

2019

# Investigating the Response Criteria Shift Account for the Verbal Overshadowing Effect

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## Recommended Citation

Dean, Matthew C., "Investigating the Response Criteria Shift Account for the Verbal Overshadowing Effect" (2019). *Honors Theses*. 1137.  
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INVESTIGATING THE RESPONSE CRITERIA SHIFT ACCOUNT FOR THE VERBAL  
OVERSHAODWING EFFECT

by

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A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of  
the requirements of the Sally McDonnell Barksdale Honors College.

Oxford

May 2019

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## ACKNOWLEDGEMENTS

I would like to give my eternal gratitude to Dr. Reysen and the soon-to-be Dr. Baker for all of their help and support during this process. Thank you both for the opportunities you have provided me!

## ABSTRACT

The present study investigated the impact of response criteria shift effects within the verbal overshadowing effect (VOE). Participants watched a video recording of a burglary and were then given one of two tasks: either 1.) a recall task or 2.) a non-recall task (Tetris). Participants were then shown a two-person lineup and forced to identify the burglar. The results of the experiment indicated that participants who engage in the recall task demonstrate verbal overshadowing, despite being forced to identify from a lineup. Essentially, verbal overshadowing occurs without a shift in response criteria.

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# INVESTIGATING THE RESPONSE CRITERIA SHIFT ACCOUNT FOR THE VERBAL OVERSHADOWING EFFECT

## Introduction

Although Jennifer Thompson would never forget the night she was raped, there was an important element of that night that she would inaccurately recall: the perpetrator. After being assaulted at knifepoint, Ms. Thompson, a college student living in North Carolina, contacted law enforcement. The crime scene was secured, evidence was gathered, and the investigation into her attack began. Working with a composite sketch artist, Ms. Thompson had an illustration of the suspect's face drafted for law enforcement, and the search was underway to find the man who raped her (Weir, 2016).

While Ms. Thompson was assisting law enforcement, she was shown a photo lineup of possible suspects. Ms. Thompson confidently made a selection from her choices. The individual she had selected was Ronald Cotton, a young man who had a history of prior legal troubles. Mr. Cotton resembled the forensic artist's sketch, and he was brought in to be part of a physical lineup. At the lineup, Ms. Thompson again pointed out Ronald Cotton as her attacker. He was taken into custody, charged, and eventually found guilty of being the perpetrator. Ms. Thompson's lineup selection and

other eyewitness testimony was crucial evidence against Mr. Cotton and secured his conviction (Weir, 2016).

It would take a decade until scientific DNA testing could prove Ronald Cotton had in fact not been the man who had raped Jennifer Thompson that night in 1984. Instead, another convict serving a prison sentence, man named Bobby Poole, was discovered to have actually been the perpetrator. The charges against Ronald Cotton were brought to the court's attention, and his conviction was examined in light of the DNA testing. With that new development, Ronald Cotton was exonerated, once again a free man (Weir, 2016).

Although this story has a happier ending than what could have been, it still reflects the dangerous price of faulty eyewitness accuracy. In spite of his eventual pardon and current freedom, it cannot be forgotten that Ronald Cotton was still an innocent man who had a decade of his life unjustly stripped away from him, forced to serve a prison sentence for a felony that he did not deserve. This story calls into question how many innocent people may have been convicted for crime they did not commit, hammered as the perpetrator due to an inaccurate eyewitness. The story of Ronald Cotton is the story of only one of many people who have been on the receiving end of an unfortunate miscarriage of justice. Where everything went wrong in the story of Mr. Cotton, however, occurs before he was mistakenly pointed out from a lineup. In actuality, the damage had been done long before that moment.



When a crime has taken place, it is common police procedure to ask a witness for a description of the suspect. With this information, patrol units can be made alert of who to keep an eye out for, a composite sketch can be made, and the investigating officers can use this description to drastically narrow down the range of possible suspects. Without this information, officers would have to do nothing short of playing a guessing game in order to find a suspect they believe may be responsible. However, according to studies done in the field of cognitive forensic psychology, asking a witness to describe facial characteristics may actually do more harm than good.

### **The Verbal Overshadowing Effect**

It is understood within the field of cognitive psychology that verbalization can influence recall. For instance, Carmichael, Hogan, and Walter (1932) found that verbalizing labels of shapes impacted the participant's illustration of said shape. Additionally, research done in the field of semantic encoding has shown that verbalized semantic attributions to a face, such as whether or not someone has an "honest face" can lead to higher accuracy in recall tasks (Bower & Karlin, 1974). These facts are important to note, because these results show us that verbalization does not always lead to a negative impact on recall accuracy. However, in the context of verbal overshadowing, that is not the case.

In their initial study, Schooler and Engstler-Schooler (1990) established that verbalized recall of memories impairs the accuracy of those memories. This effect is especially present when applied to recall tasks associated with a face. In one part of

their experimental study, Schooler and Engstler-Schooler (1990) showed participants a video depicting a crime. Following this, some participants were asked to verbally recall the description of the criminal in the video, while other participants did not verbally describe the criminal. This was then followed by a lineup identification task in which participants were asked to identify the criminal from a photo lineup. The results of Schooler and Engstler-Schooler's study showed that participants who were given the verbal recall task had poorer identification accuracy than participants who were not given the verbal recall task, thus demonstrating the existence of the verbal overshadowing effect (VOE). It is important to note that this effect related to verbalized recall. Participants who only visualized the suspect did not experience overshadowing (Schooler & Engstler-Schooler, 1990).

The other tests of the 1990 Schooler and Engstler-Schooler study demonstrated verbal overshadowing was also present in the recall of visual memories that did not pertain to faces. For example, verbal overshadowing was also seen to be present in their experiment testing recall of color, in which participants tried to describe the shade of a color they had seen. After doing so, participants were then tasked with identifying the correct color from a selection task, and verbal overshadowing was observed in the results of the selection task (Schooler & Engstler-Schooler, 1990).

Additionally, Schooler and Engstler-Schooler (1990) found there to be no relationship between the quality of a participant's recall description and the accuracy rates of their selections. Furthermore, their results suggested that, after engaging in the verbalization task, participants did not rely on their visual representation, which they

theorize would lead to an accurate recall, or on the details of their verbalized memories, which would have produced a positive relationship between the quality of verbalized details and the rate of successful identification by participants (Schooler & Engstler-Schooler, 1990).

It should also be noted that the VOE does not come into effect when there are distinguishable qualities between the correct target and other distractor targets. For instance, if the correct suspect had a twirled moustache, and the other suspects in the lineup did not, then having previously verbalized the description of the suspect would not affect accuracy, since the moustache helped to single out the correct target. In fact, it was found that verbalizing such distinguishing characteristics could theoretically be beneficial to correctly identifying the suspect from a lineup task (Schooler & Engstler-Schooler, 1990). However, such distinguishing markers do not always exist.

Another fact of particular importance to keep in mind while reading about eyewitness identification from a lineup is the type of lineup that was given. As of 2019, there are two primary forms of a lineup: simultaneous and sequential. Simultaneous lineups are the traditional, six to nine people in a row events that are commonly thought of when someone hears the word “lineup”. The sequential lineup is a lineup of portrait photographs, presented one after another, to a witness.

There is sharply conflicting evidence in regards to which form of lineup is better, and both types have been seen to have different effects on witnesses. Initially, sequential identification tasks were found to produce far less cases of false

identification, and there was a minimal drop in the number of failures to make correct identifications (Weir, 2016). Furthermore, organizations such as the Innocence Project supports using sequential lineups, and several law enforcement agencies have shifted towards using this new method. However, disputes have emerged regarding whether or not such a method is as useful as initially thought. Using a statistical method known as receiver operating characteristic analysis, some researchers have found that sequential lineups may produce more misidentifications than simultaneous lineups (Weir, 2016). Studies regarding verbal overshadowing almost always rely on simultaneous lineup procedure, but the evidence suggesting sequential procedure may result in a different outcome are conflicting (Weir, 2016).

Additional studies have replicated the VOE (Smith & Flowe, 2014). However, there have been some notable exceptions (Clifford, 2003). While the VOE itself has been observed in a number of situations, theoretical accounts of the phenomenon have been less successful in definitively determining which of the many underlying cognitive mechanisms lead to impaired recognition performance following verbalization of a previously encoded memory.

### **Accounts**

There are three primary theories regarding why the VOE occurs: the retrieval based interference account, which argues that verbal recall alters the original encoded memory, resulting in impaired recognition memory performance; the transfer inappropriate processing shift account, which suggests that the cognitive processes

involved in the verbal recall task interfere with the cognitive processes required for accurate recognition, thus, impairing recognition memory performance; and the response criteria shift account, which suggests that verbal overshadowing is due to a decrease in response criteria during the recognition task— in other words, verbal overshadowing is present when people are less likely to choose a person from the lineup at all.

In their multi-experimental study, Schooler and Engstler-Schooler (1990) found consistent evidence to support the retrieval based interference account. According to their findings, the verbalization of a picture in one's mind can lead to the creation of an interfering "nonveridical verbally biased representation" (Schooler & Engstler-Schooler, 1990, p. 62). Thus, the recalled visual, although inaccurate, strongly corresponds to the original visual that was encoded by the witness, leading to inaccuracy. This also accounted for why verbal overshadowing occurred in experiments that tested subjects other than faces (Schooler & Engstler-Schooler, 1990).

Furthermore, forcing a participant to make a quick decision, though still allowing for a "not present" option, did not result in verbal overshadowing. According to the duo, "... subjects have an intact visual code that is later overshadowed by access to a code that has been influenced by the verbalization" (Schooler & Engstler-Schooler, 1990, p. 62). Thus, this cognitive process thereby creates the context of the retrieval based interference account for the VOE. Despite the strong support for this hypothesis, however, there still remains two other accounts, both of which are supported by experimentation as possible explanations for verbal overshadowing.

The goal of the present study was to test the response criteria shift (RCS) account for the VOE. Recall that the RCS account specifies that verbal overshadowing may be the result of a decrease in response criteria during the recognition task. Clare and Lewandowsky found in their 2004 study, "Verbalizing Facial Memory: Criterion Effect in Verbal Overshadowing", that verbalization led to an increase in the rate at which participants chose not to identify a suspect from a lineup, regardless of whether or not the suspect was actually present. Furthermore, the second part of their experiment forced participants to make a selection from the lineup. In their trial, Clare and Lewandowsky (2004) found verbal overshadowing to not have occurred in this second experiment, and their results indicated that the VOE could be essentially captured by the shift in recognition criteria (Clare & Lewandowsky, 2004). From this result, they argued in favor of the RCS account for the VOE, stating that verbal overshadowing is present when participants have a reluctance to make a selection from the lineup, and arguing that the results of their second experiment indicate that the VOE is not present when such a reluctance does not exist. As mentioned, the goal of the present study was to test the RCS account for the VOE, putting the conclusion from Clare & Lewandowsky's study, specifically as a result of the second experiment, to the test.

In this study, participants were shown a crime video of a burglary. Next, participants engaged in a recall task: some participants were asked to describe the face of a burglar in the video and other participants were not. All participants were asked to identify the burglar from a two-person lineup. In order to test the RCS account,

participants were forced to choose a person in the lineup task. Unlike a traditional police lineup, the option to not choose a suspect was unavailable. The present study was interested in testing the accuracy of the RCS account by the independent variable of an assigned recall task. If verbal overshadowing is observed in the present study, identification accuracy will be lower in participants who engaged in the recall task. If this is the case, results would indicate that the VOE is not simply the result of a shift in response criteria, since participants are forced to choose from the lineup. Thus, either the RCS account is an invalid explanation for the cause of verbal overshadowing, or it alone cannot be the cause.

## METHOD

### Participants

Two hundred forty-one undergraduate students from the University of Mississippi participated in this study. Students voluntarily signed up for the experiment through the university *Sona System* website. Participating students received either general credit or extra credit for their class. Approximately three-fourths (seventy-three percent) of participants were female; approximately one-fourth (twenty-six percent) of participants were male. The average age of participants was eighteen years and seven months old. Participants were sorted into one of either two groups by random assignment.

### Design

The experiment was a between-subjects, single factor design; participants either had to engage in a recall activity ('verbal recall yes' condition) or play a game of Tetris ('verbal recall no' condition). There were two dependent variables for this experiment: identification accuracy and identification confidence.



## Procedure

The experiment was conducted in a room with four computers, each lined in a row and facing the wall. The spaces between each desktop computer were divided by a privacy barrier. These barriers blocked the vision of neighboring screens and prevented any participants from being able to see the responses being given by other participants.

When it was time to begin, participants were told they were taking part in a study titled, "Opinions of a Video" and verified they were at least eighteen years old. After this, participants were told, "The experiment will now begin. Please do not speak during the experiment, and please read all instructions carefully throughout the experiment the experiment. Try your best to pay attention and follow the instructions to the best of your ability. Some parts of the study are timed. This means that the computer will take you through some parts of the study automatically. Some parts of the study you will move at your own pace. Please read the instructions carefully." After this, participants continued the study, and they were presented with a video to carefully observe.

Participants watched a short home surveillance recording. The recording shows a female suspect discretely entering a home through a glass door at the back of the home. The suspect then proceeded to burglarize a set of cabinets, taking items, before looking around and exiting the house through the same glass-paneled door she entered from. Stills from the crime video can be seen in Figure 1. After watching the video, participants either engaged in the verbal recall task or the control task.

**Figure 1.** Screenshots from the crime video.



Participants in the ‘verbal recall yes’ condition were instructed, “Please describe the face you saw in the video. Your task is to describe the person in such a way that your description would aid someone else in attempting to identify the person. Your description should focus on facial features. Write about the shape and size of the eyes, eyebrows, nose, ears, mouth, chin, etc. Try not to leave out any details about the face even if you think they are not important.” This purpose was this task was to both provide the theoretical opportunity for verbal overshadowing to occur and provide a feedback that would potentially be similar to that given by an investigating law enforcement official.

Participants assigned to the ‘verbal recall no’ condition did not describe the burglar. Instead, these participants played a game of Tetris. This served as a stand-in of equal duration that did not require the participant to engage in recalling visual information from the video. The duration of both the verbal recall task and Tetris games were both exactly two minutes long.

Once the two minutes had passed, all participants were instructed to pick the burglar from a two-person photo lineup. The lineup consisted of two mugshots of

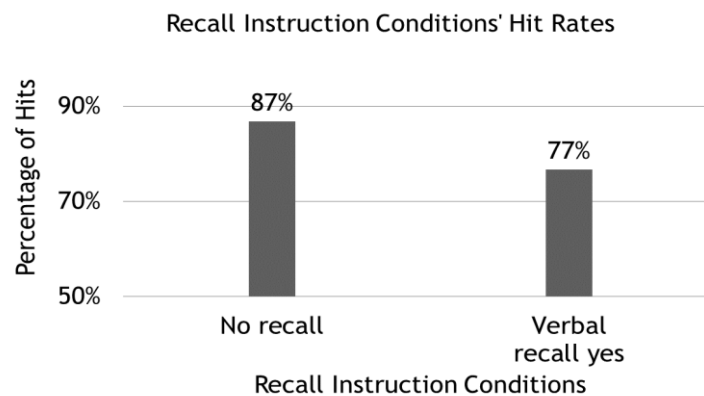
women of similar appearance. Participants were forced to choose a person from the lineup. Once a selection had been made, participants were prompted to rate their level of confidence in their selection on a scale of 1 (not at all certain) to 7 (absolutely certain). After completing this final task, participants filled out a demographic information page, were thanked for their participation, and allowed to leave.

## RESULTS

### Identification Accuracy

To examine the influence of verbal recall on identification accuracy, a logistic regression consisting of verbal recall (yes or no) was conducted for hits. Hits occur when participants correctly identify a suspect in a target present lineup. Results, displayed in Figure 2, showed that, compared to the 'verbal recall no'/Tetris game condition (77%), the 'verbal recall yes'/recall task condition (87%) had a statistically significant, lower hit rate,  $WaldX(1)=4.035$ ,  $OR=1.99$ ,  $p=0.045$  (see Figure 2). Results show that participants who recalled the facial features of the suspect demonstrated verbal overshadowing and participants who did not provide a description did not demonstrate verbal overshadowing. Thus, despite being forced to make a selection from the lineup, participants in the present study demonstrated verbal overshadowing.

**Figure 2.** Participant accuracy rates.



## Identification Confidence

The difference in confidence ratings for identifications between the 'verbal recall no'/Tetris game condition (M = 5.76, SD = 3.25) and the 'verbal recall yes'/recall task condition (M = 6.24, SD = 2.98) was not statistically significant,  $p = .233$ . This shows that participants of this study, regardless of whether or not they engaged in the recall task or Tetris game- thereby, also regardless of whether or not they were more or less accurate- were approximately statistically equivalent in the confidence level of their selection.

## DISCUSSION

The results of this study suggest that participants who engaged in the verbal recall task have poorer identification accuracy than participants who did not engage in the verbal recall task. Thus, the VOE is observed in the present study. Furthermore, results indicate that verbal overshadowing is observed despite participants being forced to make an identification. This finding is contrary to the RCS account for the VOE and supports the notion that shifts in response criterion are not solely responsible for the verbal overshadowing effect. These results are consistent with previous research (Clare & Lewandowsky, 2004).

One very interesting finding from this study was the result of the confidence rating between participants. In their initial study, Schooler and Engstler-Schooler (1990) also had a statistically insignificant difference between the two categories of participants. However, in their study, the inverse had occurred: the marginally higher confidence rating came from participants who did not engage in the verbal recall task. In the present study, however, the opposite result was found: participants who engaged in the recall task recorded a slightly higher confidence rating in their selections. This finding could be extremely concerning given the inaccurate nature of the selections made by this group.

From this, we can deduce that, in a real world setting, witnesses who engage in verbal overshadowing could be more likely to trust their selections than witnesses who are statistically more likely to be making a correct identification. However, it should be noted that this particular result in confidence rating could be specific to studies conducted in the context of the RCS account of verbal overshadowing.

This study carries a major theoretical implication in regards to further research in the area of verbal overshadowing. As mentioned before, the results of this experiment are supported by and support other tests regarding the RCS account (Clare & Lewandowsky, 2004). With that in mind, it becomes more apparent that an understanding of the cognitive processes responsible for verbal overshadowing are beyond solely factors regarding response criteria. Thus, future studies should ideally focus on either testing the other two accounts for verbal overshadowing or testing the RCS account in conjunction with the other two accounts, narrowing down potential causes and causal overlaps that may be present in the phenomenon.

Another major implication of this study is the scientific support of allowing for witnesses and victims to reject choosing a suspect from a lineup. Although there is a Constitutional implication in not forcing someone to make a selection from a lineup, some law enforcement personnel may feel that a witness not making a selection can significantly harm a case. However, a witness not being able to confidently make a selection from a lineup does not singlehandedly throw out the case against a suspect. Rather, considering that a hesitation to select does not necessarily indicate the witness knows with confidence that all participants of a lineup are innocent of the offense being

investigated, a witness' hesitance to make a selection can be the result of many other factors and circumstances surrounding the methods used by the offender.

For example, an individual, John Doe, is assaulted at night by an assailant. When he calls the police afterwards, the responding officer asks for a description of the suspect, and Mr. Doe engages in a recall task similar to that undergone by the 'verbal recall yes' participants of this study. When it comes time for a lineup, Mr. Doe is very anxious about his role in the investigation process, and he is hesitant to make a selection. Instead, he declines to pick anyone from the lineup, and he says he is unsure if the attacker is among the group or not.

Although Mr. Doe was able to get a brief idea of his attacker's appearance, there are several factors that would contribute to his being unsure about making a lineup identification. If the attacker used a weapon, then Mr. Doe would more than likely focus his attention on the weapon being pointed at him, as is understood to be the case in the so-called weapons effect. Furthermore, let us say this hypothetical attack took place at night, and the lighting at the scene of the crime was very poor. In this case, Mr. Doe's identification would more than likely be highly contested by any defense attorney working to exonerate their client, the suspect identified in the lineup.

However, let us say that during the proceeding of this hypothetical crime and subsequent investigation, Mr. Doe does in fact make a selection from the lineup. Perhaps he feels like the police officers involved may be frustrated with him for not making a selection, or maybe he has a particular feeling about someone in the lineup.



Regardless, a selection is made, and the identification is used as evidence against the suspect. In this scenario, we know from the results of this experiment that verbal overshadowing is still likely to take place, despite the shift in response criteria (feeling obligated to make a selection), and Mr. Doe might actually have more confidence in his selection than if he had never been interviewed by the police and thus asked for a suspect description. An incorrect identification would undoubtedly provide more trouble for the police officers investigating the case than if Mr. Doe had declined to make a selection as he was initially inclined to do.

There were two notable limitations to this experiment. The first limitation comes from the sample used. In this experiment, the sample did not accurately reflect the gender breakdown of the United States; instead, females were heavily overrepresented, and males were heavily underrepresented. However, this difference in participant gender is likely due to the high number of female students in Psychology programs, which the study drew most of its participants from.

Another potential limitation comes from the lineup used in the experiment. For this study, the lineup the participants selected from was comprised of only two mugshots. This could theoretically result in an increase hit rate if participants decided to randomly select, thus having a fifty percent chance of correctly selecting the correct participant, whereas a six or eight-person lineup has a drastically reduced chance of correct selection by chance.

Despite these limitations, the results of this study show that the response criteria shift account for the verbal overshadowing effect is an inadequate sole explanation for this phenomenon. With this, the scope of potential causes for the effect can be significantly narrowed down, granting a better focus for future studies aimed at providing a better understanding of the cause of verbal overshadowing. Furthermore, a greater understanding of the factors inhibiting eyewitness accuracy can help to provide law enforcement with a more just and scientifically accurate understanding of how to treat witnesses.

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