Title Here: SOMETHING ABOUT DRM AND RELATIONAL ENCODING

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**Author Note**

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Abstract

[ABSTRACT WILL GO HERE]

Word Count: XXX

*Keywords*: Judgments of Learning; Reactivity; DRM Paradigm; Recognition

[TITLE HERE]

Understanding how individuals assess their own learning is critical for understanding human memory. Metamemory, or the processes by which individuals regulate learning, is crucial aspect of learning, as these processes individuals to decide whether information has been effectively encoded or if certain items should be restudied (see Nelson & Narens, 1990). To investigate questions surrounding metamemory, researchers commonly have participants complete a study task while providing Judgments of Learning (JOLs), in which participants predict their likelihood of correctly remembering studied items on a later test (see Rhodes, 2016; Schwartz & Metcalf, 2017, for reviews). While JOLs can be elicited using a variety of scales, participants are commonly instructed to provide these judgments via a continuous 0-100 scale reflecting the probability of correctly remembering an item at test. Thus, JOLs provide a simple measure for assessing how various manipulations affect the study process, such as font manipulations (e.g., Rhodes & Castel, 2008; Maxwell, Perry, & Huff, 2022) and the presence of associations between items in cue-target pairs (e.g., Koriat & Bjork, 2005; Castel, McCabe, & Rhodes, 2007).

Historically, studies employing immediate JOLs have viewed these ratings as neutral measures which had no effect on memory (though see Spellman & Bjork, 1992, who posited that JOLs made following a delay improved memory for judged items). As a result, early work involving immediate JOLs often focused on factors influencing their accuracy, rather than the potential effects of making these judgments on memory (see XXX). However, within the last decade, a growing body of research has consistently shown that immediate JOLs are *reactive* on learning (e.g., Janes, Rivers, & Dunlosky, 2018; Maxwell & Huff, 2022; Soderstrom, Clark, Halamish, & Bjork, 2015; see Double, Birney, & Walker, 2018, for review). Thus, the act of making JOLs at encoding modifies participants memory for studied items, likely by making certain features of the stimuli more salient (Ericsson & Simon, 1993). As a result, providing JOLs at encoding could potentially produce memorial benefits (i.e., *positive reactivity*) or costs (i.e., *negative reactivity*), which would be evident when comparing memory performance between participants making JOLs at encoding and a separate group of participants completing a no-JOL control task (e.g., silent reading).

Studies investigating JOL reactivity with cue-target pairs have revealed a consistent pattern: JOLs improve recall for related cue-target pairs (e.g., mouse – cheese) but are generally not reactive on unrelated pairs (e.g., mouse – cup), particularly when memory is assessed via cue-recall testing (Janes et al., 2018; Halamish & Undorf, 2023; Maxwell & Huff, 2022; Soderstrom et al., 2015; but see Mitchum, Kelley, & Fox, 2016). To explain the moderating effects of relatedness on JOL reactivity, Soderstrom et al. proposed a cue-strengthening account. Based on this account, reactivity would be expected to occur whenever 1) study items contain intrinsic cues which participants use inform their JOLs (see Koriat, 1997) and 2) participants are tested using a method that is sensitive to these cues. Thus, when participants are tested via cue-recall, the cue-strengthening account predicts a memory benefit on related pairs, as making JOLs strengthens perceptible relatedness cues, which subsequently facilitates cues-recall performance.

Separately, Maxwell and Huff (2022) proposed a relational encoding account of JOL reactivity. [OVERVIEW] [MEDIATED PAIRS] [HALAMISH AND UNDORF]

[ITEM-SPECIFIC PROCESSES?]

[WORD PAIRS VS WORD LISTS]

**Reactivity and Recognition Testing**

[MYERS ET AL.]

[MAXWELL & HUFF (under review)]

[ZHAO STUDIES?]

**The Present Study**

[DRM LISTS]

[RATIONALE FOR USING SINGLE STUDY LISTS]

**Experiment 1: Recognition Testing**

The goal of Experiment 1 was to test [MAIN GOAL]. As such, recognition was compared between three groups: Participants making item-level JOLs, global JOLs, or a no-JOL control group. Based on [WHAT DO WE PREDICT?]

**Method**

**Participants**

[WORDS HERE]

**Materials**

[WORDS HERE]

**Procedure**

[WORDS HERE]

**Results**

[SIGNIFICANCE PARAGRAPH – REFERENCE FIGURE AND APPENDIX] [PBIC?]

[INTRODUCE MODEL]

**Discussion**

[WORDS HERE]

**Experiment 2: Free-Recall**

Experiment 2 tested [MAIN GOAL – FREE RECALL]. Based on [WHAT DO WE PREDICT?]

**Method**

**Participants**

[WORDS HERE]

**Materials**

[WORDS HERE]

**Procedure**

[WORDS HERE]

**Results**

[REFERENCE FIGURE AND APPENDIX] [INTRODUCE MODEL]

**Discussion**

[WORDS HERE]

**General Discussion**

[WORDS HERE]

**Conclusion**

[WORDS HERE]