

1999

AP PSYCH  
MR. AIELLO

2. In a study, researchers use a photograph taken in a public park to examine how people perceive, learn, and remember information. In the photograph, a woman is standing near a man who is seated on a park bench. The woman appears to be shouting at the man.

Participants in the study are exposed to the photograph for ten seconds and then are shown, each for ten seconds, several other photographs of people interacting. When all the photographs have been shown, the participants are asked about what they saw in the "public park" photograph. A significant number of participants describe the man as being the aggressor in an apparent disagreement with the woman.

Describe how each of the following concepts helps explain the perception of these participants. Be sure to begin by defining each concept in psychological terms.

- schema
- retroactive interference
- representativeness heuristic
- confirmation bias
- framing

## Question 2

This question proved to be very difficult for all but the most capable students. The typical student showed limited recall of the concepts in this question and consequently was not able to apply them to interpret the results of the experiment. On the other hand, capable students (as defined by scores on the multiple-choice section and question 1) were able to recall these concepts, give clear and accurate definitions, and correctly apply them to the experimental results. The question also differentiated among these top students (students receiving scores of 4 and 5 on the exam). Faculty consultants were immensely impressed by the clarity and cogency of these top essays.

Most of the concepts on this question deal with cognition. The results of the question suggest that many teachers do not give adequate weight to this section of psychology. It is hard, otherwise, to explain their students' difficulty in recalling the frequently and widely discussed concepts of schema and retroactive interference. The area of cognition has been called a "third wave" in the history of contemporary psychology

and has revolutionized our understanding of the science and its application to the world we live in. It might behoove more teachers to pay at least as much attention to this area of psychology as they obviously do to behavioral and biological orientations.

One final note: The fact that a concept is not in every textbook, is in a chapter that is not always covered, and/or is not in older textbooks is not a cogent argument against testing students' knowledge of the concept. It is vital that AP teachers keep up with major developments in psychology and go beyond the textbook in their efforts to acquaint their students with these new developments. Of course, many AP teachers do not enjoy the luxury of being able to use new, up-to-date textbooks each year. In such cases, they should continue to press their administration for the purchase of the most recent textbooks, or supplement older textbooks with more recent materials, so that the students in their school district are able to compete successfully with students from school districts that do provide their AP students with current textbooks.

## Question 2 Scoring Guidelines

- Definition for each term is 1 point and each application is 1 point; they are not dependent on each other. The application must be identified with the correct term and linked back to the experiment.
- Definition is an odd number point and application is an even number point.
- The first four concepts are from the subject's point of view and the last concept is from the experimenter's point of view.

### Schema — Points 1 and 2

#### Definition (1 point):

A framework used to organize information.

Concept		Process for input of information
template structure framework set plan model expectations representations blueprints set of ideas mental set network	OR	organizing interpreting incorporating ordering shaping predicting

**Not acceptable:**

- Perception alone will not do it (e.g., "the way you perceive").
- Mind set, preconceived ideas, patterns of thought.
- Example is not a definition.
- Outcome only — understanding, how I see the world, knowledge.

**Application (1 point):**

Participants have formed the expectation that the male is the aggressor. Outcome is acceptable in the application.

**Retroactive Interference — Points 3 and 4****Definition (1 point):**

Information that is presented *after* the presentation of information to be remembered interferes with or blocks old information.

*The definition of retroactive interference can be phrased in terms of information without specific reference to memory processes.*

- Disruptive effect of new learning on old information.
- New information distorts old information.

**Application (1 point):**

The photographs that were presented after the photo of the "public park" might interfere with or block the details of the "public park" photo.

**Representativeness Heuristic — Points 5 and 6****Definition (1 point):**

A rule of thumb for judging the likelihood of events based on how well something fits a prototype. That is, how similar are people (or an individual) in the event to prototypical views of such people?

*Defining the representative heuristic as a concept, conclusion, or reasoning process is acceptable. These are presented, respectively, in the boxes below.*

- |  |
|--|
| ■ "rule of thumb," or "problem-solving strategy," or "cognitive shortcut" may stand alone. |
|--|

OR

- |   |
|---|
| ■ a judgment, decision, solution, or conclusion based on how well an observation or event fits one of the following: a prototype, schema, cultural norm, or stereotype. |
|---|

OR

■ judging, deciding, solving, figuring out or processing in line with what one	normally	experiences in most situations as related to the issue of male-female aggression depicted in the photographs.
	typically	
	generally	
	usually	

**Not acceptable:**

- References to perception or perceptual experiences alone.
- References to memory, remembering, or recall (e.g., "remembering things that stand out the most").
- Individual is representative of a population or group (i.e., the representativeness heuristic does not refer to how an individual may or may not be representative of a population; this is not representative sampling).

**Application (1 point):**

Aggressive men/non-aggressive women are seen as more "typical." An aggressive man fits this prototype, an aggressive woman does not. Hence, participants conclude that the man is the aggressor or that the woman is not the aggressor. Participant chooses, decides, judges, perceives, or selects a strategy which leads to the conclusion that the male is the aggressor (or that the woman is not the aggressor as depicted in the photograph). Answers must relate the error to this study and context.

**Confirmation Bias — Points 7 and 8****Definition (1 point):**

Attending to information that supports one's preconceptions. You pay attention to information that confirms your preconceptions and/or ignore information that does not.

■ Tendency to search for information or cues that	confirm	our	ideas.
	support		beliefs.
	go hand in hand with		preconceptions.

OR

■ Pay attention to information that confirms our bias.
--

OR

■ Ignore or reject information that is contrary to beliefs or that	interferes with	new information.
	prejudices	
	blocks	
	distorts	

**Not acceptable:**

- Something that confirms our bias.
- Identifying experimenter bias.

**Application (1 point):**

Participants pay attention to the aggression in the “public park” photo, but do not pay attention to the fact that the woman is the aggressor because that does not fit their preconceptions.

**Framing — Points 9 and 10****Definition (1 point):**

The way a question is posed (how it is “framed”) can alter judgment, decision-making, and recall.

■ The way an issue or question is	posed	can	alter	the participant's response.
	framed		change	
	asked		influence	
	presented		affect	

**Not acceptable:**

- Procedural manipulation (e.g., changing sequence of photographs, changing the location of the experiment).
- Body language or other nonverbal communication.

**Application (1 point):**

The way the experimenter asks the question or describes the procedure will influence the participant's description of the photo. The open-ended question may allow preconceived notions to have maximum effect.

## Sample Student Responses for Question 2

### Student Response 1 — Excellent

2 The participants' perceptions of this photograph are influenced by a lot of factors.

First, there is the individual's preexisting schemas. A schema is a set of ideas held by someone. Many people's schemas include stereotypes of gender roles, in that men are more aggressive. Someone with this type of schema would see the man as the aggressor in this situation, because he ~~is more aggressive~~ ~~and~~ applies his stereotype to this particular situation.

Retrospective interference is the effect of new information going back and interfering with memories of older information. Seeing all of the photographs after the "public park" photo might cause something in a more current photograph to affect perception of the old one.

For example, if a man in a recent photograph was clearly being aggressive, the subject would remember this and apply it to the interpretation of the park picture.

The representativeness heuristic is interpreting information <sup>and drawing conclusions</sup> based on how well something matches a particular prototype. The argument between the man and the woman in the picture may simply be remembered as a standard "argument" prototype. In the standard model the man has started the fight, and this model is now representative of all arguments. Therefore the subject would recall the man as being the aggressor in the argument.

Confirmation bias is seeking only information that confirms one's preconceptions. If one naturally assumes that the man started the fight, one would only look for evidence supporting that belief. The subject would be looking for cues such as the woman being upset or the man looking mean, not for indications like the fact that the woman is shouting or the man is sitting down.

Framing is the way a question is worded. If the researchers of asked the participants leading questions, it could definitely affect their perceptions. For example, the researcher could ask: "Why was the man arguing with the woman?" or "Was the man yelling at the woman?" or "Did you feel sorry for the woman?" Questions such as these would bias the subject beforehand and cause him or her to think less objectively about what was seen in the picture. Assuming beforehand that the man started the argument would cause the subject to believe that, and report it that way in subsequent questions.

#### Summary

This response earned a score of 10. All terms are defined properly. The student provides an example of how interpretation of the picture might vary due to a schema involving aggression and gender roles. The student also discusses proactive interference could occur from seeing more photographs after the public park photo. Points are also awarded for discussing a standard argument prototype involving males starting fights, the assumption for the assumption that the man started the fight, and leading questions.

Schemas are concepts, or cognitive groupings ~~which are~~ which are formed as we interpret and organize information. People who have observed more instances of men being aggressors and women being victims, either through observing family, friends, society, and/or the media, have developed schemas of aggressive men and victimized women through their observations and interpretations. When asked a question about the nature of the argument in the picture, people retrieve information from their pre-existing schemas and respond by saying the man was the aggressor, even though that is false.

Retroactive interference is when the learning and existing memory of old information inhibits the learning of new information. If people have learned in the past that men are more aggressive while women are mild and meek, then it would be harder to interpret this new information of a woman being the aggressor.

Since pre-existing memory interferes with the learning of what occurred in this novel situation, the witnesses cannot remember the woman as being the aggressor and turn to their old memory of the man being aggressive.

Representativeness heuristic is the readiness with which we match new information with a representative prototype. ~~Our past~~ The prototype of aggressive people in the minds of the



witnesses is an aggressive man, so they respond to the photograph by saying that the man is the aggressor because they can more readily match him with their aggressive-man prototype.

Confirmation bias is the tendency to only notice information that confirms our own beliefs. ~~When~~ If the people had a belief that men are aggressive, they respond to the picture by saying the argument was caused by the man because that confirms their existing beliefs.

Framing is the way a question is presented to a person, which may influence his/her answer. The way the ques was asked may have influenced the person to say the man was the aggressor.

### Commentary

This essay earned a score of 8. All definitions and applications are correct except those provided for retroactive interference. Application points are earned by the discussions of a relationship between experience with aggression and schema development, the use of a prototype, confirmation of existing beliefs, and the influence of the way a question is asked.

### Student Response 3 — Fair

A schema is a structure for learning and assimilating information. ~~Do~~ When viewing traditional roles, males are generally perceived as aggressors. If the participants have a schema that suggests males as more violent or aggressive than females, it seems more likely to them that the man would be hostile toward the traditionally more calm and complacent woman.

Retroactive interference is learning one concept and then learning a second concept that interferes or overshadows the memory of the first. If this took place with the participants, ~~they~~ the several photographs shown after the public park picture may have interfered with the encoding of the memory of the picture from the public park. Therefore, the participants used the "most likely" reconstructive memory, according to their schema.

A heuristic is a "rule of thumb" for learning and remembering information. ~~A~~ A representativeness heuristic is a rule of thumb for certain ~~to~~ situations and objects. If the participants believe that men incite arguments as a general rule, they will be inclined to remember that the man in the photo was the aggressor.

### Commentary

This student's essay earned a score of 5. Schema, retroactive interference, and representativeness heuristic are defined correctly. Application points are awarded for the discussion of how a schema makes one interpretation more likely than another and how a belief will influence the memory of the situation depicted in the photograph.

#### Student Response 4 — Poor

The photographs that were shown to the people after the original photograph all interfered with the memory of the first photograph. The participants probably did not think to rehearse the memory of the first photograph, and thus could only remember a ~~partial~~ vague idea of the photograph. This theory of forgetting is called retroactive interference, because the viewing of new pictures interfered with the memory of the first picture.

Furthermore, people assumed that the man was the aggressor even though the opposite was true. This is because of gender roles. People had a vague memory of the argument in the picture and picked the man as the aggressor because that is the most obvious choice. They also may have misinterpreted the picture from the beginning due to gender roles. So this may have been a problem with encoding rather than a problem in retrieval.

#### Commentary

Response 4 earned a score of 2. Both points are awarded for retroactive interference. The definition at the end of the first paragraph is correct. The application point can be awarded either for the example embedded within the definition or for the earlier description of how the photographs shown after the original photograph interfered with the memory of it.