Examining the Roles of Fluency and Memory Beliefs in Participants’ Encoding Strategies, Judgments of Learning, and Memory Performance

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Abstract

We investigated fluency and memory beliefs’ roles in the font-size effect using a 5 x 3 x 2 (Condition x Block x Font size) mixed design. We manipulated collection of strategy reports and use of a pre-experiment strategy questionnaire to investigate the role of encoding strategies in the font-size effect. Biasing instructions suggesting small/large fonts are more memorable were provided in two of the conditions to examine whether altering participants’ memory beliefs would impact their judgments of learning (JOLs). Instructions did not alter JOLs. Participants provided higher JOLs to items in large font than to items in small fonts, despite no differences in recall as a function of font size (Rhodes & Castel, 2008).

Introduction

- Participants tend to provide higher JOLs to items in large font than to those in small fonts, despite no differences in recall as a function of font size (Rhodes & Castel, 2008).
- Debate surrounds whether memory beliefs or processing fluency play a bigger role in these differences in JOLs.
- Mueller and colleagues (2014, 2016) have suggested that memory beliefs play a larger role in the font-size effect, compared to fluency.
- Undorf and Erdfelder (2015) suggest that fluency does play a role, but that defining the appropriate mechanism is more complex than previously thought.
- Prior research in our lab manipulated memory beliefs via biasing instructions, and in turn, JOLs. However, JOLs aligned with recall as well, leaving open whether the biasing instructions also altered encoding strategies.
- The present study examined whether biasing instructions would alter JOLs and strategy use, by measuring pre-existing (PEP-1) and final (PEP-2) views of strategy effectiveness and then collecting item-level strategy reports in some conditions. If biasing instructions yield shifts in JOLs, this would support memory beliefs as a dominant mechanism for the font-size effect. If not, fluency would prove the more dominant mechanism.

Method

Participants
- 238 UAH students (M age = 19.87, SD = 3.70), 62% female

Design
- 5 (Condition: Small instructions, Large instructions, Control, Control no strategy report, Control no strategy report/ no PEP-1) x 3 (Block: 1, 2, 3) x 2 (Font size: 18 pt., 48 pt.) mixed design
  - Within subjects: Block, Font size
  - Between subjects: Condition

Materials
- 72 word pairs (24 per block), with font size randomly assigned to word pairs
  - Item-level strategy reports: collected in the Small instructions, Large instructions, and Control conditions.
  - PEP-1 and 2: used in Small instructions, Large instructions, Control, and Control no strategy report conditions. The PEP-2 was used in the Control no strategy report/PEP-1 condition.

Procedure
- Small instructions, Large instructions, and Control
- PEP-1: Study JOLs, Strategy Reports, and Recall
- PEP-2: Study JOLs, Strategy Reports, and Recall
- Control no strategy report & Control no strategy report/ no PEP-1
- Study JOLs, Recall

Recall

Discussion

- JOLs were higher for large font than for small font items, with no difference in JOLs for effective and ineffective encoding strategies.
- There was no difference in recall based on font size, but recall was higher for items studied with effective strategies than for items studied with ineffective strategies.
- There seems to be a combination of fluency and memory beliefs at play.

References

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