Imitation and cognitive load (#4839)

Author(s)

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

No, no data have been collected for this study yet

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

Higher cognitive load will increase automatic imitation as indexed by greater reaction time interference.

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

Reaction time and accuracy data will be measured using an automatic imitation paradigm, which can separate spatial from imitative interference to performance (e.g., Catmur & Heyes, 2011, JEP:HPP).

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

8 conditions: Spatially Congruent, Spatially Incongruent, Imitatively Congruent, Imitatively Incongruent at Low Cognitive Load and High Cognitive Load.

The load manipulation will involve holding in memory a single face (Low Load) or multiple faces (High Load) whilst performing the automatic imitation task.

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

Reaction time and accuracy data will be analysed using a 2 (Congruency: Incongruent, Congruent) x 2 (Interference type: Spatial, Imitative) x 2 (Load: Low, High) repeated measures ANOVA. We hypothesise that higher cognitive load will increase both spatial interference and imitative interference. To support this hypothesis, we expect a Congruency*Load interaction. In addition, if cognitive load has a differential effect on imitative than spatial interference then we would expect a Congruency*InterferenceType*Load interaction.

6) Any secondary analyses?

In a previous experiment, we used letters (instead of faces) as a working memory load manipulation. If working memory difficulty is not balanced between letter and face tasks, we may select (out) a few participants at the highest (or lowest) performance on the working memory task in order to match accuracy levels to the letter version of the task. This selection, however, will be based on working memory performance and not our primary dependent measure of automatic imitation. The overall aim for selecting out participants based on working memory performance across experiments would be to balance task difficulty and therefore estimate how different types of working memory load, rather than different levels of difficulty, impact automatic imitation.

7) 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 will test participants until we have 50 usable participant datasets (see question 7 for exclusion criteria).

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

We will exclude participants with average reaction time or accuracy on the main task are more than 2.5 standard deviations outside of the group mean. We will also exclude participants with accuracy on the working memory task more than 2.5 standard deviations outside of the group mean.