Title: The contribution of beliefs to the font size effect in judgments of learning: does word frequency serve as one boundary condition?

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Abstract:

One important form of memory monitoring is the judgments of learning (JOLs), which refers to predictions of the likelihood of remembering studied materials in a following memory test. The font size effect (Rhodes & Castel, 2008) demonstrates that participants give higher JOLs for larger words than for smaller words. Previous studies have suggested that font size influences JOLs in a belief-based way. People have beliefs about how font size affects memory performance and use these beliefs when making JOLs. However, few studies investigate whether there is any boundary condition when beliefs contribute to the font size effect in JOLs. Here we conducted two experiments to investigate whether word frequency served as one boundary condition.

Experiment 1 used a 2 (font size: 70pt vs. 9pt) × 2 (word frequency: higher vs. lower) within-subjects design. On the first day, participants made belief-based predictions about font size and memory performance in a questionnaire. 24 hours later, participants studied words and made JOLs. We conducted multilevel mediation analyses to investigate the contribution of beliefs (Tingley et al., 2013). The indirect effect of font size on JOLs mediated by beliefs was not significant under this circumstance. In Experiment 2, we used a 2 (font size: 70pt vs. 9pt) × 2 (word frequency: higher vs. lower) design, with font size as a within-subjects factor and word frequency as a between-subjects factor. The indirect effect of font size on JOLs mediated by beliefs was 3.04, 95%CI [-0.32, 6.49], p= 0.079, in higher frequency words, but was 5.09, 95%CI [0.92, 9.26], p= 0.018, in lower frequency words.

To some extent, the results of this study suggested that word frequency served as one boundary condition when beliefs contributed to the font size effect in JOLs. This study suggested further investigation of the theory-based processes of metamemory monitoring.