

Using the source provided, respond to all parts of the question.

1. Your response to the question should be provided in six parts: A, B, C, D, E, and F. Write the response to each part of the question in complete sentences. Use appropriate psychological terminology in your response.
 - A. Identify the research method used in the study.
 - B. State the operational definition of high misinformation in the study.
 - C. Describe what the mean indicates for the percentage of correct responses between the high misinformation group and the low misinformation group.
 - D. Identify at least one ethical guideline applied by the researchers.
 - E. Explain the extent to which the research findings may or may not be generalizable using specific and relevant evidence from the study.
 - F. Explain how at least one of the research findings supports or refutes the misinformation effect.

Introduction

This research study explores the effect of being presented with varying amounts of misinformation about a specific event on the memory of that event.

Participants

A total of 127 students at a large university were recruited through the university's research participation system. They participated in the study in exchange for course credit. The final sample of participants was 69% women and 31% men. The race/ethnicity of the participants was reported as follows: 65% Hispanic/Latino/a, 15% Black/African American, 11% White/European American, 4% Asian/Asian American, and 5% Other.¹ The participants ranged in age from 18 to 39 years old (mean age = 21.21, standard deviation = 3.28).

Method

After providing consent, participants viewed a 6.5-minute silent video of a mock crime. The video depicted an electrician entering a house to fix items such as an oven and a light fixture. While he was in the house, he stole some of the owners' possessions. After watching the video, participants completed a 12-minute trivia questionnaire as a distractor task.² Participants completed all portions of the study online.

Participants were then told that eight previous participants had written brief summaries of the robbery shown in the video. They were also told that one of those summaries would be presented to them, along with a profile of the previous participant, to refresh their memory. Unknown to the participants, these "previous participants" were not real people. The researchers created the previous participants' profiles based on the demographics of the population of students on the university campus. The goal was to create believable profiles so that the summaries would be more credible to the participants.

Participants were randomly assigned to one of three conditions to receive a summary with a specific amount of misinformation:

- Low misinformation condition: 8 of 40 sentences (20% misleading information)
- Medium misinformation condition: 20 of 40 sentences (50% misleading information)
- High misinformation condition: 32 of 40 sentences (80% misleading information)

The misleading information changed details about items seen in the video. No information was added. The non-misleading sentences were neutral to avoid strengthening the participant's memory of the target items. For example, a misleading item description was, "He noticed the dresser was covered with a brown cloth." In reality, the cloth was navy blue. The neutral description of that item was, "He noticed the dresser was covered with a cloth."

After reading an entire previous participant's summary, each current participant completed a 5-minute math test as a distractor task. Then, all participants were asked an identical set of 40 multiple-choice questions in random order about the mock crime video. Each question had three answer options:

1. Correct: the correct option corresponding to what was shown in the video (e.g., a navy blue cloth);
2. Misled: an incorrect answer that reflected misinformation provided in the summaries (e.g., a brown cloth); and
3. Incorrect: an incorrect answer containing information that was not portrayed in the video or any summary (e.g., a yellow cloth).

Participants then completed a questionnaire asking about the credibility of the previous participant's summary (e.g., "How good was the quality of the summary?" and "How familiar with the video was the participant who wrote this summary?").

Results and Discussion

The researchers analyzed the results of the questionnaire by comparing participants' correct responses with how participants viewed the credibility of the previous participant's summary. The researchers hypothesized that if participants distrusted the summary, they would be less likely to incorporate the information into their memory of the event, leading to their being less likely to choose an incorrect answer. The results are shown in the table.

Mean Percentages of Correct, Misled, and Incorrect Responses for Each Misinformation Condition

Response Type	Misinformation Condition		
	High Misinformation Group	Medium Misinformation Group	Low misinformation Group
Correct	63%	66%	74%
Misled	30%	27%	19%
Incorrect	7%	7%	7%

The researchers found that within each condition, participants performed best if they distrusted the accuracy of the summary. Participants who were presented with higher levels of misinformation were more likely to report being distrustful, and those who reported being distrustful of the summary resisted more misinformation than those who did not.

Pena, M. M., Klemfuss, J. Z., Loftus, E. F., & Mindthoff, A. (2017). The effects of exposure to different amounts of misinformation and source credibility perception on source monitoring and memory accuracy. *Psychology of Consciousness: Theory, Research, and Practice*, 4(4), 337-347.

- 1: Language referencing racial, ethnic, or gender identities may be outdated or fail to reflect the complexities of identity that participants represent. Race/ethnicity categories reflect those reported in the original research article.
- 2: a task that is unrelated to the primary task that participants are asked to complete before they are asked to recall the target information.

This question has three parts: Part A, Part B, and Part C. Use the three sources provided to answer all parts of the question.

For Part B and Part C, you must cite the source that you used to answer the question. You can do this in two different ways:

- Parenthetical Citation:
For example: “...(Source 1).”
- Embedded Citation:
For example: “According to Source 1...”

Write the response to each part of the question in complete sentences. Use appropriate psychological terminology.

2. Using the sources provided, develop and justify an argument about whether the presence of others improves performance.
- A. Propose a specific and defensible claim based in psychological science that responds to the question.
- B.

i. Support your claim using at least one piece of specific and relevant evidence from one of the sources.

ii. Explain how the evidence from Part B (i) supports your claim using a psychological perspective, theory, concept, or research finding learned in AP Psychology.
- C.

i. Support your claim using an additional piece of specific and relevant evidence from a different source than the one that was used in Part B (i).

ii. Explain how the evidence from Part C (i) supports your claim using a different psychological perspective, theory, concept, or research finding learned in AP Psychology than the one that was used in Part B (ii).

Source 1

Introduction

In this study, researchers attempted to establish whether the presence of others leads people to perform better on a task than when they are doing the task alone.

Participants

Forty-five undergraduate students, all men, received course credit in an introductory psychology course for their participation. Researchers did not report race/ethnicity data for the participants.

Method

As each participant arrived, he was told the following: “In this experiment, you will be part of a group that will perform a task together. It is important that the members of the group have a uniform appearance. To make you as alike as possible, I’d like you to take off your shoes, put these socks over your own socks, and then put on these shoes. They might be a little large, but we need to have a size that fits everyone. Also, put on this lab coat—it ties in the back—over your own clothes.”

Each participant was then given a pair of large athletic socks, a pair of size 12 athletic shoes, and a large, long lab coat. Each participant was led by the researcher to a large waiting room containing tables, chairs, reading material, and some broken equipment.

Each participant was randomly assigned to one of three conditions: alone, audience, or incidental audience.

1. Alone condition: The participant was left in the waiting room alone to put on the clothing.
2. Audience condition: A confederate of the researcher was already seated in the waiting room as the participant arrived. The confederate sat attentively in the corner and watched the participant put on the clothing.
3. Incidental audience condition: A confederate of the researcher sat in a corner of the waiting room facing away from the participant, repairing a broken piece of equipment while the participant put on the clothing.

For all three conditions, the participant was observed by a hidden research assistant who watched him through a narrow opening in the drapes that covered a one-way mirror. The hidden assistant timed the participant as he completed each of the following activities:

1. Taking off his own shoes
2. Putting on the socks given to him
3. Putting on the shoes given to him
4. Putting on the lab coat given to him and tying it in the back

After the participant completed the four tasks, any confederate present left the room, and the participant was left sitting alone. At the end of 10 minutes, the researcher came back into the room. The researcher explained that the other participants had not shown up and that the researcher had called off the experiment because the researchers needed three people to continue.

When the researcher left the room, the participant was again timed by the hidden research assistant while he completed the following actions:

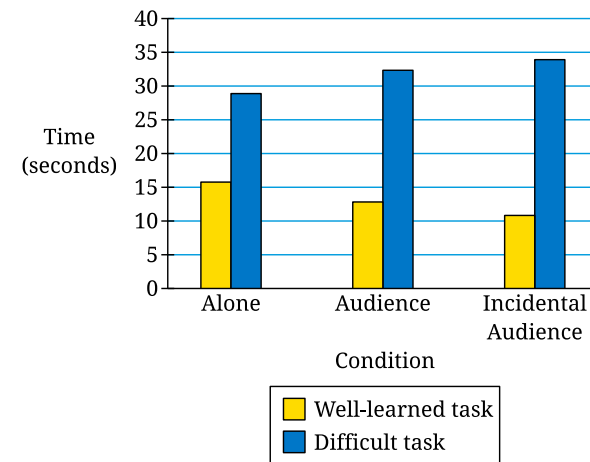
1. Taking off the lab coat
2. Taking off the shoes given to him
3. Taking off the socks given to him
4. Putting on his own shoes

Researchers categorized taking off and putting on their own shoes as simple and well-learned tasks. They categorized putting on and taking off the socks, shoes, and lab coat as difficult and new tasks.

Results and Discussion

Researchers found that performance on the well-learned tasks was faster in the presence of an audience. Performance on well-learned tasks improved both when participants were directly observed (audience condition) and when the confederate was present in the room but distracted (incidental audience condition). When an audience was present, it took the participants longer to complete the new, more difficult tasks. The findings are summarized in the graph.

Audience Condition and Completion Time of Task



For the simple and well-learned tasks, researchers found a statistically significant difference in the amount of time participants took to complete the tasks alone compared with the amount of time it took with an attentive audience.

For the new and difficult tasks, researchers found a statistically significant difference when comparing the amount of time participants took when alone with the amount of time they took when they were in the audience condition or incidental audience condition.

They found no significant difference between the alone condition and the incidental audience condition for either type of task.

Markus, H. (1978). The effect of mere presence on social facilitation: An unobtrusive test. *Journal of Experimental Social Psychology*, 14(4), 389–397.

Source 2**Introduction**

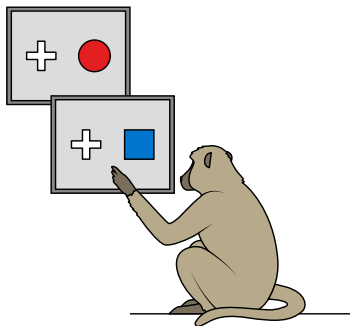
In this study, researchers explored how the presence of others influenced the ability of baboons to complete an operant conditioning task.

Participants

The study was conducted on 11 baboons (7 male and 4 female; mean age = 5.72 years; standard deviation of age = 1.71; age range = 3–9 years).

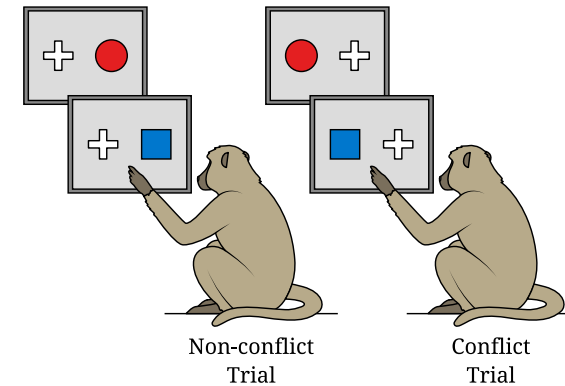
Method

The baboons had access in their enclosure to computers with touch screens, preprogrammed with operant conditioning tasks. When the baboons touched a screen, it triggered the immediate display of a white cross and either a red circle or a blue square. To obtain a food reward, the baboon had to touch the white cross only when the red circle was present. During the non-conflict trials, the white cross was always presented on the left side of the response screen and the red circle or blue square on the right. Incorrect responses produced a three-second time-out.

Figure 1: The Non-Conflict Trial

Baboons performed the task until they correctly demonstrated the rewarded behavior three times in a row.

Once the baboons were trained, researchers increased the difficulty of the task. In 80% of these trials, the baboons were given the setup they were already familiar with, in which the cross was on the left and the circle or square was on the right. But in 20% of the trials, the baboons were presented with an opposite, or a conflicting, setup in which the cross was on the right and the circle or square was on the left. Researchers measured the baboons' response times when presented with the conflicting task versus the nonconflicting task.

Figure 2: The Non-Conflict and the Conflict Trial

During these trials, the baboons were randomly assigned to be either alone or in the presence of other baboons performing the same task. For baboons performing the task in the presence of others, they could see other baboons using a computer, but the design of the test chamber prevented any of the baboons from seeing the touch screens of the other baboons. As a result, the baboons could not see the other baboons' responses to the tests.

Results and Discussion

For the baboons who were in the presence of others during the conflicting trials task, their response time was delayed when compared to baboons who were alone. The researchers found that the delayed reaction time was greatest for male baboons in the presence of older males with a higher social rank.

Huguet, P., Barbet, I., Belletier, C., Monteil, J.-M., Fagot, J. (2014). Cognitive control under social influence in baboons. *Journal of Experimental Psychology*, 143(6). 2067-2073.

Source 3**Introduction**

Vigilance is the ability to maintain attention for prolonged periods while still being on the lookout for relevant signals in the environment. Vigilance performance involves participants responding to infrequent signals over time. In this study, researchers examined the effect of observers on people's vigilance performance.

Participants

Data were collected from 132 participants (98 women; 34 men).¹ All participants were undergraduate students recruited through the research participation system at a large university in the southeastern United States. All participation was voluntary, and participants received course credit for completing the study. The average age of participants was 18.83 years (standard deviation = 2.23 years; range = 18–39 years). Researchers did not report race/ethnicity data for the participants.

Method

For 24 minutes, participants monitored a computer screen displaying repeated presentations of two numbers. They were instructed to press the space bar when they saw two numbers that differed from one another by zero or ± 1 when subtracted. For example, participants were to hit the space bar when presented with the numbers 43 ($4 - 3 = 1$) or 77 ($7 - 7 = 0$), but not when presented with 73 ($7 - 3 = 4$) or 39 ($3 - 9 = -6$).

Participants were randomly assigned to one of four conditions:

1. Evaluative observer condition (29 women; 4 men): The participant completed the task with a research assistant present and seated behind them. The research assistant was instructed to sporadically take notes on a clipboard to create the appearance of actively evaluating the participant.
2. Merely present observer condition (20 women; 13 men): The participant completed the task in the presence of a research assistant who was seated at an adjacent desk, facing the opposite direction. The observer could not directly watch the participant and was engaged in a secondary task, like reading a book.
3. Electronic observer condition (25 women; 8 men): The participant completed the task in the presence of a webcam that was placed on top of the computer screen. A video recorder was also placed on a tripod in front of the participant. The participant was told that the research assistant used these devices to monitor their performance. These cameras were not actually recording while the participant completed the task, but the participant believed they were.
4. No observer present (control) condition (24 women; 9 men): The participant completed the entire task alone in the room. No social presence, electronic or otherwise, was used during this task.

Results and Discussion

Participants who completed the vigilance task alone detected significantly fewer correct number pairs than those who completed the task in the electronic observer condition or the evaluative observer condition. Interestingly, there was no significant difference in correct detections between those in the no observer present condition and those in the merely present observer condition.

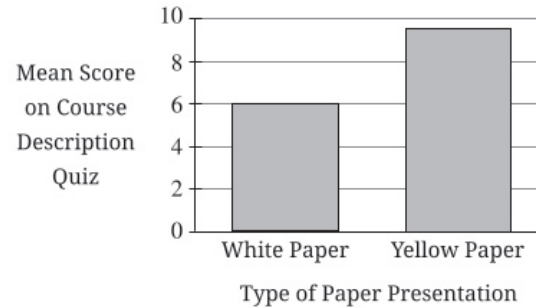
The results suggest that when people feel they are being directly evaluated by either an inperson or electronic observer, they perform better on tasks that require vigilance.

Claypoole, V.L., Neigel, A.R., Waldfogle, G.E., & Szalma, J.L. (2019). Evaluative social presence can improve vigilance performance, but vigilance is still hard work and is stressful. *Journal of Experimental Psychology: Human Perception and Performance*, 45(5), 616-627.

1: Language referencing racial, ethnic, or gender identities may be outdated or fail to reflect the complexities of identity that participants represent.

STOP
END OF EXAM

2. Professor Gonzalez hypothesizes that students will remember more information from his detailed course description if it is printed on yellow paper than if it is printed on standard white paper. To test this hypothesis, he put the names of all his students into a bowl, then drew out names to assign them to two different groups. He gave one group of the students in his class a course description printed on white paper, and gave the other group of students a course description printed on yellow paper. Students were instructed to thoroughly read the description outside of class in preparation for their next class. In the next class, he gave all students a ten-question quiz asking them about the information found on the course description. Professor Gonzalez then compared the number of correct answers for each group of students. The statistically significant results are depicted in the graph.

**Part A**

- State the operational definition of the dependent variable.
- Identify the experimental group.
- In addition to the manipulation of an independent variable, identify the procedure Professor Gonzalez used to make this study a true experiment.
- Explain how the data as presented in the graph do or do not support Professor Gonzalez's hypothesis.

Part B

Explain how each of the following might relate to a student's performance on any quiz.

- Context-dependent memory
- Yerkes-Dodson law
- Low level of the Big Five trait of conscientiousness

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP**END OF EXAM**

PSYCHOLOGY**SECTION II****Time—50 minutes****2 Questions**

Directions: You have 50 minutes to answer BOTH of the following questions. It is not enough to answer a question by merely listing facts. You should present a cogent argument based on your critical analysis of the questions posed, using appropriate psychological terminology. You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

1. Claire's sports team made it to the championship basketball game. To play the game, the teammates will need to work together to move a ball toward their own goal. They must then aim carefully to throw the ball into a hoop that is elevated about 10 feet off the ground. The winner is the team that gets the ball into the hoop the most times.

Part A

Explain how each of the following might help Claire be successful during the game.

- Retinal disparity
- Intrinsic motivation
- Social facilitation
- Kinesthetic sense

Part B

Claire's team won the championship game. Ten years later, the team got together for a reunion at the gym where the game was originally held. At the reunion, they discussed the championship game.

Explain how each of the following might influence Claire's recollection of the game.

- Context-dependent memory
- Self-serving bias
- Retroactive interference

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.