



Noncritical Recollection Affects Feelings of Knowing

Gene A. Brewer¹

Arlo Clark-Foos¹

J. Thadeus Meeks¹

Richard L. Marsh¹

Paul W. Foos²

¹The University of Georgia, Athens, GA

²University of North Carolina at Charlotte, NC



- Retrieval of information often brings to mind information that is not directly relevant to the mnemonic task at hand.
- Such information has been labeled noncritical recollection by Yonelinas and Jacoby (1996; See also Toth & Parks, 2006).
- In the current work, we sought to understand how such retrieval of noncritical information would affect metamnemonic judgments such as feelings of knowing (FOK).
- Our purpose in this project was to understand whether temporarily irrelevant qualitative characteristics of a memory trace seep into judgments about an entirely different characteristic.
- We asked people whether they could remember a source attribute, and when they could not, we asked them to predict their ability to recognize this attribute if it was re-presented to them.
- We then examined their memory for a different source attribute of these same items.
- Our key question of interest was whether predictions (FOKs) would be higher when they had irrelevant information available (i.e., noncritical recollection) as compared with when they did not.
- Our logic was that additional information that one has about a memory trace, even if it is noncritical for the current purpose, would increase confidence in one's ability to answer the criterial question.
- Our prediction was that later correct memory for a previously irrelevant dimension might influence their earlier FOK predictions.
- As an independent manipulation of the effect of this irrelevant dimension, we varied both the encoding time and direct instructions to study the format dimension (i.e., the irrelevant dimension).

Experiment 1: Procedure

Please see the accompanying figure

Study Phase

- 30 colored and 30 line drawings were presented
- Half the verbal labels were spoken by a male or a female
- 4 sec incidental, 1 sec intentional, 4 sec intentional
- N = 32 per B/W participant groups

Test #1

- Asked to respond male, female, or do not know (DK)
- All 60 items tested as verbal labels
- Asked to be conservative on gender discrimination
- If DK, then give an FOK regarding GENDER if re-presented
- A 1-5 scale used for FOKs

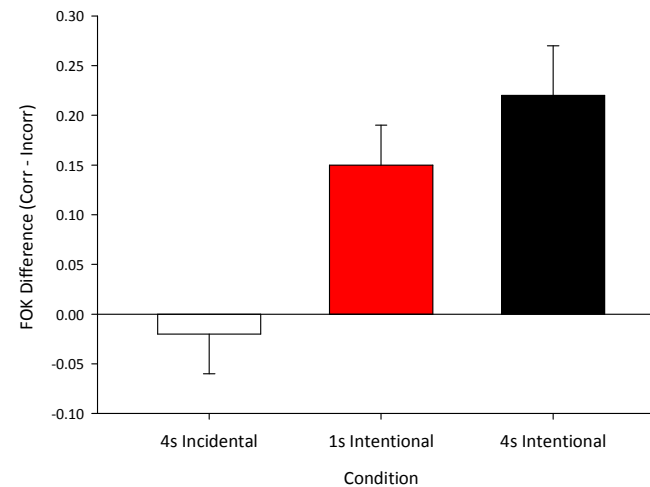
Test #2

- Examined memory for the noncritical dimension (color/line)
- Asked to respond color or line
- All 60 items presented as verbal labels
- This data was then tied back to the FOK ratings in Test #1



* If DK, make FOK on GENDER if represented

Experiment 1



Experiment 1: Results

- In the figure, we present the average difference score in FOK ratings when people ultimately were correct in the third-phase format decision versus when they were incorrect.
- A positive value indicates that later memory for an irrelevant dimension (format) increased the earlier FOK judgments for a different dimension (gender).
- Intentional encoding of the noncritical dimension increased the metamnemonic FOK judgments.
- In addition, the more time that people were given to study the entire ensemble of information also increased FOK judgments.
- The data strongly indicate that memory for a noncritical qualitative characteristic of a memory trace does indeed affect judgments about a very different characteristic.
- Moreover, the data support the important notion that memorial information that is not directly relevant to a retrieval agenda can nevertheless affect performance.

Experiment 2: Rationale

- The largest metacognitive influence from the noncritical dimension was observed when people actively encoded this information and were given ample time to do so
- We sought to understand this condition in more detail so we replicated the 4 s with intentional learning of format condition but had people during the third phase (format judgments) give a *Remember* versus a *Know* response to this dimension.
- Our working hypothesis was that when people were quite confident in the format they would be influenced more on the earlier FOK judgment as compared with when they were less confident.
- Note that we are not equating R versus K responses with confidence, per se, but merely using it as a proxy for the degree to which the noncritical information is clearly represented in memory.
- The procedure was identical to the third condition of Experiment 1 with the exception of the R versus K judgments during the second test.

Experiment 2: Results

- We fully replicate Experiment 1 in FOK judgments pooled over Rs and Ks.
- The critical comparison concerns those items for which participants actually had noncritical recollection (i.e., correct in the third phase).
- Our hypothesis of noncritical recollection affecting performance would be borne out if the average FOK rating were higher for items later given a format decision associated with Rs as compared with the average later given a K response.
- The difference score for items given an R was .27 higher on the metamnemonic scale than those given a K.
- Therefore, clearly remembering a noncritical detail about items influenced judgments about an entirely different detail.

Conclusions

Our overarching goal was to examine the manner in which memory retrieval either is or is not an all-or-none process. We operationalized this study in terms of whether irrelevant information that was part of a memory trace might influence aspects of judgments about a different attribute. The data are convincing insofar as a noncritical piece of information that is available does indeed influence FOK ratings. We believe that this information comes to mind, either in toto or in part, and affects performance on the criterial judgment being made. These experiments do not tease apart the exact locus of such an influence, but we are fairly confident that the effect does not represent an explicit retrieval strategy for the noncritical dimension. Noncritical information could, however, affect the degree to which people search memory. In further experiments conducted in our laboratory we have examined how long people will search for criterial information as a function of the amount of noncritical information that is available. Our data indicate that this irrelevant information does indeed influence search time. Consequently, we believe that noncritical information, as labeled in the field, is quite consequential to memory performance in a variety of different ways.