

LANGUAGE ACTIVATION DURING VISUAL SEARCH IMPACTS DISTRACTOR SUPPRESSION

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In our everyday world, we are constantly searching across our visual fields to find objects that are relevant to our goals. Visual search is a well-researched and deeply studied paradigm of experimental cognitive science. As a result of many visual search studies, the phenomenon of distractor suppression has become prominent. The idea that we learn to suppress any salient, but goal irrelevant stimuli over time is a well discussed one. However, in the real world, searching behaviour is rarely meaningless or detached from some language input. We often only look for things that have semantic qualities attached to them. We do not necessarily suppress the presence of anything in our visual field, rather we look through everything around us in order to find what is relevant to our goal. In our study, we attempted to study distractor suppression in the presence of language. We merge the Visual Search paradigm with the Visual World paradigm in order to understand the true nature of eye movements across a search panel when one is looking for the presence of a certain object. Across two experiments, we tested the effect of the salient distractor on eye movements. In experiment 1, where the salient distractor randomly appeared across the search panel, and in experiment 2, where it had a highly predictable specific location of appearance. We asked participants to perform a regular search task, looking for a specific shape but instead of reporting the tilt of a bar inside the target, we asked them to report if the image inside the target was the same as the word they heard with the onset of the search panel (images of the design are attached for reference). We found that there are almost equivalent numbers of looks (proportion of fixations) towards all distractors, implying that there is no distractor suppression that occurs, even over the course of 250 trials. We argue, with support from these results, that the activation of language overrides any distractor suppression and pushes a person to consider all possible distractors. This implies that the distribution of attention across the panel becomes near equal amongst all distractors, in spite of the salience of a specific distractor.

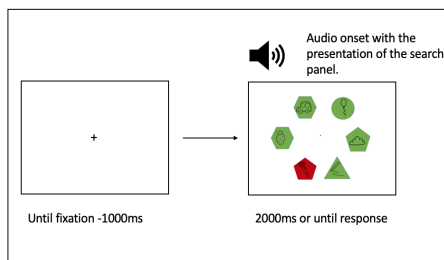


Figure 1. Experimental design for both experiments

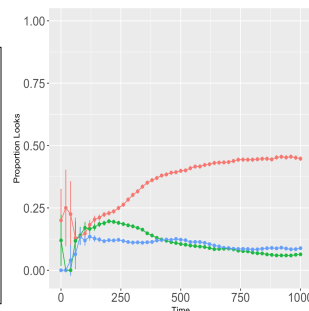


Figure 2. Proportion of fixation plot for Experiment 1.

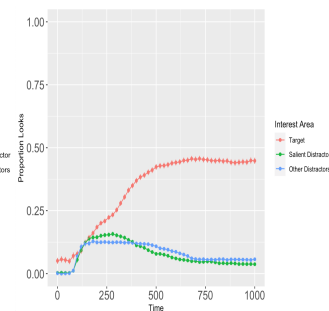


Figure 3. Proportion of fixations plot for Experiment 2.