Reading "Control Weight" and Remembering "Lose Weight": Aging, Knowledge, and Memory for Inferences

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Introduction

- Memory can be unreliable; after reading *The karate champion hit the cinder block*, people often misremember that the champion *broke* the block (Brewer, 1977). Advertisers rely on these ***pragmatic inferences*** to strengthen claims about products.
- The potential to mislead consumers is concerning, as these false memories occur after explicit warnings and tend to persist over time, even after certain types of feedback (Mullet & Marsh, 2016).

What role does *related knowledge* play in pragmatic inferences?

- Inferences rely on knowledge: "Jumping to the conclusion" that a karate champion *broke* a block after reading that he merely *hit* the block requires specific pieces of knowledge (Searleman & Carter, 1998). Critically, persuasive claims also contain information that is not necessary for forming an inference.
- Just as experts form false memories that complement their schemas (Castel, McCabe, Roediger, & Heitman, 2007), knowledge about concepts that are not *required* to make an inference may encourage memory errors. The "dark side" of knowledge might be more evident in older adults, who maintain and add to their general knowledge (e.g., Cornelius & Caspi, 1987; Schaie & Labouvie-Vief, 1974) and rely on it more consistently than young adults (e.g., Fazio, Brashier, Payne, & Marsh, 2015).

Results

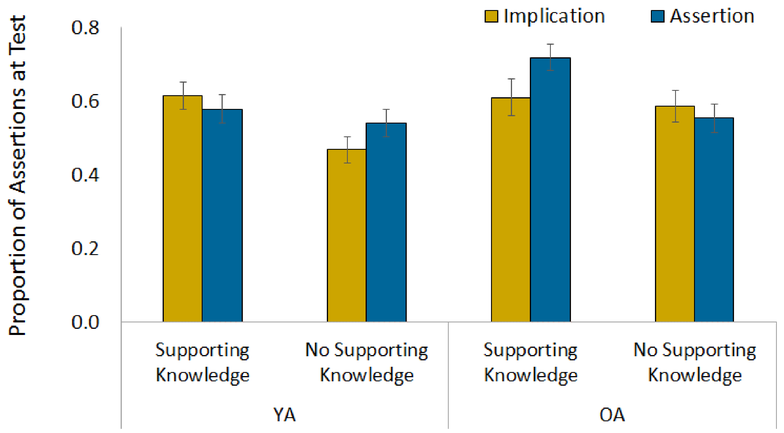
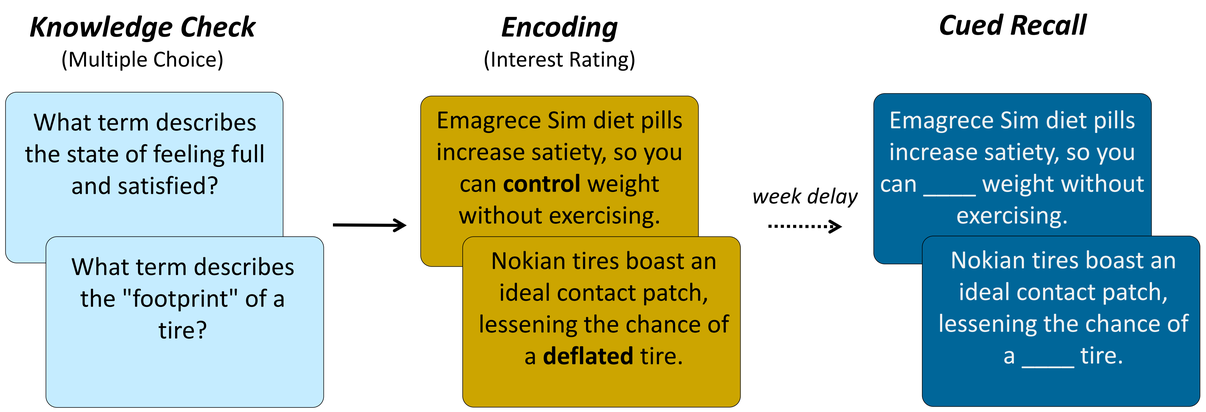


Figure 1. Proportion of answers on the memory test that were assertions, as a function of age, supporting knowledge, and initial framing.

- Accurate memory for explicit assertions (***blue bars***) benefited from related knowledge only in older adults , $t(29) = 4.29$, $p < .001$.
- People misremembered inferences often (***yellow bars***). In fact, the main effect of framing was *ns*: People produced assertions at equal rates in both framing conditions, $F(1,58) = 2.18$, $p = 0.15$.
- Lacking supporting knowledge reduced inferences only in young adults, $t(29) = 4.10$, $p < .001$.

Method



Design

- age – $n = 30$ young adults (18 – 25 yrs), $n = 30$ older adults (65 – 80 yrs)
- framing (implication, assertion) – *manipulated within subjects*
- supporting knowledge (known, unknown) – *measured within subjects*

Conclusions

- The high inference rate ($M = 56\%$) demonstrates the danger of misleading advertisements. Misinformation about products and their uses (e.g., toning shoes) likely comes about in part due to inappropriate inferences.
- Our data complement the findings that older adults comprehend (Light & Albertson, 1993) and misremember (McDermott & Chan, 2006) pragmatic inferences as often as young adults. Contrary to our predictions, we found no evidence that related knowledge harmed older adults. Rather, lack of supporting knowledge about a product's mechanism decreased inferences only in young adults.
- However, supporting knowledge may offset the fluency older adults experience after repeated presentations (see Fazio, Brashier, Payne, & Marsh, 2015); repeated exposure to leading statements reduces pragmatic inference rates in young adults, but increases their incidence in older adults (McDermott & Chan, 2006).

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