Recognition Memory in the Absence of Subjective Confidence
Heather Sheridan and Eyal M. Reingold, University of Toronto at Mississauga

Purpose
To study memory in the absence of subjective phenomenal awareness, using a paradigm from the unconscious perception literature (Merikle & Reingold, 1990).

Background
In the unconscious perception paradigm introduced by Merikle & Reingold (1990), each trial began with the brief presentation of a word, a nonword, or a blank field. Next, participants were shown two stimulus alternatives and they made a detection decision (was either of these stimuli presented?) followed by a two alternative forced choice recognition decision (which stimulus was presented?). A qualitative difference occurred between recognition performance following hits (a correct “yes” detection response) and misses (an incorrect “no” detection response). Following hits, recognition of both words and nonwords was above chance. Following misses, recognition was above chance for words, but not for nonwords. A similar logic is used in the present study to test if 2AFC recognition memory performance can be above chance in the absence of subjective confidence that an old word was present.

Method
Study phase trial sequence:
- read condition = read forwards
- generate condition = read backwards

arrow cue: 
- arrow cue: 
- study word: 
- table
- elbat

Say “table” Say “table”

Test phase trial sequence:
- One old, one new (50% of trials)
- Two new words* (50% of trials)

Question 1: Detect if an old word is present
- Either one?
- Either one?
- table
- party
- sound
- basis

Question 2: 2 alternative forced choice recognition
- Which one?
- Which one?
- table
- party
- sound
- basis

*The trials with two new words were included in the analysis for question 1 only, in order to provide the baseline (i.e., false alarm rate).

Experiment 1A and 1B used different Question 1 response options:
1A: strong no, weak no, weak yes, strong yes
1B: new, know, remember

Results
Question 1 (is either word old?)
Proportion of responses by condition (generate, read, baseline)

Main findings: For the strong yes (exp. 1A) and remember (exp. 1B) responses, generate > read, while for all the other response options, read was numerically greater than generate.

Question 2 (which word is old?)
2AFC performance given an “old” response to Question 1

Main findings: There was a generation effect following an old response in both experiments.

2AFC performance given a “new” response to Question 1

Main findings: Following a new response (in both experiments), performance was significantly above chance, and there was no generation effect.

Conclusions
2AFC memory performance was above chance, in the absence of subjective confidence that an old word was present.

A dissociation was observed between memory performance with vs. without subjective confidence. Specifically, there was a generation effect for memory performance with subjective confidence, but not in the absence of subjective confidence.

References

Contact Information
Heather Sheridan
(reingold@psych.utoronto.ca)

Eyal Reingold
(reingold@psych.utoronto.ca)

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