Adapted a standard object-based attention paradigm (Egly, Driver, & Rafal, 1994).

While our understanding of object-based attention within the visual modality is well articulated, little is known about the guiding role of objects around objects, a phenomenon known as object-based attention. In addition, we hypothesize that this object-based guidance is a result of prioritization, similar to that observed in the visual system (Shomstein & Yantis, 2010). If the human visual system is organized around the perception of objects, then we would predict the sensory interactions between vision and audition across modalities (e.g., visual and auditory). While our understanding of object-based attention within the visual system is well articulated (Egly, Driver, & Rafal, 1994; Shomstein & Yantis, 2002; Drummond & Shomstein, 2010), the role of object-based attention in the auditory system is less understood (Egly, Driver, & Rafal, 1994).

**Introduction**

**Experiment 1: Auditory Cue, Visual Target**

**QUESTION:** Do auditory cues elicit object-based effects in response to visual targets?

**Experimental Setup:**
- Fixation: 1000ms
- Auditory Cue: 4500Hz tone, 250ms
- ISI: 2000ms
- Visual Target: T or L, along with three T/L hybrid distractor shapes, 2000ms
- Conditions: Target appears at Valid, SO, or DO locations
- Task: T/L target discrimination

**ANSWER:** Yes! When the task is new and difficult (first half), object-based effects emerge. When different object targets occur more frequently than same object targets, are different object targets prioritized?

**CONCLUSION:** Object-based effects observed in first half of trials, suggesting that objects guide attention when the task is difficult. When the task is familiar, objects no longer exert an influence.

**Experiment 2: Visual Cue, Auditory Target**

**QUESTION:** Do visual cues elicit object-based effects in response to auditory targets?

**Experimental Setup:**
- Visual Cue: 1400ms
- Auditory Target: 4000Hz or 4050Hz tone
- Conditions: Target appears at Valid, SO, or DO locations
- Task: High/Low frequency discrimination

**ANSWER:** Yes! Visual cues elicit object-based effects in auditory targets. When different object targets occur more frequently than same object targets, are different object targets prioritized?

**CONCLUSION:** Objects guide attentional selection when an auditory cue is presented. Stability of the effect over time: split data into half.

**Experiment 3: Auditory Cue, Visual Target (Biased)**

**QUESTION:** When different object targets occur more frequently than same object targets, are different object targets prioritized?

**Experimental Setup:**
- Setup: Identical task to Exp. 1
- Bias: Twice as many DO targets as SO targets

**ANSWER:** Yes! Different object targets are prioritized when frequency of different object targets increases. Prioritization: DO targets faster than SO targets

**CONCLUSION:** Attentional guidance accommodates subtle changes in input in order to perform the task more efficiently, suggesting that object-based orienting is a default setting.

**References**


**Conclusions**

- Object-based attention is utilized cross-modally.
- Auditory cues elicit object-based effects in visual targets: visual cues elicit object-based effects in auditory targets.
- Attentional selection combines information from both the auditory and visual modalities to create a complete, multisensory representation of the external world.
- Object-based attention, even cross-modally, acts as a default setting that can be overridden in the presence of an alternate, more effective strategy.

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