

Is There a Role for Perceptual Fluency for Judgments of Learning (JOLs)?

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Judgments of Learning and Perceptual Fluency

Judgments of learning (JOLs) refer to an individual's expectations of future memory performance based on their evaluation of prior learning.

Increased perceptual fluency (i.e., subjective ease of processing) has been shown to inflate individuals' JOL ratings.

Perceptual fluency is commonly assessed in terms of reaction times (RTs). Faster RTs are indicative of more fluent processing whereas slower RTs are indicative of less fluent processing.

Two Channels of Influence on Judgments of Learning

Experience-based influences

JOLs can be impacted by in-the-moment processing experiences that reflect properties intrinsic to experimental stimuli (i.e., perceptual fluency).

Theory-based influences

JOLs can also be impacted by deliberate applications of prior knowledge or beliefs concerning how a given experimental manipulation affects memory performance (i.e., a belief that more fluent stimuli are easier to remember).

Rationale

Experiment 1

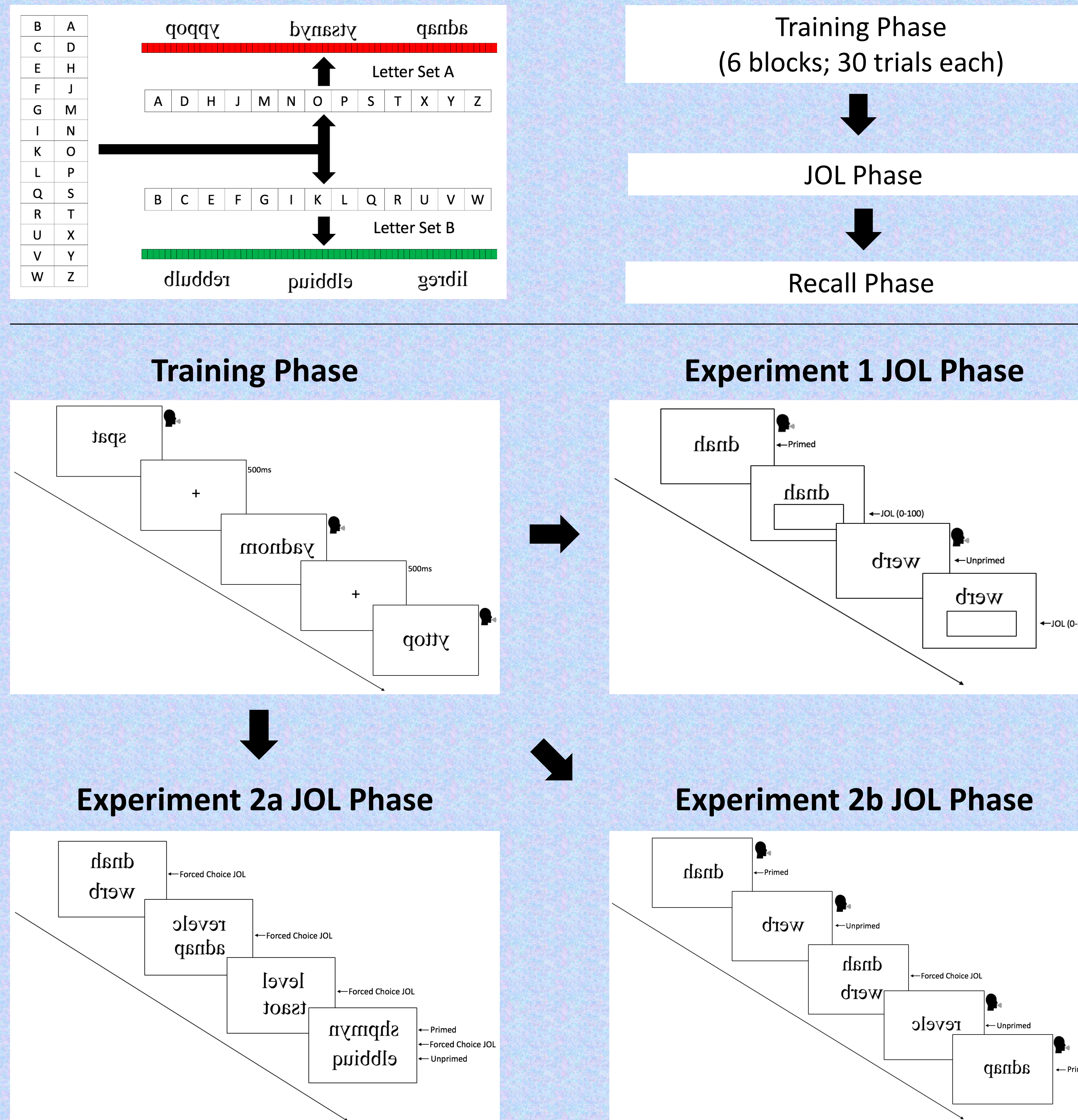
Creating an experimental manipulation of perceptual fluency that participants are unaware of allows for examination of an exclusively experience-based influence of perceptual fluency on JOLs.

Insofar as participants are unaware of this manipulation, any observed influence of perceptual fluency cannot be attributed to intuitive theories regarding how the manipulation ought to affect JOLs.

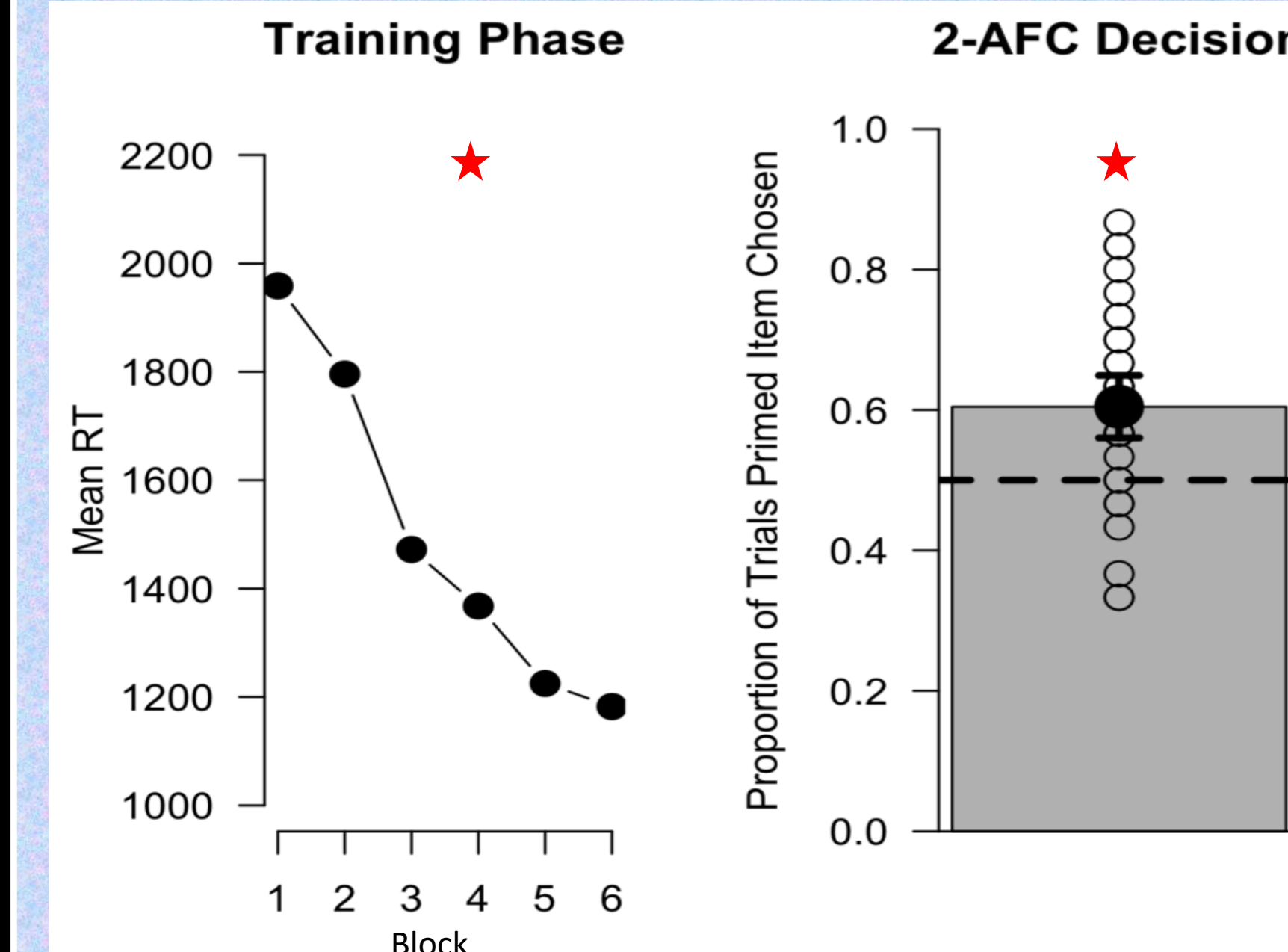
Experiments 2a and 2b

Increasing the saliency of the perceptual fluency of the primed letter set using a 2-AFC procedure could prompt participants to use perceptual fluency as a cue to guide their judgments.

Methods and Procedure



Results – Experiment 2a



Significantly faster RTs in block 1 versus block 6 of the training phase

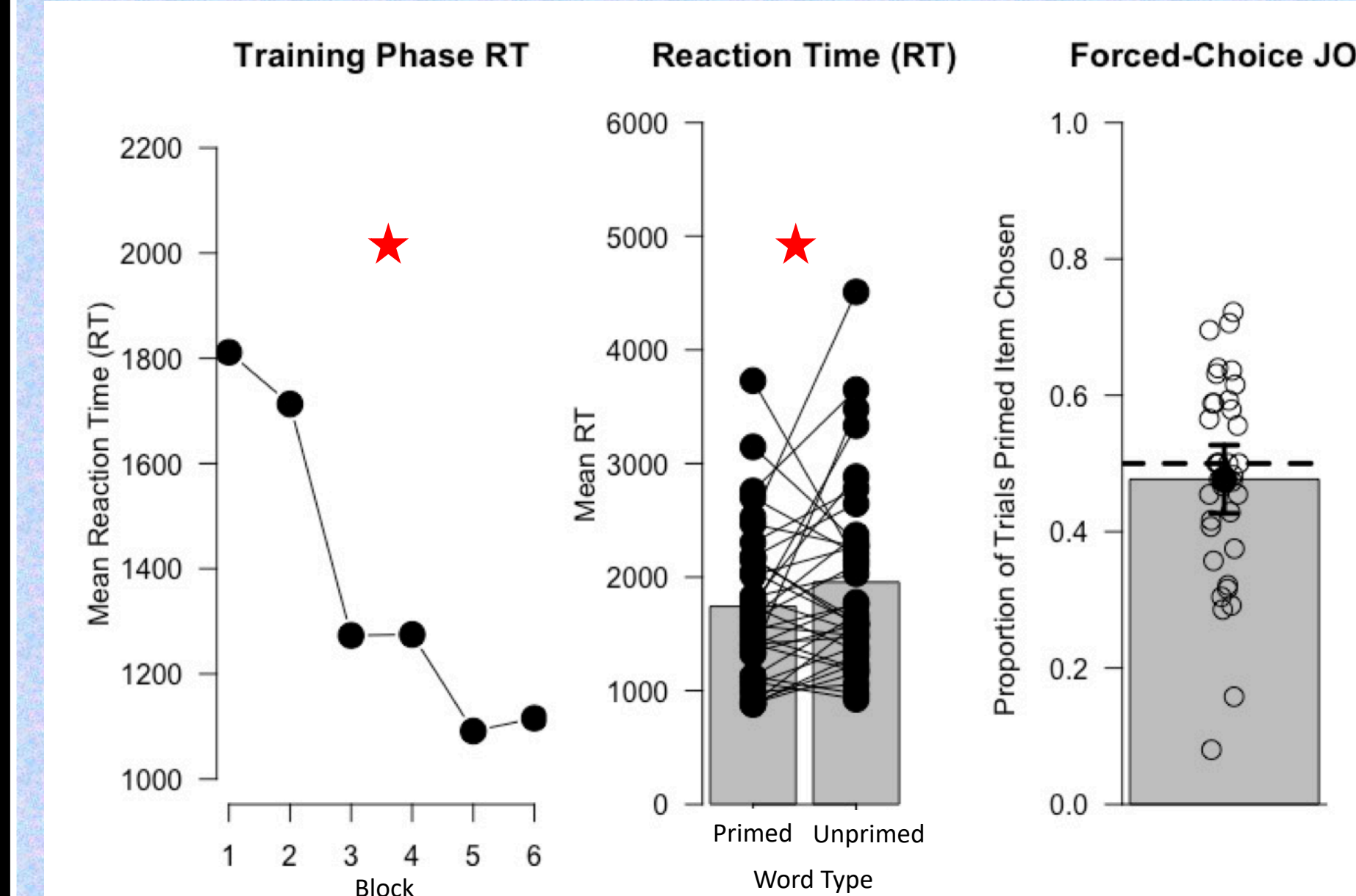
- $t(35) = 4.29, p < .001, d = .85$

Primed words chosen at above-chance level performance (~60%)

- $t(35) = 4.77, p < .001, d = .76$

Increasing perceptual fluency of the primed letter set resulted in faster RTs and an above-chance level performance (~60%) on choosing primed words as being more likely to be later recalled.

Results – Experiment 2b



Significantly faster RTs for primed versus unprimed words

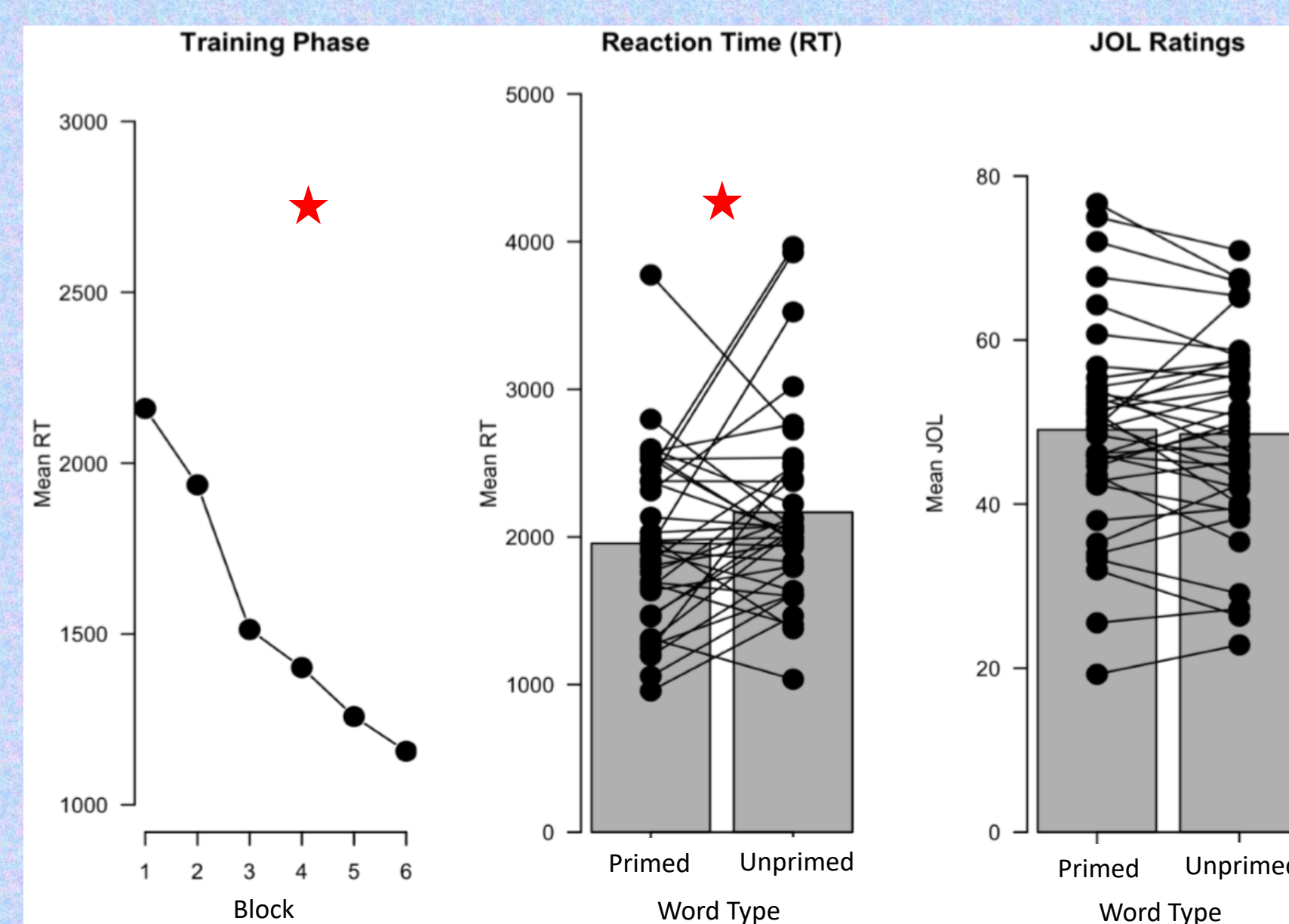
- $t(35) = 4.81, p = .045$ (one-tailed), $d = .28$

Non-significant difference between proportion of times primed word chosen and chance level

- $t(35) = .94, p = .35, d = .16$

Requiring individuals to pronounce each word before making a 2-AFC judgment causes the effect seen in experiment 2a to disappear. This suggests that pronouncing the words causes individuals to use a cue other than perceptual fluency to guide their judgments.

Results – Experiment 1



Significantly faster RTs for primed versus unprimed words

- $t(35) = 1.97, p = .028$ (one-tailed), $d = .34$

Non-significant difference between JOL ratings for primed versus unprimed words

- $t(35) = .54, p = .59, d = .04$

Increasing perceptual fluency of the primed letter set resulted in faster RTs, however, this did not impact JOL ratings. This suggests that participants are perceiving primed words more fluently, but do not use this cue to inform their JOLs.

Conclusions

Increasing perceptual fluency does not lead to higher JOLs in a 0-100 JOL paradigm.

Increasing perceptual fluency does lead to higher JOLs in a 2-AFC paradigm, but only when pronunciation is not required.

These findings depict the importance of task requirements and context as they appear to moderate the influence of perceptual fluency on JOLs.

References

Fiacconi, C. M., Mitton, E., Laursen, S. (in revision). Isolating the Contribution of Perceptual Fluency to Judgments of Learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*
Koriat, A. (1997). Monitoring one's own knowledge during study: A cue-utilization approach to judgments of learning. *Journal of Experimental Psychology: General*, 126(4), 349-370. doi:10.1037/0096-3445.126.4.349