

Replication of Judgments of Learning as Memory Modifiers by Soderstrom, N.C., Clark, C. T., Halamish, V. & Bjork, E. L. (2015, Journal of Experimental Psychology: Learning, Memory, and Cognition, Vol. 41, No. 2, 553-558)

*Tay, Isabelle, Q. Y. (Graduate School of Education, Stanford University, 485 Lasuen Mall,
Stanford, CA 94305)*

October 06, 2018

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Introduction

A link to the repository and to the original paper (as hosted in your repo). The goal is that we should be able to click on these links and review that your repo is formatted right and look at the original paper.

Metacognition is the cognition, or awareness, of one's own thought processes. A subset of metacognition, metamemory refers to "the processes and structures whereby people are able to examine the content of their memories, either prospectively or retrospectively, and make judgments or commentaries about them" (Metcalfe & Dunlosky, 2008). The chosen study by Soderstrom et al. (2015) focused on whether metacognitive judgments of learning (JOLs) affects memory of studied word-pairs, and found that making JOLs enhanced later memory of the word-pairs being judged, but only for strongly-associated rather than weakly-associated word-pairs. I chose this study because of my research goals: I hope to find effective interventions (which may be motivational or cognitive) in enhancing memory. As a social psychologist, I have limited experience in studies in cognition. Hence, I chose this study precisely because of the opportunities for learning something new but relevant to my research goals.

Here is the original paper.

Methods

Participants, materials, and procedure

Following Experiment 2 in the study by Soderstrom and colleagues (2015), 60 participants were recruited online via Amazon's Mechanical Turk. "During the study phase, 60 cue-target word pairs were studied for a later memory test. Of these pairs, half were strongly related (e.g., blunt-sharp; pledge-promise) and half were weakly related (e.g., boxer-terrible; mercy-justice), according to the MRC Psycholinguistic Database (Coltheart, 1981). These pair types were randomly intermixed during study, with pairs exposed individually for 8 s on a computer screen. During exposure of each pair, the 20 participants assigned to the judgment condition were required to make a JOL to that pair by estimating the likelihood, on a 0-100% scale, of successfully recalling the pair on a later test, being prompted to do so half way through the exposure duration (i.e. after 4 s); whereas, the 20 participants assigned to the no-judgment condition made no JOLs during the 8-s exposure of each pair. Following the presentation of all pairs, participants played Tetris for 3 min and were then given a cued-recall test, in which they were presented with a sheet of paper containing all of the cue-words (in a randomized order) and asked to supply the appropriate target-word for each cue, being allowed 2.5 min for this test."

The main challenges for me would be obtaining the appropriate word pairs from the MRC Psycholinguistic Database which are to be classified in either the strongly-related or weakly-related categories. Also, other challenges include setting up the test, which I plan to do on Qualtrics (including embedding of the Tetris game), and using MTurk and other software in this course for the first time.

Power Analysis

Original effect size, power analysis for samples to achieve 80%, 90%, 95% power to detect that effect size. Considerations of feasibility for selecting planned sample size.

Planned Sample

Planned sample size and/or termination rule, sampling frame, known demographics if any, preselection rules if any.

Materials

All materials - can quote directly from original article - just put the text in quotations and note that this was followed precisely. Or, quote directly and just point out exceptions to what was described in the original article.

Procedure

Can quote directly from original article - just put the text in quotations and note that this was followed precisely. Or, quote directly and just point out exceptions to what was described in the original article.

Analysis Plan

Can also quote directly, though it is less often spelled out effectively for an analysis strategy section. The key is to report an analysis strategy that is as close to the original - data cleaning rules, data exclusion rules, covariates, etc. - as possible.

Clarify key analysis of interest here You can also pre-specify additional analyses you plan to do.

Differences from Original Study

Explicitly describe known differences in sample, setting, procedure, and analysis plan from original study. The goal, of course, is to minimize those differences, but differences will inevitably occur. Also, note whether such differences are anticipated to make a difference based on claims in the original article or subsequent published research on the conditions for obtaining the effect.

Methods Addendum (Post Data Collection)

You can comment this section out prior to final report with data collection.

Actual Sample

Sample size, demographics, data exclusions based on rules spelled out in analysis plan

Differences from pre-data collection methods plan

Any differences from what was described as the original plan, or ???none???

Results

Data preparation

Data preparation following the analysis plan.

Confirmatory analysis

The analyses as specified in the analysis plan.

Side-by-side graph with original graph is ideal here

Exploratory analyses

Any follow-up analyses desired (not required).

Discussion

Summary of Replication Attempt

Open the discussion section with a paragraph summarizing the primary result from the confirmatory analysis and the assessment of whether it replicated, partially replicated, or failed to replicate the original result.

Commentary

Add open-ended commentary (if any) reflecting (a) insights from follow-up exploratory analysis, (b) assessment of the meaning of the replication (or not) - e.g., for a failure to replicate, are the differences between original and present study ones that definitely, plausibly, or are unlikely to have been moderators of the result, and (c) discussion of any objections or challenges raised by the current and original authors about the replication attempt. None of these need to be long.