Objects referred to by spoken language capture attention in a visual discrimination task

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Introduction

Participants in visual-world studies rapidly fixate referents of spoken words. To date, few studies have examined how spoken referential language influences visual processing. In this study, we examine if an object that is referred to by a spoken word captures attention.

Previous work

In a previous study (cf. Salverda & Altmann, 2005), participants performed a simple visual task. They fixated a central cross and were instructed to generate an eye movement to a target object that turned green. A spoken distractor word referred to one of three distractor objects, or to an object not included in the visual display. The instructions emphasized that the spoken words were not relevant to the experimental task.

Results of previous work

The distractor word never referred to the target object, and was thus not a valid cue to the location of the target. Nevertheless, eye movements to the target were initiated significantly more slowly in the present condition than in the control condition. This suggests that the object referred to by the distractor word captured the participant’s attention.

Limitations of previous work

1. Measure of allocation of attention is indirect: assumption is that time it takes to program an eye movement to the target object is affected by (re)orientation of attention.
2. Does hearing the name of an object influence visual processing of that object? If so, we would expect to see an effect of the spoken distractor word in a visual discrimination task.
3. Results show inhibitory effect of the linguistic distractor. Can language also facilitate performance in a simple visual task?

New study: Visual discrimination task

One of two objects in a visual display moved slightly up or down. 60 ms later, the display disappeared. The participant’s task was to maintain fixation and indicate, with a manual response, the direction in which the target object moved. A spoken distractor word referred, with equal probability, to the target object, the distractor object, or an object not in the display.

Results

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Conclusions

1. Objects referred to by spoken words capture attention (see Ellsiepen et al, 2010, for recent converging evidence).
2. Linguistic information can enhance visual processing.

References
