INTRO PSYCH SCIENTIFIC REASONING MODULE: EYEWITNESS TESTIMONY

INSTRUCTOR GUIDE FOR SMALL CLASSES

TOPIC: MEMORY

Photo source: https://en.wikipedia.org/wiki/Witness_impeachment

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Summary

In this module, students discuss two experiments related to the malleability of eyewitness memory. Students engage in thinking about how lab-based, experimental research helps answer real-world questions with real-life consequences – human memory for crime. This module has a particular focus on the details of lab-based experiments that can carefully control and isolate causal variables. The module also focuses on the importance of programmatic research designs, in which multiple experiments build on and reinforce each other.

Topic Memory

Source Article

Loftus, E. (1975). Leading questions and the eyewitness report. *Cognitive Psychology, 7,* 560-572.

Content Specific Student Learning Objectives

1. Identify the DV and IV in a research study.
2. Identify different conclusions that can be drawn from the same set of data.
3. Analyze limitations of a research design.
4. Analyze how different research designs allow researchers to test alternative hypotheses.

APA Learning Objectives (2.0)

1.1 Describe key concepts, principles, and overarching themes in psychology.
1.3 Describe applications of psychology.
2.1 Use scientific reasoning to interpret psychological phenomena.
2.2 Demonstrate psychology information literacy.
2.4 Interpret, design, and conduct basic psychological research.

MCAT Learning Objectives (2015)

Psychological, Social, & Biological Foundations of Behavior: Foundational Concept 8C
Scientific Inquiry & Reasoning Skills

Skill 2: Scientific Reasoning and Problem-solving
Skill 3: Reasoning about the Design and Execution of Research
Skill 4: Scientific Statistical Reasoning

Class Time 30-60 minutes.

Other resources for this module

Student Handout, PowerPoint Slides

BEFORE CLASS

Copy Student Handouts – 1 per student (double-sided).

Read through this guide, getting an estimate for how much time to spend on each piece, depending on the time you have available.

Review student handout and studies / questions discussed. Be sure you understand the differences between the two studies, as well as the conclusions that can be drawn from each.

DURING CLASS

SET THE STAGE

[Slide 1] (title slide)

- Ask class what they know about the use of eyewitness testimony in the courtroom
    - Would you trust an eyewitness of a crime or event?
- In class today you'll be discussing a pair or studies showing that memories of eyewitnesses can be altered by the phrasing or content of questions

ACTIVITY

Pass out student handout.

- Have students divide into small groups and discuss <u>only Experiment 1</u> (Figure 1 and Part I questions; first page)
    - Remind students to only complete Part I, class will look at Part II later
    - Instruct students to assume that all differences presented are significant
    - As students discuss, circulate to clarify any questions about experimental design or pattern of results
    - Ensure that for question 2, students have generated at least two possible conclusions before moving on to question 3

[Slide 2] (experiment 1)

- Return students to full group discussion to continue discussion of Experiment 1 and the following key points
    - Have students describe the pattern of results shown, including identification of the IV and DV
        - IV: type of question

        - DV: percent answering 'yes'
    - Comment that this is a true experiment because the experimenter manipulated the IV and participants were randomly assigned to conditions
        - We can conclude that something about the difference in the question *caused* the difference in the outcome, but we can't be sure what causes this difference
    - To clarify: all participants watched the same video in which a stop sign was present, and a car turned right
        - Conclusion 1: The participant saw the stop sign, and asking the stop sign question reinforces that fact
        - Conclusion 2: The participant could have not noticed the stop sign (even though it was in the video) and the leading question inserted new information into the participant's memory
- Brainstorm alternative experimental designs that would produce results that could potentially support one hypothesis over the other, including alternatives students have already discussed in small groups
    - Have students clearly state the independent and dependent variables in their proposed experiments
- Have students again divide into small groups and discuss Experiment 2 (Figure 2 and Part II questions – second side of handout)
    - While circulating among small groups, ensure students notice that the manipulation now includes false information that contradicts the scene shown in the video

[Slide 3] (experiment 2)

- Return students to full group discussion to continue to discuss Experiment 2 and the following key points
    - Clarify the pattern of results, and questions about experimental design
        - Note that participants reported a different number of demonstrators depending upon whether the question cued '12 demonstrators' or '4 demonstrators' (actual number of demonstrators was 8)
    - Ensure class identifies differences between the two studies, and how the studies together can provide more information than either in isolation.

        - In study 1, all participants were asked a question that reinforced a piece of the film (running the stop sign or turning right). In study 2, all participants were given incorrect information about the number of demonstrators
    - Return to the experiments that students had previously proposed. Discuss the advantages and disadvantages of their experiments as compared to the one done by the authors, particularly in terms of whether the study can rule out alternative conclusions

CONCLUDING THOUGHTS

- Full class discussion about the following points:
    - What are the implications of this research for the legal system?
        - Remind the class that many people fail to recall relevant information (e.g., the presence of a stop sign) even when leading questions are used
    - Conclude by pointing out how one study never tells the whole story. Each new study contributes evidence in support of a theory. Multiple studies with different features that converge on the same set of findings help us best understand the question