

GvaPilot_CS_different categories in series (#3591)

Author(s)

Evie Vergauwe (Univerity of Geneva) - Evie.Vergauwe@unige.ch
David Wisniewski (Ghent University) - David.Wisniewski@ugent.be
Naomi Langerock (Univerity of Geneva) - Naomi.Langerock@unige.ch
Marcel Brass (Ghent University) - Marcel.Brass@ugent.be

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1) What's the main question being asked or hypothesis being tested in this study?

Does increasing the cognitive load of an attention-demanding secondary task result in poorer recall performance in a complex span task in which memoranda of a given trial pertain to different categories (pronouncable non-words, pictures of faces, pictures of outdoor places, and line orientations) ?

2) Describe the key dependent variable(s) specifying how they will be measured.

We will have a binary outcome for memory performance per trial (1 if correct, 0 if not). We will calculate a percentage of correct recall per condition (low cognitive load vs. high cognitive load) and per participant.

3) How many and which conditions will participants be assigned to?

Two cognitive load conditions: low vs. high. The variable cognitive load will be manipulated within-subjects. Thus, all participants will participate in both conditions.

4) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We will first exclude the data of participants who scored less than 70% on the secondary task (performance-based exclusions). Next, per participant and per condition, we will calculate percentage of correct recall. Finally, we will asses evidence for our hypothesis by using a one-sided Bayesian t-test in JASP, with default prior, to analyze the percentage of correct recall.

5) Any secondary analyses?

6) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

We aim at a sample of 24 participants. If evidence appears inconclusive (BF less than 3 in either direction), we will consider increasing the sample size.

7) Anything else you would like to pre-register? (e.g., data exclusions, variables collected for exploratory purposes, unusual analyses planned?)

This experiment serves as a pilot for a planned fMRI experiment in which we examine evidence for refreshing. Demonstrating a negative effect of cognitive load in the current experiment will serve as argument that refreshing is indeed used in the low cognitive load condition and limiting the time during which attention can be used for refreshing results in poorer recall performance.

8) Have any data been collected for this study already?

No, no data have been collected for this study yet