



# The effects of remembering and suppression on memory for spatial location

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## Abstract

In the standard think–no think paradigm, items are presented in pairs during Phase 1. During Phase 2, participants are shown the first item (i.e., a cue) from some of the pairs and are instructed to either remember (think of) or suppress (not think of) the associated item. Some cues are not presented and serve as a baseline measure of memory performance. In Phase 3, all the cues are presented and participants are asked to retrieve the associated items. Associative memory performance is typically enhanced for items in the remember condition and impaired for items in the suppress condition, as compared to baseline items. In the present study, we assessed whether this effect persisted for item features – specifically, spatial location. Based on previous results, we hypothesized that retrieval of spatial location would enhance future memory performance while suppression of spatial location would impair future memory performance, as compared to a control condition. However, in the present study, we failed to find an effect of retrieval or suppression on future memory for spatial location. Such evidence may suggest that item features may be more resistant to the effects of retrieval and suppression, as compared to previous paradigms in which unrelated items were retrieved/suppressed.

## Methods

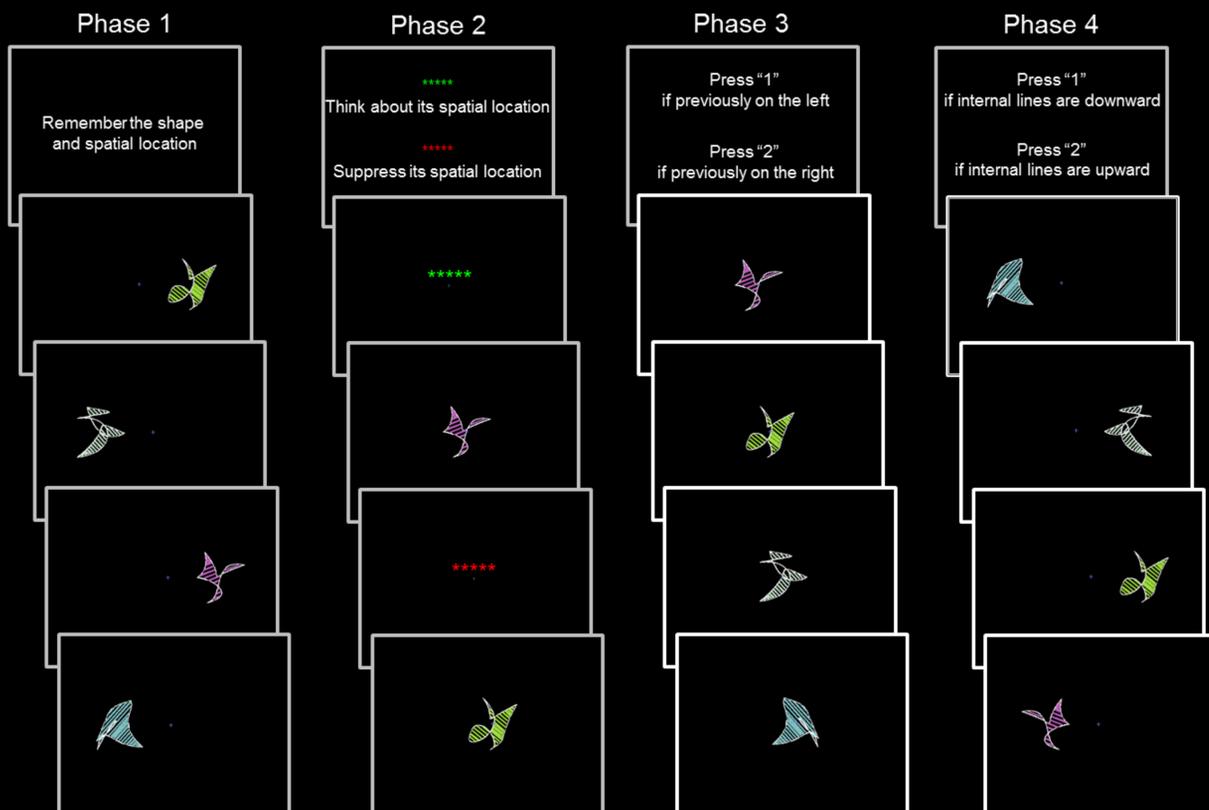
- 36 students from the Boston College community participated in the study
- All participants completed a least 2 practice runs and 6 or 7 experimental runs

**Phase 1:** 24 abstract shapes were presented to the left or right of a central fixation cross

**Phase 2:** Participants were instructed to **remember** or **suppress** the spatial location of 16 of the shapes from Phase 1; 8 of the shapes from Phase 1 were not shown as these served as control items for Phase 3 and Phase 4

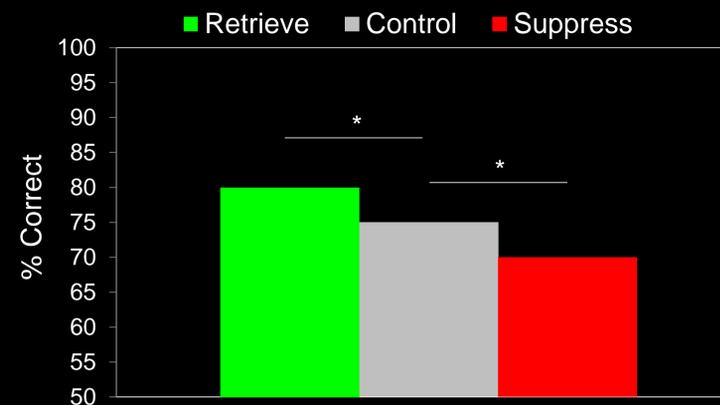
**Phase 3:** Participants identified whether each shape from Phase 1 was previously to the “left” or “right” of fixation

**Phase 4:** All shapes were presented in either the previous spatial location or the opposite spatial location. Participants judged whether the internal lines of each shape were oriented downward or upward as quickly as possible



## Results

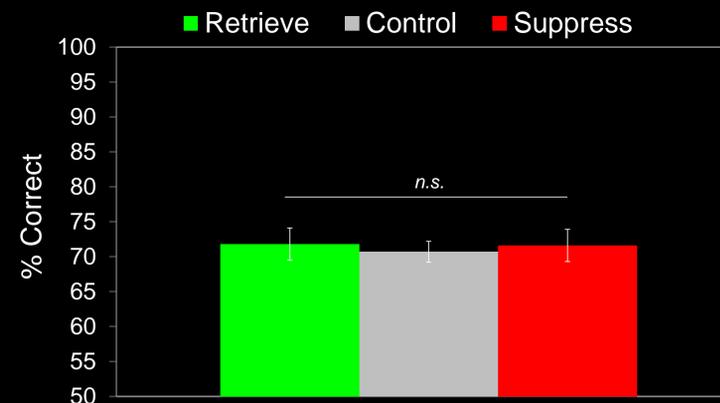
### Hypothesized Results



→ We hypothesized that memory for spatial location would be best for items in the **retrieve** condition, as compared to the control condition

→ We hypothesized that memory for spatial location would be worst for items in the **suppress** condition, as compared to the control condition

### Present Results



→ We conducted a one-way repeated measures ANOVA to assess whether there was an effect of condition (**retrieve**, control, **suppress**) on memory for spatial location

→ We did not find an effect of condition (**retrieve**, control, **suppress**) on memory for spatial location,  $F(1, 35) = .014, p = .905$ .

## Discussion

- In the present study, we sought to assess whether retrieval and suppression of an item feature (i.e., spatial location) could affect future memory for that feature
- The present results suggest that memory for spatial location (Phase 3) was unaffected by our experimental manipulation in which an item’s spatial location was either retrieved or suppressed during Phase 2
- Such results suggest that effects revealed by think-no think paradigms may not persist when the task is to suppress an item’s feature, as opposed to an unrelated associated item
- The present null findings are consistent with recent work that repeatedly failed to demonstrate selective directed forgetting in a variety of samples and a range of paradigms (Akan & Sahakayan, in press, *Memory*)