

Approved Replication Protocol

Study 1 from Schooler & Engstler-Schooler (1990)

Article Citation: Schooler, J. W., & Engstler-Schooler, T. Y. (1990). Verbal overshadowing of visual memories: Some things are better left unsaid. *Cognitive Psychology*, 22, 36-71.

Rationale: Prior to the original finding of verbal overshadowing, most memory research suggested that any rehearsal of to-be-remembered materials would enhance recall of those materials. The original verbal overshadowing result was both theoretically important and surprising because it showed that verbally rehearsing an experienced event impaired memory for visual details from that event. The finding suggested that eyewitness recollection might be impaired by asking witnesses to describe what they saw, a result with both practical and theoretical importance. Over the ensuing years, the study's original author (Jonathan Schooler) has tried to reproduce that finding, and the measured effect sizes were substantially smaller than those of the original study—the effect seems to be more temperamental than initially thought. Despite receiving more than 500 citations since it was first published in 1990, few other laboratories have attempted direct replications of the crucial first study. Moreover, Schooler has argued that the reduced size of the effect in his attempts to repeat the experiment reflects an active mechanism that has led to a reduced effect size, the so-called “decline” effect. His writing about the reduced effect size of this result has received extensive coverage in journals and the popular media, including commentaries in *Nature* and a feature article in the *New Yorker*. The effect itself appears regularly in cognitive psychology textbooks as well. Given the uncertainty about the size of the effect, direct replication of the original study by multiple laboratories will help determine the robustness of the interfering effects of verbal rehearsal on recognition of visual materials.

Materials: The authors of the original study have made the original study materials available. These include the critical video, test image, instructions, and filler task.

Design: Subjects view a test video of a bank robbery and immediately afterward they spend 5 minutes either describing the robber (experimental condition) or listing states and state capitals (control condition). They then complete an unrelated filler task for 20 minutes (an easy crossword puzzle). Finally, they view an image depicting 8 people and select the one who was in the bank robbery video and rate their confidence in their selection.

Critical result: The critical test is a Chi-Square comparing the proportion of people in each condition who correctly identify the bank robber. The original study found worse recognition in the experimental condition than in the control condition (effect size of $r = .260$).

Protocol Requirements

Sample size: $n \geq 100$ total, with $n \geq 50$ in each of the two conditions.

Sample demographics:

- Undergraduate subject pool or equivalent
- Age range 18-25 years
- Between 20% and 80% female,
- Given that the perpetrator depicted in the original video is White, subjects should also be White. The verbal overshadowing effect is thought to be weaker with other-race faces than own-race faces (Fallshore & Schooler, 1995).
- Must be able to understand the instructions and have vision adequate to watch the video and see the images

Testing location:

- In-person testing (may not be conducted online)
- Subjects must not be able to see or hear each other when responding or when viewing stimuli
- Subjects may be tested individually or in small groups, provided they cannot communicate during the study.
- The study may not be conducted in a classroom setting.

Experimenters:

- Any trained research assistant, postdoctoral researcher, or faculty person
- Experimenter should have experience collecting experimental psychology data and interacting with subjects.
- No special expertise is necessary to conduct the study
- The experimenter does not need to be blind to condition assignment (as that would be impractical)

Data collection:

- The video may be shown on a computer display, on a television, or projected on a screen.
- Confidence ratings and written descriptions can be made on paper or on a computer.
- Subjects should be blind to the hypothesis about verbal overshadowing and should be unaware of any conditions other than their own (i.e., subjects in the experimental condition should not know that there is a control condition, and vice versa).
- Subjects should be randomly assigned to the experimental and control condition with the constraint that approximately equal numbers of subjects are assigned to each condition.

- Subjects should not know they are participating in a recognition memory task.
- The signup for the study should describe it as a study of perception and memory.

Data from a subject may be excluded if:

- They did not follow instructions on the experimental or control task
- They did not complete all tasks
- The Experimenter incorrectly administered the task or instructions
- Data may only be excluded prior to examining the recognition task performance and should be based on factors unrelated to the outcome measures.
- Any excluded data and the reason for exclusion should be identified and included in the data sets.

Required Data Analyses:

- Compute a Chi-Square comparing percentage of correct identification in the experimental and control condition
- Compute a Chi-Square comparing the ratio of the percentage selecting the wrong face (misidentification) to the percentage indicating “not present” across the experimental and control conditions.
- Compute a 2 (Condition) x 2 (Correct vs. incorrect/miss) ANOVA on confidence ratings

Procedure:

- 1) Subjects are recruited to participate in a study of memory and perception
- 2) Subjects are randomly assigned to the experimental condition or the control condition.
- 3) Subjects are told: “This experiment consists of several tasks. First, please pay close attention to the following video”
- 4) Subjects view a 30-second video depicting a bank robbery.
- 5) Subjects receive different instructions depending on their condition assignment:
Experimental Condition: “Please describe the appearance of the bank robber in as much detail as possible. It is important that you attempt to describe all of his different facial features. Please write down everything that you can think of regarding the bank robber’s appearance. It is important that you try to describe him for the full 5 minutes”
Control Condition: “Please name all of the 50 US states and their capitals”
- 6) After 3 minutes, each group should receive the following reminder:
Experimental Condition: “Please continue describing every detail of the bank robber. It is important that you provide as full a description as possible”
Control Condition: “Please continue to list all of the states and their capitals. It is important that you continue this task for the full five minutes.”
- 7) After 5 minutes of writing/typing, all subjects should spend 20 minutes working on the provided crossword puzzle. Each participant should be given a printed copy of the puzzle.

- 8) Subjects view the lineup of 8 faces and identify the one they saw in the robbery video or report that it wasn't present. They should read/hear the following instructions: "Next you will see an lineup with 8 faces. Please identify the individual in the line up who you believe was the bank robber in the video you watched earlier. If you do not believe the bank robber is present please indicate 'not present'"
- 9) If the lineup task is computerized, the images are numbered 1-8 to allow a keyboard response and the last sentence of the instructions in #8 should add the following: "...please indicate 'not present' by pressing '9'. Press 'space' to view the image."
- 10) Subjects rate their confidence in their selection. They should be giving the following instructions: "Please indicate your confidence in your selection from the lineup on a scale from 1 (guessing) to 7 (certain)."