University of Utah
UNDERGRADUATE RESEARCH JOURNAL

A REAL-WORLD INVESTIGATION OF THE ATTENTIONAL CAPTURE PARADIGM

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ABSTRACT

Attention directs awareness toward important objects, like food or predators, and filters out unimportant objects, like familiar scenery. Two modes of visual attention have been identified: goal-directed and stimulus-driven (Simons, 2000). Goal-directed attention refers to a deliberate search for objects, but carries the risk of inattentional blindness, or a failure to notice new visual stimuli. Stimulus-driven attention refers to unexpected discovery of objects, but carries the risk of distraction, also called attentional capture. Attentional capture has been well documented in laboratory studies (Yantis, 1993), but thus far has been confined to simple, artificial environments (e.g., searching for T's among L's on a computer screen). The extent of this effect and its impact on search tasks in real-world scenarios is therefore unclear. As a starting point in exploring this effect in the real world, we designed an experiment to see if we could replicate the attentional capture effect with common, everyday objects. We recruited 24 participants to perform a basic search task with USB cables and headphone sets for targets, measuring their response times between control trials and trials with a distractor object. We found a disparity in response times between trial types that demonstrated the capture effect. Additionally, we gathered eye-tracking data to follow each participant's visual attention during the search process. This allowed us to determine that participants who demonstrated attentional capture spent significantly more time dwelling on the distractor object than on other non-targets. These results contribute to an emerging understanding of attentional capture's effect in the real world and its mechanism of action.