

Replicating the visual search visualisation experiment

Do the results stand up? Do they generalise?

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Abstract Insert your abstract here. Include keywords, PACS and mathematical subject classification numbers as needed.

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1 Introduction

Mental imagery, also referred to as visualising, is the phenomenon where by We are going to replicate Reinhart et al. [2015]. We will also test if the study generalises.

2 Experiment 1

The aim of this experiment is to directly replicate the visualisation effect in visual search [Reinhart et al., 2015]. We have made two minor changes to the original paradigm: (i) we have removed the red distracter element used in the original study to control for EEG effects. (ii). We will use runs of length three, four and five, rather than three, five and seven. This was done as runs of longer length are unimportant for testing the critical result: that reaction times for trial three in a run will be faster in the visualise condition than those in the practise condition.

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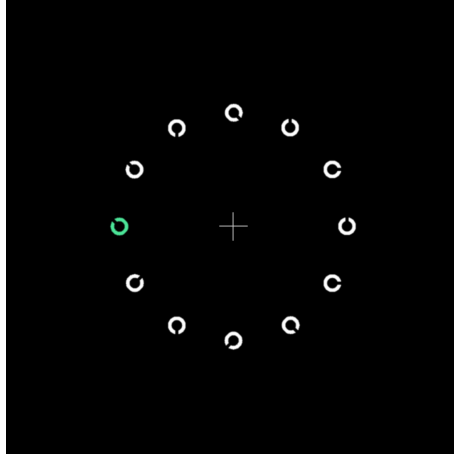


Fig. 1 Example stimulus from Experiment 1. Before the stimulus is shown, the observer is shown a green Landolt C. Their task is to decide if the green C in the stimulus matches.

2.1 Methods

2.1.1 Participants

30 participants will be recruited via from ... from the University of Aberdeen. All participants will have normal or corrected-to-normal vision.

The sample size of $n = 30$ is based on a power analysis for a one-tailed paired t -test, with a power of 0.9 and effect size of $d = 0.55$. This should be sufficient for the replication given the original effect sizes of $0.61 < d < 0.72$ ($n = 18$).

2.1.2 Stimuli

The search stimuli consisted of twelve Landolt Cs arranged in a circle (radius x°) around a central fixation cross. The Landolt C's had a radius of x° and had one of eight possible orientations ($\phi = n\frac{\pi}{4}$, $n = 0, \dots, 7$). One of the C's was coloured green which indicated that it was the target. An example stimulus is shown in Fig. 1.

2.1.3 Procedure

2.2 Results and Discussion

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3 Experiment 2

The aim of experiment two is to investigate whether the effect reported by Reinhart et al. [2015] applies to more standard visual search paradigms, or if it is specific to the target matching task they used in their original study. Hence, in this study we remove the colour cue from the stimuli and change the observer's task from 'does the green item match the target template?' to 'is the target present or absent in this stimulus?.'

3.1 Methods

3.1.1 Participants

3.1.2 Stimuli

3.1.3 Procedure

3.2 Results

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3.3 Discussion

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4 General Discussion

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References

Robert MG Reinhart, Laura J McClenahan, and Geoffrey F Woodman. Visualizing trumps vision in training attention. *Psychological science*, pages 1114–1122, 2015.