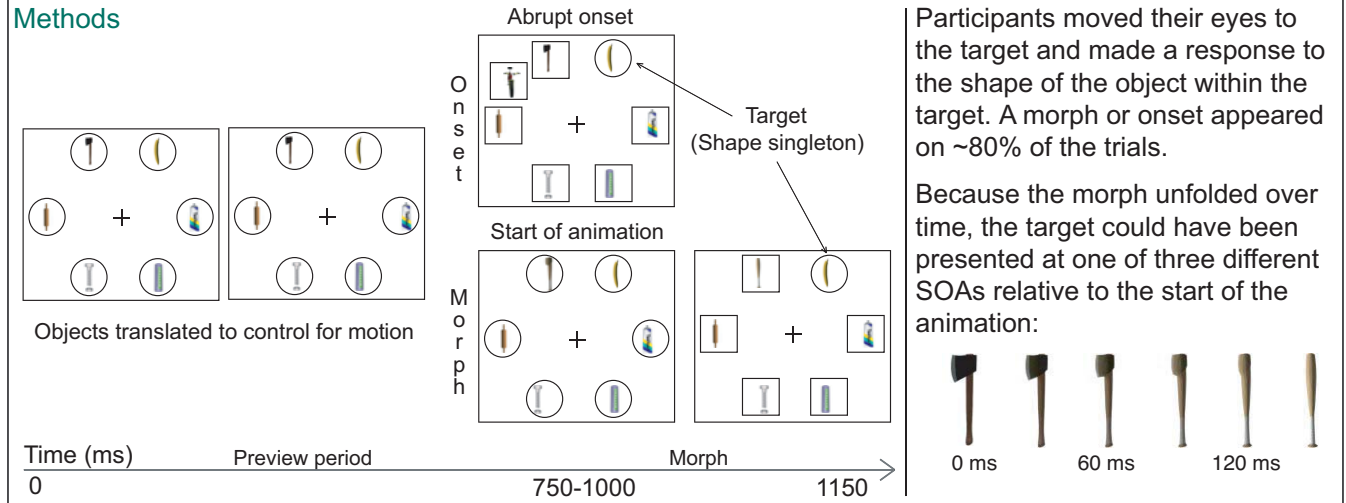
The eyes often went to the onset first, stopped briefly, and then moved to the target. This shows that new objects can involuntarily capture the eyes.

Logic of Our Experiment

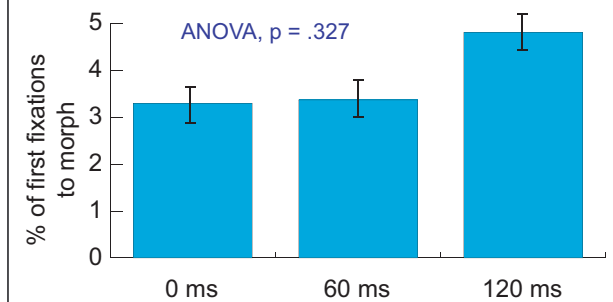
- An object in the display morphed into a new object to present new structural and semantic information
 - No large luminance change
 - Motion was controlled for
- Compared rate of capture by morphs to an abrupt onset condition

If the new object hypothesis is correct, morphs will capture the eyes at the same rate as onsets.

Methods

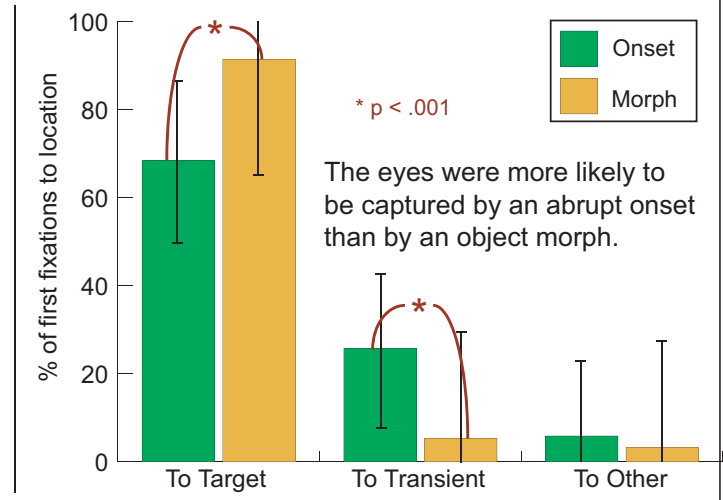


Results



Later SOAs did not cause more capture by morphs.

New semantic and structural information alone did not effectively capture the eyes, even when given a “head start” compared to the target.



The eyes were more likely to be captured by an abrupt onset than by an object morph.

Conclusion

Even when given a “head start” for detection by the visual system, new semantic and structural information does not capture the eyes. It appears that a low-level change is required to alert the visual system to the new object. Future experiments will explore the link between high- and low-level changes and what is necessary to capture the eyes.

References

- Jonides, J., & Yantis, S. (1988). Uniqueness of abrupt visual onsets in capturing attention. *Perception & Psychophysics*, 43(4), 346-354.
 Theeuwes, J., Kramer, A. F., Hahn, S., & Irwin, D. (1998). Our eyes do not always go where we want them to go: Capture of the eyes by new objects. *Psychological Science*, 9(5), 379-385.
 Yantis, S., & Hillstrom, A. P. (1994). Stimulus-driven attentional capture: Evidence from equiluminant visual objects. *Journal of Experimental Psychology: Human Perception & Performance*, 20(1), 95-107.