3

Social Cognition: How We Think about the Social World

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LEARNING OBJECTIVES

3.1 What is automatic thinking, and how are schemas an example of that kind of thought? What are the advantages and disadvantages of schemas?

3.2 What are other types of automatic thinking and how do they operate?

3.3 How does culture influence social thinking?

3.4 What are some of the drawbacks of controlled thinking, and how can we improve its effectiveness?

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CHAPTER OUTLINE

I. Chapter Prologue

- Kyle Jennings' *Jeopardy!* match vs. Watson is discussed. The match, in which a computer beat a human *Jeopardy!* champion, is discussed as an introduction into the ways in which humans think that are both machinelike and rational and that are uniquely human.
- Introduces social cognition as the study of the ways people think about themselves and the social world, including how they select, interpret, remember, and use social information.
- Two types of social cognition: automatic thinking and controlled thinking.

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II. On Automatic Pilot: Low Effort Thinking

- Thinking that is Nonconscious, Unintentional, Involuntary, and Effortless

A. People as Everyday Theorists: Automatic Thinking with Schemas

- Automatic thinking involves quick judgments based on past experiences.
- Schemas are mental structures that organize our knowledge about the social world and influence what we notice, think about, and remember.

1. The Function of Schemas: Why Do We Have Them?

- Schemas are important for organizing and making sense of the world. They help us create continuity to relate new experiences to old ones. Korsakof patients show the struggle of not being able to relate new experiences to old ones.
- Schemas are especially helpful when information is ambiguous. Kelley (1950) warm/cold guest lecturer study shows influence of schema in ambiguous situation.

2. Which Schemas Do We Use Applied? Accessibility and Priming

- Accessibility, or the extent to which schemas and concepts are at the forefront of your mind, can affect your impression of an ambiguous stimulus (Figure 3.1 provides an illustration of the role of accessibility).
- Schema accessibility may be chronic or temporary.
- Temporary accessibility increases when it is related to a current goal or because of recent experiences (also called priming).
- In a study by Higgins, Rholes, & Jones (1977), research participants thought they were participating in two separate studies. The first task involved identifying different colors while memorizing a list of words. The second task required them to read a paragraph about Donald and give their impressions of him. Participants' impressions of Donald were affected by whether they had memorized positive or negative words in the first task of the study (see Figure 3.2).

- Donald study revealed that schemas must be both accessible and applicable in order to act as primes.
- Priming is an example of automatic thinking because it is quick, unintentional, and unconscious.

3. Making Our Schemas Come True: The Self-Fulfilling Prophecy

- The self-fulfilling prophecy is the case whereby people have an expectation about what another person is like, which influences how they act toward that person, which causes that person to behave consistently with people's original expectations, making the expectations come true (see Figure 3.3).
- The Rosenthal & Jacobsen (1968) bloomer study found that students labeled bloomers showed significantly greater gains in their IQ scores than did other students (see Figure 3.4).
- This occurred because teachers were warmer and paid more attention to the students who they expected to improve than the students who did they did not expect to improve.
- Self-fulfilling prophecies occur in real life when teachers have low expectations of some students based on the students' backgrounds.
- Low expectations of students by their first grade teachers were associated with slightly lower standardized test scores 10 years later, especially for children from families of lower socioeconomic status (Sorhagen, 2013).

III. Types of Automatic Thinking

A. Automatic Goal Pursuit

- We are sometimes influenced by goals without being aware of it.
- Subtly priming people's goals can influence their behavior.
- People primed with words related to God or fairness to others shared money with a fellow participant more generously than people primed with neutral words (Shariff & Norenzayan, 2007).

B. Automatic Decision Making

- We can make decisions by carefully and consciously weighing our options or we can distract ourselves and let our decisions be informed by automatic thinking.
- Sometimes we make better choices based on automatic thinking than based on controlled thinking.
- Controlled thinking works best when decisions involve applying rules. Automatic thinking works best when decisions involve integrating complex information.
- Some decisions, such as which apartment to choose out of many possible apartments, benefit from controlled thinking followed by distraction (Nordgren, Bos, & Dikksterhuis, 2011).

C. Automatic Thinking and Metaphors about the Body and Mind

- Sensory experiences such as smells, the weight of a survey, and holding a cup of hot coffee can affect our thoughts and behaviors outside of our awareness.
- This occurs because of commonly held metaphors (e.g., cleanliness is associated with goodness, warmth is associated with being sociable and friendly).

D. Mental Strategies and Shortcuts: Judgmental Heuristics

- We use mental strategies and shortcuts that make decisions easier to allow us to get on with our lives and not turn every decision into a major hurdle.
- Judgmental heuristics are mental shortcuts people use to make judgments quickly and efficiently.

1. How Easily Does It Come to Mind? The Availability Heuristic

- The availability heuristic is a mental rule of thumb whereby people base a judgment on the ease with which they can bring something to mind.
- Sometimes the availability heuristic is useful, such as when judging someone's personality based on how easily you can remember their relevant behaviors. However, it may sometimes impair judgment, such as when doctors fail to diagnose diseases they have not recently or often heard about or misdiagnose diseases that are on their mind but relatively rare.
- Schwarz et al. (1991) demonstrated that people also use the availability heuristic when judging themselves (see Figure 3.5).

2. How Similar Is A to B? The Representativeness Heuristic

- The representativeness heuristic is a mental shortcut whereby people classify something according to how similar it is to a typical case.
- Kahneman and Tversky (1973) found that people fail to make sufficient use of base rate information (information about the frequency of members of different categories in the population) and rely too heavily on how representative the person is of that specific category.

3. Personality Tests and the Representativeness Heuristic

- The Barnum effect, or the tendency to believe false feedback on personality tests, occurs because the feedback is worded broadly. This broad wording makes it easy for us to recall examples of our own behavior that are consistent with the feedback, making us erroneously believe it to be accurate.

E. Cultural Differences in Social Cognition

- How does culture influence social thinking?

1. Cultural Determinants of Schemas

- An important determinant of our schemas is the culture in which we grow up.
- Schemas that our culture teaches us strongly influence what we notice and remember about the world. For example, Bantu herdsmen in Swaziland have superior memory for cattle, as they are a central part of the Bantu economy and culture.

2. Holistic Versus Analytic Thinking

- Our minds are like toolboxes and we all have access to the same tools but culture determines which tools we are likely to use the most. For example, someone living in a house filled with screws will use a screwdriver a lot and someone in a house filled with nails will use a hammer even if both people have both kinds of tools.
- People who grow up in Western cultures tend to have an analytic thinking style in which individuals focus on the properties of objects, paying less attention to their surrounding contexts.

- People who grow up in East Asian cultures tend to have a holistic thinking style in which individuals focus on the overall context and how objects relate to each other.
- These cultural differences affect what participants focus on in photographs and the mistakes they make.
- This may be due, at least in part, to East Asians growing up surrounded by more detailed contexts that favor a holistic mode of thinking (Norenzayan, Choi, & Peng, 2007).

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IV. Controlled Social Cognition: High Effort Thinking

- What are some of the drawbacks of controlled thinking and how can we improve its effectiveness?
- Controlled thinking is thinking that is conscious, intentional, voluntary, and effortful.

A. Controlled Thinking and Free Will

- We think that we have free will because we have conscious thoughts and then act on them. However, Daniel Wegner (2002, 2004; Preston & Wegner, 2007) claims that both the conscious thought and the resultant action may both be the result of the same underlying cause that we are not aware of and that is outside of our control.
- People who believe in free will behave more morally than people who believe that our thoughts and actions are outside of our control (Vohs & Schooler, 2008).

B. Mentally Undoing the Past: Counterfactual Reasoning

- Counterfactual thinking is mentally changing some aspect of the past as a way of imagining what might have been.
- The easier it is to mentally undo an outcome, the stronger the emotional reaction to it. Davis et al. (1995) found that when people imagined ways in which the loss of a child or spouse could have been averted, they reported greater distress. Similarly, silver medalists may be less satisfied than bronze medalists because it is easier for them to imagine winning the event (Medvec, Madey, & Gilovich, 1995).
- Counterfactual thinking can be bad if it results in rumination, which can contribute to depression. Conversely, counterfactual thinking can be useful if it focuses people's attention on ways that they can cope better in the future.

C. Improving Human Thinking

- One strategy to improve thinking is to encourage people to be more humble in their reasoning abilities. The overconfidence barrier describes the fact that people usually have too much confidence in the accuracy of their judgments.
- Teaching basic statistical and methodological principles about how to reason correctly can also be successful.

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V. Watson Revisited

- People are very sophisticated social thinkers with amazing cognitive abilities that far surpass computers in terms of navigating real social situations, but there is plenty of room for improvement.
- The metaphor of "flawed scientists" may be the best description of human thinking.

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KEY TERMS

- **Social Cognition:** (pg. 52) How people think about themselves and the social world, or more specifically, how people select, interpret, remember, and use social information to make judgments and decisions
- **Automatic Thinking:** (pg. 54) Thinking that is nonconscious, unintentional, involuntary, and effortless
- **Schemas:** (pg. 54) Mental structures people use to organize their knowledge about the social world around themes or subjects and that influence the information people notice, think about, and remember
- **Accessibility:** (pg. 56) The extent to which schemas and concepts are at the forefront of people's minds and are therefore likely to be used when we are making judgments about the social world
- **Priming:** (pg. 57) The process by which recent experiences increase the accessibility of a schema, trait, or concept
- **Self-Fulfilling Prophecy:** (pg. 58) The case whereby people have an expectation about what another person is like, which influences how they act toward that person, which causes that person to behave consistently with people's original expectations, making the expectations come true
- **Judgmental Heuristics:** (pg. 65) Mental shortcuts people use to make judgments quickly and efficiently
- **Availability Heuristic:** (pg. 66) A mental rule of thumb whereby people base a judgment on the ease with which they can bring something to mind
- **Representativeness Heuristic:** (pg. 68) A mental shortcut whereby people classify something according to how similar it is to a typical case
- **Base Rate Information:** (pg. 68) Information about the frequency of members of different categories in the population
- **Analytic Thinking Style:** (pg. 71) A type of thinking in which people focus on the properties of objects without considering their surrounding context; this type of thinking is common in Western cultures
- **Holistic Thinking Style:** (pg. 71) A type of thinking in which people focus on the overall context, particularly the ways in which objects relate to each other; this type of thinking is common in East Asian cultures (e.g., China, Japan, and Korea)
- **Controlled Thinking:** (pg. 73) Thinking that is conscious, intentional, voluntary, and effortful
- **Counterfactual Thinking:** (pg. 76) Mentally changing some aspect of the past as a way of imagining what might have been
- **Overconfidence Barrier:** (pg. 77) The fact that people usually have too much confidence in the accuracy of their judgments

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CRITICAL THINKING AND DISCUSSION QUESTIONS

These questions can be used as a starting point for a lecture or during the midpoint of a lecture to encourage active participation and gain the students' attention. They could be discussed in class as a whole, or in pairs or small groups to encourage cooperative learning.

- How do schemas and expectations influence our interpretation of events? Can you use these concepts to explain divided opinions over whether George Zimmerman's killing of Trayvon Martin was racially motivated murder or justifiable self-defense?

- Generate examples of the self-fulfilling prophecy that you have seen operating in the real world, perhaps even examples of a self-fulfilling prophecy that you created yourself. (For example, a waitress expects a particular customer to be a big tipper and then gives him special treatment; or she expects another customer to be a cheapskate and gives him accordingly short service.) What are the implications of the self-fulfilling prophecy for students' education, careers, and relationships?

- Do you think a self-fulfilling prophecy can be maintained even when the expectation is false? A fictional example of this is the movie *Forrest Gump*, in which the main character, who is somewhat mentally deficient, has a number of experiences in which he achieves greatness due to others' positive expectations for him. (*Being There* is an earlier film with a similar theme.)

- How can you try to break the cycle of the self-fulfilling prophecy if the expectation about you is negative? Have students role-play scenes where one participant is presumed by the other to have a negative characteristic, for example, being scheming and power-hungry, being cold, being aggressive, or being unintelligent. The person who is presumed to have the negative characteristic should try as hard as possible to demonstrate to the other person that the expectation is false. In which cases is he or she successful? Are there any things about the different characteristics that make them harder or easier to disprove, and if so, what? What things about the person holding the expectation might make it easier or harder to dispel their false belief?

- For each of the heuristics (availability, representativeness, counterfactual thinking) discussed in the chapter, provide a personal example that illustrates how you have used the heuristic to make a decision or solve a problem. In which of these cases has relying on the heuristic been helpful? In which of these cases might you have been misled by relying on the heuristic?

- How might biases in reasoning explain why many people believe in ESP, astrology, or in ineffective alternative medicine practices? [Gilovich (1991) has good examples for background reading here.]

- Why do you think people are so likely to engage in counterfactual thinking (about how things might have been better when something bad happens), given that this makes them feel worse?

- Discuss the “flawed scientist” models of humans as reasoners. What are the claims that this model makes? What is the kind of evidence that this model uses to support its claim? Are there different conditions under which this model might apply, and if so, what are these?

- Page 55 of the text references Kelley’s warm/cold guest lecturer study. Ask how modern professor review sites, such as http://www.ratemyprofessors.com, might influence student perceptions of professors in similar ways.

- Similarly, how might profiles on online dating websites affect how you interpret an individual’s personality once you meet them face to face?

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AUTOGRADED WRITING ACTIVITIES IN MYPSYCHLAB AND REVEL

Schemas and Automatic Processes

MyLabs Group	MyPsychLab, MyDevelopmentLab			
Prompt Code Provide a unique identifier	ARONSONch03_01			
Prompt Type Check appropriate type	Expository	Descriptive	Narrative	Persuasive x
Assessment Goals Briefly summarize and describe the assessment goals for this prompt (e.g., Student Understanding, Critical Thinking, Integrating Concepts, Writing Quality, Other)	Student Understanding, Critical Thinking, Writing Quality			
Instructor Requirements	n/a			
Prompt	You and your friend are debating the greatness of the human mind. One of you claims that relying on schemas and automatic processes is ultimately detrimental, but the other contends that such processes have their benefits. Pick one of these positions and defend it.			

Length of Response (in words)	Minimum	Maximum	Expected (Avg.)	Comments

Planned Scoring						
	Holistic	Trait 1	Trait 2	Trait 3	Trait 4	Trait 5
Trait Name		Ideas	Organization	Conventions	Voice	Focus & Coherence

Score Points	Weighted Average	40%	10%	10%	20%	20%

Trait 1 Rubric: Ideas Specific Trait	
Score Point	**Description of Student Response**
4	• Response features well-developed thesis with robust supporting details of why they do or do not think schemas and automatic processes are detrimental. • Strong consideration and argumentation of why they do or do not think schemas and automatic processes are detrimental. • Excellent, perceptive analysis of why they do or do not think schemas and automatic processes are detrimental.
3	• Response features thesis with some supporting details describing why they do or do not think schemas and automatic processes are detrimental. • Sufficient, thoughtful consideration and argumentation of why they do or do not think schemas and automatic processes are detrimental. • Fairly comprehensive analysis of why they do or do not think schemas and automatic processes are detrimental.
2	• Response features broad, loosely defined interaction or event with limited supporting details describing why they do or do not think schemas and automatic processes are detrimental. • Minimal consideration and argumentation of why they do or do not think schemas and automatic processes are detrimental. • Weak concluding analysis of why they do or do not think schemas and automatic processes are detrimental.
1	• Response features poorly defined interaction or event with no supporting details describing why they do or do not think schemas and automatic processes are detrimental. • No consideration and argumentation of why they do or do not think schemas and automatic processes are detrimental. • Lack of concluding analysis of why they do or do not think schemas and automatic processes are detrimental.

Trait 2 Rubric: Organization	
Score Point	**Description of Student Response**
4	• Organization is effective and demonstrates a logical flow of ideas within the response. • Transitions effectively connect concepts. • May contain an effective introduction and/or conclusion.
3	• Organization is clear and appropriate. • Transitions appropriately connect concepts. • May contain an appropriate introduction and/or conclusion.
2	• Organization is skeletal or otherwise limited, which may impede the reader's ability to follow the response.

	• Some simple or basic transitions are used but may be inappropriate or ineffective. • May contain a minimal introduction and/or conclusion.
1	• Response lacks a clear plan. • Transitions are lacking or do not link ideas. • Both the introduction and conclusion are minimal and/or absent.

Trait 3 Rubric: Conventions	
Score Point	**Description of Student Response**
4	• Demonstrates sophistication and skill with a wide variety of conventions. • May contain minor editing errors in grammar, spelling, punctuation, or sentence construction. • Errors do not interfere with the reader's understanding.
3	• Demonstrates adequate control over a variety of conventions. • Response may contain some errors in grammar, spelling, punctuation, and/or sentence construction. • Most errors do not interfere with the reader's understanding.
2	• Although basic conventions may be mostly controlled, overall the response demonstrates inconsistent control over conventions. • May not use a variety of conventions, OR may only use basic conventions. • May contain a substantial number of errors in grammar, spelling, punctuation, and/or sentence construction. • Some errors interfere with the reader's understanding.
1	• Demonstrates a lack of control over basic conventions. • May contain a large number of errors in grammar, spelling, punctuation, and/or sentence structure OR the errors are severe. • Errors interfere with the reader's understanding OR the response is minimal and has a density of errors.

Trait 4 Rubric: Voice	
Score Point	**Description of Student Response**
4	• Voice is appropriately authoritative, indicating a high level of comfort with the material. • Words are precise and well-chosen. • Sentences are varied and have a natural fluidity.
3	• Voice is appropriate and clear. • Words are appropriate to the subject matter. • Sentences are appropriate and varied, making the response easy to read.
2	• Voice may be artificial or uneven. • Word choice, overall, may be appropriate for the subject matter, but original writing may indicate a limited vocabulary range. • Sentences may be choppy, rambling, or repetitive in a way that limits fluency.
1	• Voice may be lacking or inappropriate.

	• Original writing may be simplistic, vague, inappropriate, or incorrect. • Sentences may be limited in variety or may comprise awkward fragments or run-ons that produce a halting voice.

Trait 5 Rubric: Focus & Coherence Specific Trait	
Score Point	**Description of Student Response**
4	• Response persuasively justifies its conclusions through logic and examples. • References to people, events, places, relationships, etc. effectively demonstrate a strong command of the relevant concepts in communication.
3	• Response justifies its conclusions through some combination of logic and examples. • References to people, events, places, relationships, etc. effectively demonstrate a good command of the relevant concepts in psychology.
2	• Response provides some justification for its conclusions. Some combination of logic and examples are present but are inconsistent or somewhat ineffective. • References to people, events, places, relationships, etc. demonstrate only a partial understanding of the relevant concepts in psychology.
1	• Response provides no significant justification for its conclusions. Logic and examples are absent, inconsistent, and/or ineffective. • References to people, events, places, relationships, etc. demonstrate no more than a weak grasp of the relevant concepts in psychology.

Counteracting the Self-Fulfilling Prophecy

MyLabs Group	MyPsychLab, MyDevelopmentLab			
Prompt Code Provide a unique identifier	ARONSONch03_02			
Prompt Type Check appropriate type	Expository	Descriptive	Narrative x	Persuasive
Assessment Goals Briefly summarize and describe the assessment goals for this prompt (e.g.,	Student Understanding, Critical Thinking, Writing Quality			

Student Understanding, Critical Thinking, Integrating Concepts, Writing Quality, Other)	
Instructor Requirements	n/a
Prompt	Try this exercise to counteract the self-fulfilling prophecy: Find someone who is a member of a group you dislike and strike up a conversation with the person. For example, sit next to this person in one of your classes, or strike up a conversation at a party or gathering. Try to imagine that this individual is the friendliest, kindest, sweetest person you have ever met. Be as warm and charming as you can be. Don't go overboard; if, after never speaking to this person, you suddenly act like Mr. or Ms. Congeniality, you might arouse suspicion. The trick is to act as if you expect the person to be extremely pleasant and friendly. Observe this person's reactions. Describe what happened. Were you surprised by how friendly he or she was in responding to you? Or not? To what extent was their reaction to you influenced by the way you treated them? Discuss in terms of research on the self-fulfilling prophecy.

Length of Response (in words)	Minimum	Maximum	Expected (Avg.)	Comments

Planned Scoring

		Trait 1	Trait 2	Trait 3	Trait 4	Trait 5
Trait Name	Holistic	Ideas	Organization	Conventions	Voice	Focus & Coherence
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Score Point	**Description of Student Response**
4	• Response features well-developed thesis with robust supporting details of how they counteracted the self-fulfilling prophecy. • Strong consideration and argumentation of how they counteracted the self-fulfilling prophecy. • Excellent, perceptive analysis of how they counteracted the self-fulfilling prophecy.
3	• Response features thesis with some supporting details describing how they counteracted the self-fulfilling prophecy. • Sufficient, thoughtful consideration and argumentation of how they counteracted the self-fulfilling prophecy.

	• Fairly comprehensive analysis of how they counteracted the self-fulfilling prophecy.
2	• Response features broad, loosely defined interaction or event with limited supporting details describing how they counteracted the self-fulfilling prophecy. • Minimal consideration and argumentation of how they counteracted the self-fulfilling prophecy. • Weak concluding analysis of how they counteracted the self-fulfilling prophecy.
1	• Response features poorly defined interaction or event with no supporting details describing how they counteracted the self-fulfilling prophecy. • No consideration and argumentation of how they counteracted the self-fulfilling prophecy. • Lack of concluding analysis of how they counteracted the self-fulfilling prophecy.

Trait 2 Rubric: Organization	
Score Point	**Description of Student Response**
4	• Organization is effective and demonstrates a logical flow of ideas within the response. • Transitions effectively connect concepts. • May contain an effective introduction and/or conclusion.
3	• Organization is clear and appropriate. • Transitions appropriately connect concepts. • May contain an appropriate introduction and/or conclusion.
2	• Organization is skeletal or otherwise limited, which may impede the reader's ability to follow the response. • Some simple or basic transitions are used but may be inappropriate or ineffective. • May contain a minimal introduction and/or conclusion.
1	• Response lacks a clear plan. • Transitions are lacking or do not link ideas. • Both the introduction and conclusion are minimal and/or absent.

Trait 3 Rubric: Conventions	
Score Point	**Description of Student Response**
4	• Demonstrates sophistication and skill with a wide variety of conventions. • May contain minor editing errors in grammar, spelling, punctuation, or sentence construction. • Errors do not interfere with the reader's understanding.
3	• Demonstrates adequate control over a variety of conventions. • Response may contain some errors in grammar, spelling, punctuation, and/or sentence construction. • Most errors do not interfere with the reader's understanding.

2	• Although basic conventions may be mostly controlled, overall the response demonstrates inconsistent control over conventions. • May not use a variety of conventions, OR may only use basic conventions. • May contain a substantial number of errors in grammar, spelling, punctuation, and/or sentence construction. • Some errors interfere with the reader's understanding.
1	• Demonstrates a lack of control over basic conventions. • May contain a large number of errors in grammar, spelling, punctuation, and/or sentence structure OR the errors are severe. • Errors interfere with the reader's understanding OR the response is minimal and has a density of errors.

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Score Point	**Description of Student Response**
4	• Voice is appropriately authoritative, indicating a high level of comfort with the material. • Words are precise and well-chosen. • Sentences are varied and have a natural fluidity.
3	• Voice is appropriate and clear. • Words are appropriate to the subject matter. • Sentences are appropriate and varied, making the response easy to read.
2	• Voice may be artificial or uneven. • Word choice, overall, may be appropriate for the subject matter, but original writing may indicate a limited vocabulary range. • Sentences may be choppy, rambling, or repetitive in a way that limits fluency.
1	• Voice may be lacking or inappropriate. • Original writing may be simplistic, vague, inappropriate, or incorrect. • Sentences may be limited in variety or may comprise awkward fragments or run-ons that produce a halting voice.

Trait 5 Rubric: Focus & Coherence Specific Trait	
Score Point	**Description of Student Response**
4	• Response persuasively justifies its conclusions through logic and examples. • References to people, events, places, relationships, etc. effectively demonstrate a strong command of the relevant concepts in communication.
3	• Response justifies its conclusions through some combination of logic and examples. • References to people, events, places, relationships, etc. effectively demonstrate a good command of the relevant concepts in psychology.
2	• Response provides some justification for its conclusions. Some combination of logic and examples are present but are inconsistent or somewhat ineffective.

	• References to people, events, places, relationships, etc. demonstrate only a partial understanding of the relevant concepts in psychology.
1	• Response provides no significant justification for its conclusions. Logic and examples are absent, inconsistent, and/or ineffective. References to people, events, places, relationships, etc. demonstrate no more than a weak grasp of the relevant concepts in psychology.

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IN-CLASS EXERCISES AND QUICK ASSESSMENTS

In addition to the activities below, see Chapter 5 for demonstrations of priming effects.

Exercise 3–1
Schemas and Memory
Time to Complete: 10 minutes

In Class: Distribute Handout 3.1a to half of the room and 3.1b to the other half of the room. Do not make it apparent to students that they are receiving different handouts. Ask students to read the story. For maximum effectiveness, you might have the students wait at least 10 minutes (while you lecture) before they answer the questions on Handout 3.1c. Then compare the answers from the two halves of the class. You may want to record their answers to questions 5 and 6 in different colored markers or chalk on the board (depending on what half of the room they are seated and thus which version they received).

Discussion: Although each story was the same except for the very first paragraph, students will have come up with different interpretations of statements in the story (for example, why Pat's heart is pounding), and they may have noticed and remembered different facets of the house and its contents, depending on whether they believed that Pat and Jamie were house-hunters or burglars. Tie this demonstration into a lecture on schematic processing and point out how schemas can influence information processing along every step of the way—from attention to encoding to memory. [This exercise is modeled on an experiment by Zadney and Gerard (1979) ("Attributional intentions and informational selectivity," *Journal of Experimental Social Psychology, 10,* 34–52). An analogous experiment with another story can be found in Owens, Bower, & Black (1979), "The 'soap-opera effect' in story recall," *Memory and Cognition, 7,* 185–191.]

Name: _____ **Date:** _____
Social Psychology **Course Number and Section:** _____

HANDOUT 3.1a: SCHEMAS AND MEMORY

Directions: Read the following passage and commit as much to memory as you can.

Pat and Jamie were running low on cash. They'd spent everything they'd gotten from the heist they had pulled on a convenience store two months ago. To try to reduce their chances of being caught, they decided to pull the next robbery in a suburb eight miles out of town. They decided to break into a house this time, rather than a store. After a week of looking, they spotted a house where the owners seemed clearly to be on vacation—papers were piling up outside the door, and they had never seen a light on in the house.

The time came for them to go to the house. No one was in sight, so they decided to examine the house carefully from the outside. They looked carefully at the front of the house, and noticed that the paint on the porch was beginning to peel. They walked around the side, and looked through the windows into the spacious living room. The room was luxuriously furnished. The owners had arranged the furniture to orient towards a huge flat screen television. The living room was split-level, and going down three stairs, there was a vast stone fireplace. In front of this was a sofa and a coffee table, on top of which sat a laptop computer. A sliding glass door in the back wall opened to an outside patio.

They then went around the other side of the house. The first room they saw was the dining room, which was big enough to house a table for eight. A cabinet on one side held crystal, china, and silverware. Despite this evidence of luxury, the wallpaper appeared yellowed and faded.

The backyard was fenced in with a gate at one end. Looking around carefully again, they saw that there was still no one in sight. They tried the latch of the gate, and it opened easily. Going into the backyard, the first thing they spotted was the large deck running the full length of the house. Behind one of the bedrooms, the deck featured a spa. To ensure privacy, the entire backyard was surrounded by a 6-foot-tall fence. This was something that Pat and Jamie thought was just ideal.

The next room they peered into was the master bedroom—a large room with a walk-in closet, airily furnished. A large flat screen TV sat in front of the bed. A large mirror in front of the dressing table reflected a jewelry collection that showed that the lady of the house had expensive tastes.

The next room beyond this was another bedroom used as office space, as the desk and computer suggested. Apparently someone in the household was into photography, as a nice camera and a camcorder were both mounted on tripods standing in the room. This room, like the others in back, opened onto the deck.

Just as they completed their tour of the outside of the house, Pat and Jamie heard a noise around the front of the house. Heart pounding, Pat whispered to Jamie, "All right, let's go!"

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HANDOUT 3.1b: SCHEMAS AND MEMORY

Directions: Read the following passage and commit as much to memory as you can.

Pat and Jamie were looking for a house to buy. They were going to be married in June, and had asked their parents to contribute to their down payment as a wedding present. After several months of looking, one weekend while driving around, they spotted a house in their price range in a suburb eight miles out of town. They called the real estate agent listed on the posting, and arranged to see the house the following day.

The time came for them to go to the house. No one was in sight, so they decided to examine the house carefully from the outside. They looked carefully at the front of the house, and noticed that the paint on the porch was beginning to peel. They walked around the side, and looked through the windows into the spacious living room. The room was luxuriously furnished. The owners had arranged the furniture to orient towards a huge flat screen television. The living room was split-level, and going down three stairs, there was a vast stone fireplace. In front of this was a sofa and a coffee table, on top of which sat a laptop computer. A sliding glass door in the back wall opened to an outside patio.

They then went around the other side of the house. The first room they saw was the dining room, which was big enough to house a table for eight. A cabinet on one side held crystal, china, and silverware. Despite this evidence of luxury, the wallpaper appeared yellowed and faded.

The backyard was fenced in with a gate at one end. Looking around carefully again, they saw that there was still no one in sight. They tried the latch of the gate, and it opened easily. Going into the backyard, the first thing they spotted was the large deck running the full length of the house. Behind one of the bedrooms, the deck featured a spa. To ensure privacy, the entire backyard was surrounded by a 6-foot-tall fence. This was something that Pat and Jamie thought was just ideal.

The next room they peered into was the master bedroom—a large room with a walk-in closet, airily furnished. A large flat screen TV sat in front of the bed. A large mirror in front of the dressing table reflected a jewelry collection that showed that the lady of the house had expensive tastes.

The next room beyond this was another bedroom used as office space, as the desk and computer suggested. Apparently someone in the household was into photography, as a nice camera and a camcorder were both mounted on tripods standing in the room. This room, like the others in back, opened onto the deck.

Just as they completed their tour of the outside of the house, Pat and Jamie heard a noise around of the front of the house. Heart pounding, Pat whispered to Jamie, “All right, let’s go!”

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HANDOUT 3.1c: SCHEMAS AND MEMORY

Directions: Answer the following questions based on your memory of the story.

1. Why do you think Pat's heart was pounding at the end of the story?

_____
_____

2. Where do you think Pat and Jamie went after they heard the noise?

_____
_____

3. How many rooms did they see in the house?

_____
_____

4. What do you think Pat and Jamie especially noticed while looking at the house?

_____
_____

5. Write down everything you can remember about *the house itself.*

_____
_____
_____
_____

6. Write down everything you can remember about *what was in the house.*

_____
_____
_____
_____

Exercise 3–2
Schemas and the Confirmation Bias

Schemas lead us to preferentially seek confirming information, whereas we often disregard, or at least do not tend to seek, disconfirming information. To demonstrate this, present students with a series of numbers that fit a rule that you have in mind. Their goal is to generate other number sequences that conform to the same rule, with the ultimate goal of guessing the rule. The rule that you will have in mind is "increasing whole numbers." The initial sequence to present them with is 2, 4, 6. How long does it take students to get the rule? Typically, students will generate complex rules but will take a long time to try a decreasing, rather than increasing, series of numbers, thus failing to seek information that could potentially disconfirm whatever schema they have in mind. [After Wason (1960), "On the failure to eliminate hypotheses in a conceptual task," *Quarterly Journal of Experimental Psychology, 12,* 129–140.]

Exercise 3–3
Schemas and Memory II

In this demonstration, you'll need to solicit six or so volunteers from your class. Ask five to step outside (out of earshot) and then read a passage to the remaining volunteer, whose job is to remember it and then repeat it to the next volunteer after you bring them, one at a time, back to the classroom. Instruct the rest of the class to record how the story changes in the retelling by completing handout 3.3a. For the first three students, read "John's story" and for the final three students read "Sylvia's story," which is identical to John's story except for the substitution of "Sylvia" for "John."

John's story
John received a letter in the mail notifying him that he had lost the Texas State Achievement in Math Competition. He had wanted to win and was unhappy with the results. He had been the best student in his math class last year. Losing really hurt his self-esteem. He found out that Terry Browning had done better than him. He hated Terry Browning for that. To make himself feel better, he cried, baked cookies, beat pillows, kicked something, took a long bath, and talked to his best friend. After that, he went to the mall where he shopped and played video games in the arcade until he had beaten all the records. He then went running and came home to watch *Twilight.*

QUICK ASSESSMENT: To test your students' understanding of the effect of schemas upon memory, ask them to complete Handout 3.3b.

Source: This exercise is based on an exercise published by Ganske, K. H., & Hebl, M. R. (2001). "Once upon a time there was a math contest: Gender stereotyping and memory," *Teaching of Psychology, 28,* 266268.

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HANDOUT 3.3a: SCHEMAS AND MEMORY II

Directions: Listen as I read the following passage to the first student volunteer. As the story is retold several times, record how the story changes in the retelling. Repeat this procedure for the second version of the story.

John's story
John received a letter in the mail notifying him that he had lost the Texas Sate Achievement in Math Competition. He had wanted to win and was unhappy with the results. He had been the best student in his math class last year. Losing really hurt his self-esteem. He found out that Terry Browning had done better than him. He hated Terry Browning for that. To make himself feel better, he cried, baked cookies, beat pillows, kicked something, took a long bath, and talked to his best friend. After that, he went to the mall where he shopped and played video games in the arcade until he had beaten all the records. He then went running and came home to watch *Twilight.*

1. How does the story change from its original version? What things are added or exaggerated? What things are deleted or minimized?

_____
_____
_____
_____

Sylvia's story
Sylvia received a letter in the mail notifying her that she had lost the Texas State Achievement in Math Competition. She had wanted to win and was unhappy with the results. She had been the best student in her math class last year. Losing really hurt her self-esteem. She found out that Terry Browning had done better than her. She hated Terry Browning for that. To make herself feel better, she cried, baked cookies, beat pillows, kicked something, took a long bath, and talked to her best friend. After that, she went to the mall where she shopped and played video games in the arcade until she had beaten all the records. She then went running and came home to watch *Twilight.*

2. How does the story change from its original version? What things are added or exaggerated? What things are deleted or minimized?

_____
_____
_____
_____

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HANDOUT 3.3b: QUICK ASSESSMENT—SCHEMAS AND MEMORY

Directions: In this assessment, you will demonstrate your knowledge of schemas and how they can affect memory, as well as analyze the results of our in-class demonstration. Please answer the following questions and explain your answers in detail.

1. Describe and explain **schemas** in your own words.

_____
_____
_____
_____

2. How can schemas affect memory? Be as detailed as possible.

_____
_____
_____
_____

3. Describe the results of our in-class demonstration. Did we show evidence for schemas affecting memory? Explain why or why not.

_____
_____
_____
_____

4. Explain the connection between stereotypes and schemas. How was this connection revealed (if at all) by our demonstration?

_____
_____
_____
_____

Exercise 3–4
Automatic Thinking: The Stroop Effect

One way to demonstrate the concept of automatic thinking in class is via the Stroop effect. You may readily create the stimuli yourself: type one list of color words in the colors of the words themselves (red in red ink, blue in blue ink, and so forth), and a second list with the same color words, but this time having the color of the ink a mismatch to the color name (red in green ink, blue in yellow ink, and so forth). Alternatively, students can do the task on their own on the Web at http://faculty.washington.edu/chudler/words.html or a different variation at http://www2.b3ta.com/clickthecolour/. The student's task is to describe aloud the names of the colors of inks; this is considerably more difficult when there is a mismatch between ink color and color name because we automatically read the color name and it creates interference. Students will probably remember this task from Introductory Psychology, but it provides a short and powerful demonstration of the power of automatic processing.

Exercise 3–5
Automatic vs. Controlled Processing

Joyce Schaeuble suggests the following quick demonstration of the distinction between the two modes of processing: Have students count to ten; then have them say the numbers from one to ten in alphabetical order. Alternatively, ask them to consider their behavior when they were first learning to drive a car versus their current driving habits. The first was likely characterized by substantial attention to the mirror angles, position of the seat, correct pressure to apply to the brake, when to start braking, correct hand positions, etc. In the latter case, little if any conscious attention was applied to these, and they may have even been juggling several tasks at once (cell phone, CD player, coffee, etc.).

Exercise 3–6
The Availability Heuristic

Distribute Handout 3.6a to half of your students and 3.6b to the other half of your students. Do not make it apparent to the students that they are receiving different versions. After students have had a chance to answer, discuss the results.

Questions 1 and 2: To most people, the second type seems more frequent. It is easier to think of words ending in ING than it is to estimate the frequency of seven letter words where the penultimate letter is N. So people tend to estimate that the second type of word is more frequent. However, when one notes that the ING words are a SUBSET of the words where the penultimate letter is N (any ING word has N as the next-to-last letter), one realizes that in fact the first type of word must be more frequent. (This example appears in Fiske, 1995.) Making the error of thinking that ING words are more frequent is thus an example of the availability heuristic, estimating frequency by the ease with which examples come to mind.

Question 3 comes from Tversky & Kahneman (1974). Tversky and Kahneman found that students given the $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 =$ _____ version of the problem made larger estimates of the answer (M = 2250) than did those given the $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 =$

_____ version of the problem (M = 512), despite the fact that the numbers involved in each problem are the same. But students given the version beginning with large numbers had large numbers more readily available. [However, in fact, both groups underestimated the answer, which is 40,320.]

Questions 4 through 6, again based on Tversky and Kahneman (1974), ask students to estimate the percent of people who die of different causes. In each case, more people actually die of the lung diseases; however, people tend to estimate that deaths due to homicide, motor vehicle accidents, and fire are greater. Of course, these latter causes are much more likely to appear in news reports. Russo and Schoemaker (1989, p. 83) did a one-year survey of how often accounts of deaths due to these different causes appear in the news, and found that the lung diseases virtually never appeared in newspaper reports, whereas reports due to accident or homicide were much more frequent. Salient incidents are likely to be easily recalled and thus bias people's estimates. For example, both the ValuJet airline crash in Florida and the TWA airline crash in New York occurred within 3 months of each other in 1996. It is likely that these two salient incidents made people's estimates of the safety of flying go down, when, taken as just two incidents among the thousands of flights that occur every day, they did not appreciably affect the accident rate.

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HANDOUT 3.6a: ESTIMATING TASKS

Directions: Answer the following questions as directed.

1. What percentage of words in the English language have "n" as their penultimate (second from the last) letter?

_____
_____

2. What percentage of words in the English language have "ing" as their final three letters?

_____
_____

3. Quickly estimate (don't calculate) the answer to $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 =$ _____

_____
_____

4. Do you think more people die each year of emphysema or homicide?

_____
_____

5. Do you think more people die each year of lung cancer or motor vehicle accidents?

_____
_____

6. Do you think more people die each year of tuberculosis or fire?

_____
_____

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HANDOUT 3.6b: ESTIMATING TASKS

Directions: Answer the following questions as directed.

1. What percentage of words in the English language have "n" as their penultimate (second from the last) letter?

_____
_____

2. What percentage of words in the English language have "ing" as their final three letters?

_____
_____

3. Quickly estimate (don't calculate) the answer to $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 =$ ____

_____
_____

4. Do you think more people die each year of emphysema or homicide?

_____
_____

5. Do you think more people die each year of lung cancer or motor vehicle accidents?

_____
_____

6. Do you think more people die each year of tuberculosis or fire?

_____
_____

Exercise 3–7
The Representativeness Heuristic and Base Rate Information

In Class: Distribute Handout 3.7 to class members. Ask them to read the description and make their estimate. Count (by show of hands) how many class members gave each response. The "right" or best-guess answer using the base rate information provided is 80%. However, a fair proportion of the class will underestimate this likelihood.

Discussion: If students believe that Melissa is more likely to be a staff member/secretary than a programmer/analyst, they are using the representativeness heuristic, which causes them to make a base rate fallacy. The information about Melissa (her gender, good communication skills, etc.) may make her seem to be fairly typical, or representative, of what secretaries/staff are like, and thus people may get led to thinking that it is more likely that she is a secretary than that she is a programmer. The information about her is vivid, concrete, and easily usable. Relying on the representativeness of a stimulus to judge probability leads to the base rate fallacy, because it leads people to underemphasize or even ignore the base rate information provided about the proportion of staff versus programmers in the company. Statistical or base rate information is more abstract, and may seem less relevant or more difficult to apply. During the discussion, it may also be useful to point out the distinction between "diagnostic" and "nondiagnostic" information. Diagnostic information is information that is informative—in this case, information about characteristics that really do distinguish between programmers and staff. Most of the information in the example is, on the other hand, non-diagnostic—for example, programmers are probably no more or less likely than staff members to enjoy crossword puzzles or know how to touch-type. If anyone argues that some of the information IS diagnostic, you can introduce the idea of Bayes theorem, which allows you to combine the probabilities for diagnostic information with the base rate. The principle provided by Bayes theorem is that diagnostic information does help predict probabilities, but only when this information is "weighted" by taking the base rate into account. Even diagnostic information (e.g., if you added "spends most of her day at the office on the telephone" to Melissa's description) only modifies the base rate. Only if you had a characteristic that led to certainty rather than just being diagnostic (e.g., "doesn't know how to program") would you totally ignore the base rate information.

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HANDOUT 3.7: ESTIMATING TASKS

Directions: Read the following description and answer the question to follow.

In company Orange, a computer software firm, there are 20 office staff (administration, secretarial, and sales) and 80 programmers/analysts.

Melissa Jones works for company Orange. She is a tall, attractive woman, age 28, and has worked at Orange for 5 years. She knows how to touch-type, communicates well with people, and loves her job at Orange. Her hobbies are crossword puzzles, painting, and dancing.

What is the likelihood that Melissa Jones is a programmer/analyst? Place a check mark next to the percentage.

0% ___
10% ___
20% ___
30% ___
40% ___
50% ___
60% ___
70% ___
80% ___
90% ___
100% ___

Exercise 3–8
Counterfactual Thinking

Have your students participate in the following thought experiment: First, say, "Imagine that you are getting a test back in a class. The professor has posted the grading scale on the board: 94+, A; 90–93, A–; 87–89, B+; 84–86, B; 80–83, B–; and so forth. You receive your exam back." Now, for half the class, tell them to imagine that they received an 87, and for the other half, tell them to imagine that they received an 89. Now ask students to indicate how satisfied or dissatisfied they are with their grade, on a scale from –5 = very dissatisfied to +5 = very satisfied. Tabulate the means: who is more satisfied? The people scoring 87 or those scoring 89? Medvec and Savitsky (1997, "When doing better means feeling worse: The effects of categorical cutpoints on counterfactual thinking and satisfaction," *Journal of Personality & Social Psychology, 72*, 1284–1296) found that students who imagined receiving an 89 actually felt less satisfied than those who imagined receiving an 87. The reason is that people who receive an 89 are just one point away from an A–, so it is easy to imagine that they could have received an A– rather than a B+ ("it could have been better"); while those who receive an 87 are just one point away from a B, so it is easy to imagine that they could have received a B rather than a B+ ("it could have been worse"). The ease with which these counterfactual possibilities come to mind influences satisfaction, leading those who scored worse to actually feel better.

Exercise 3–9
Counterfactual Thinking and Exam Scores

In a large class with a good variety of scores on an exam, hand back exams or give students their exam scores at the start of class. Immediately after, have them fill out Handout 3.9 (omitting names if you wish to keep students' responses confidential and keeping them if you wish to provide credit). After class, tally the mean satisfaction scores of the students who got 89% versus those who got 87% and the mean satisfaction scores of the students who got 79% versus those who got 77%. Put these ratings into a table or figure and present them to class. You should find that students with the higher scores are less satisfied due to counterfactual thinking. Ask students to explain why students with lower scores were more satisfied than students with higher scores. You can also use this exercise to demonstrate the distinction between findings or results (the mean scores) and theory (counterfactual thinking).

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HANDOUT 3.9

Write your exam score here.

Circle a number below to indicate how satisfied you are with this score.

1	2	3	4	5
not at all satisfied		somewhat satisfied		very satisfied

Exercise 3–10
Overconfidence Test

Time to Complete: 10 minutes
In Class: Distribute Handout 3.10 and ask students to answer. When everyone is done, read aloud the correct answers and allow students to score themselves. Students score themselves as correct if the right answer falls in between their lowest and highest scores, and as wrong if the right answer is not in between their lowest and highest scores.

Discussion: How many students had no items wrong? These students are playing it very safe, not taking any risks. Perhaps they are being underconfident. How many students were well enough calibrated to get one and only one answer wrong? Probably quite a few. How many got 2, 3, 4, and 5 or more wrong? These students are being overconfident.

However, they are in good company. In a similar test reported by Russo and Shoemaker (1989, pp. 70–75), Harvard MBAs asked to calibrate themselves to get 98% right (2% wrong) actually got 46% wrong. Why is the error rate so high? Is it because people are being asked to make estimates about trivia questions that they may know little about? Apparently not.

Russo and Shoemaker report that physicians, physicists, and computer company managers asked to make estimates for facts within their domains of expertise (e.g., for physicians, the probability that a patient has pneumonia, given certain described symptoms) were no better, scoring from 40% to 80% wrong. Why else might the overconfidence rate be so high? Are some kinds of people (e.g., people in certain professions) more likely to be overconfident than others? (In Russo and Shoemaker's studies, physicians displayed the highest rates of overconfidence.) In what professions is a very high degree of confidence a particular asset? What are the downside risks of being overconfident? Can students think of any real-life examples of poor decisions made because of overconfidence (e.g., the Harvard Economic Society, which in an issue of its 1929 newsletter proclaimed that a severe depression was "outside the range of possibility")?

Source: Modeled on Russo, J. E, & Shoemaker, P. J. H. (1989), *Decision traps: The ten barriers to brilliant decision making and how to overcome them.* New York: Fireside.

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HANDOUT 3.10: CONFIDENCE TEST

Directions: For each of the following items, provide a low guess and a high guess such that you are 90% sure the correct answer falls between the two. Aim to provide the best guess you can without being either overconfident (having too small an interval between your two guesses) or being underconfident (having too large an interval between your two guesses). If you are successful, you should have only one item (10%) wrong.

Item	Low Guess	High Guess
1. Year John Wayne won the Best Actor Academy Award for his performance in *True Grit*.	_____	_____
2. Number of times the New York Yankees won the World Series between its inception in 1903 and 1995.	_____	_____
3. Number of books in the New Testament.	_____	_____
4. Median income for all United States households in 1998.	_____	_____
5. Year the computer floppy disk was invented by IBM.	_____	_____
6. Mean number of days per year where the minimum temperature is below freezing in Juneau, Alaska.	_____	_____
7. Age Abraham Lincoln was when he was assassinated.	_____	_____
8. Population of the United States in 2000.	_____	_____
9. Air miles from New York City to Miami.	_____	_____
10. Year William Shakespeare was born.	_____	_____

Exercise 3–10
Overconfidence Test
Answers

Item	Answer
1. Year John Wayne won the Best Actor Academy Award for his performance in *True Grit*.	1969
2. Number of times the New York Yankees won the World Series between its inception in 1903 and 1995.	22
3. Number of books in the New Testament.	27
4. Median income for all United States households in 1998.	$29,240
5. Year the computer floppy disk was invented by IBM.	1970
6. Mean number of days per year where the minimum temperature is below freezing in Juneau, Alaska.	142
7. Age Abraham Lincoln was when he was assassinated.	56
8. Population of the United States in 2000.	283,500,000
9. Air miles from New York City to Miami.	1095
10. Year William Shakespeare was born.	1564

Exercise 3–11
Self-Fulfilling Prophecy

This demonstration should be done after presenting the concept of the self-fulfilling prophecy. Ask for five volunteers after warning them that the task might be slightly embarrassing. After you have your volunteers, give each a labeled hat to wear and instruct them not to look at the label. The labeled hats should read: good leader, very attractive, funny, annoying, and lazy. Be sure to print the labels clearly so that the class observers can readily discern the labels. Instruct the five volunteers to work together on various group tasks and to treat each other in accordance with the labels they wear. The tasks they are to complete are to (a) name a new school mascot for their university, (b) determine the three best reasons for being a psychology major, (c) decide the distance between two major buildings on campus, and lastly (d) line up in order of their presumed likability as a result of the interactions on (a) through (c).

The rest of the class serves as observers of the interactions and records observational notes to be used in discussion following the activity. Discussion can focus on the degree to which the self-fulfilling prophecy was revealed in this exercise and evidence supporting these claims.

Source: Hebl, M. R., & King, E. B. (2004). "You are what you wear: An interactive demonstration of the self-fulfilling prophecy," *Teaching of Psychology, 31,* 260–262.

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Exercise 3–12
Reasoning Quiz

This exercise is based on the quiz that can be found on page 69 of the text. It gives students a chance to see how heuristics can sometimes lead to faulty decision making. Have students complete the handout in class as quickly as possible. After they have completed the quiz, review the correct answers and explain (or ask students to explain) how their errors are the result of using the representativeness heuristic and the availability heuristic (questions 1 and 2).

Correct Answers:

1. The correct answer is (b), the third letter. Tversky and Kahneman (1974) found that most people thought that the answer was (a), the first letter. Why do people make this mistake? Because, say Tversky and Kahneman, they find it easier to think of examples of words that begin with r. By using the availability heuristic, they assume that the ease with which they can bring examples to mind means that such words are more common.

2. The correct answer is (b). Slovic, Fischhoff, and Lichtenstein (1976) found that most people think that (a) is correct (accidents). Why do people make this error? Again, it's the availability heuristic: Accidental deaths are more likely to be reported by the media, so people find it easier to bring to mind examples of such deaths than deaths from strokes.

3. Although there is not a perfectly correct answer, the rational answer is (c). This is because of base rate information. If 80% of the students are from Illinois, it is much more likely that the student in question is from Illinois than from any other state. However, people use the representativeness heuristic. Because the student fits the stereotype of someone from the South, students may incorrectly choose (a) or (b). The problem with applying the representativeness heuristic to people is that categories of people are homogeneous. There may be a lot of people from Texas that do not fit the stereotype of a Texan and a lot of people from outside of Texas that do.

4. Like number three, there is no perfectly correct answer but a rational analysis of base rates would tell you that the person is more likely to be an atypically dressed professor than a typically dressed college student. The most correct answer according to the logic is (b), a professor. This is another example of the representativeness heuristic.

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HANDOUT 3.12: REASONING QUIZ

Answer each of the following questions as quickly as possible.

1. Consider the letter r in the English language. Do you think this letter occurs more often as the first letter of words (e.g., rope) or more often as the third letter of words (e.g., park)?

a. more often as the first letter
b. more often as the third letter
c. about equally often as the first and as the third letter

2. Which of these do you think cause more fatalities in the United States?

a. accidents
b. strokes
c. accidents and strokes in approximately equal numbers

3. Imagine that you attend a public school in Illinois that has 80% students from Illinois and 20% students from out-of-state and international students. You meet someone who is really friendly, is wearing cowboy boots, and says "y'all." This person is probably from

a. Texas.
b. Oklahoma.
c. Illinois.

4. You attend a psychology conference that is 75% college professors and 25% college students. At lunch, you sit next to someone who is wearing jeans and sneakers. This person is probably

a. a student.
b. a professor.

Exercise 3–13
Can You Predict Your (or Your Friend's) Future?

This exercise is based on the "Try It!" on page 76 of the text, which assesses the extent to which students are biased in their predictions, predicting more positive outcomes for themselves and then for a peer. Have students complete Handout 3-13 in class and then discuss their answers. Do people generally predict more positive outcomes for themselves than their peers? This demonstrates unrealistic optimism, the belief that positive events are more likely to happen to you than someone else and negative events are less likely to happen to you than someone else.

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HANDOUT 3.13: PREDICTING THE FUTURE

A. Please answer the following questions about yourself. For each item, circle the response which best captures the genuine possibilities for what might happen during the year after you graduate from college.

1. Have an exciting job or be in an exciting graduate program
not at all likely somewhat likely very likely extremely likely

2. Live in a really nice apartment or house
not at all likely somewhat likely very likely extremely likely

3. Be in a happy long-term relationship
not at all likely somewhat likely very likely extremely likely

4. Travel to Europe
not at all likely somewhat likely very likely extremely likely

5. Do something useful
not at all likely somewhat likely very likely extremely likely

6. Keep in contact with my college friends
not at all likely somewhat likely very likely extremely likely

A. Please answer the following questions about one of your friends from college. For each item, circle the response that best captures the genuine possibilities for what might happen during the year after your friend graduates from college.

1. Have an exciting job or be in an exciting graduate program
not at all likely somewhat likely very likely extremely likely

2. Live in a really nice apartment or house
not at all likely somewhat likely very likely extremely likely

3. Be in a happy long-term relationship
not at all likely somewhat likely very likely extremely likely

4. Travel to Europe
not at all likely somewhat likely very likely extremely likely

5. Do something useful
not at all likely somewhat likely very likely extremely likely

6. Keep in contact with their college friends
not at all likely somewhat likely very likely extremely likely

Now compare your responses and answer the questions below.

1. For how many of the six questions did you predict that your friend would be more likely to have positive outcomes than you would?

____/6

2. For how many of the six questions did you predict that your friend would be equally likely to have positive outcomes as you would?

____/6

3. For how many of the six questions did you predict that your friend would be less likely to have positive outcomes as you would?

____/6

The tendency to think that you will have more positive outcomes (and less negative outcomes) than other people is called unrealistic optimism. Higher numbers for question three (i.e., saying that good things are more likely to happen to you than to your friend) reflect higher levels of unrealistic optimism.

Exercise 3–14
How Well Do You Reason?

This exercise, which tests students' logical reasoning skills, can be found on page 78 of the text. In the first scenario, students choose from pieces of evidence that most deflate the claims made in the scenario. In the second scenario they are asked to use an understanding of regression to the mean to explain baseball averages. You might ask students to come to class having completed the questions and then discuss why the answers are correct.

As a comprehension check and to be sure that they don't merely copy the answers from the text, you might also have some additional, similar questions for them to answer in class (see Handout 3.14; to make the questions more difficult, omit the answer choices and have students work in groups to come up with their own answers.).

Question 1 answers: c and d

Because there is no control condition in the study, it is not clear whether 60% is an impressive number or whether it is comparable to the percentage of participants whose symptoms would improve naturally over time (spontaneous remission). It is also not clear whether 60% improvement is higher than the rate of improvement that would occur with a placebo.

Question 2 answer: b

Although there probably is a negative correlation between skirt length and number of women in the Senate, this is more likely due to the fact that over time, skirt lengths have shortened and more women have become elected to the Senate.

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HANDOUT 3.14: HOW WELL DO YOU REASON?

Circle the correct answer or answers to the questions below.

1. A large pharmaceutical company tests a new drug intended to treat depression by administering the drug to 1,000 people with moderate levels of depressive symptoms. After two months, 60% on the participants report less depressive symptoms. The pharmaceutical company claims that the new drug is a highly effective treatment for depression. Which of the following pieces of evidence would deflate the drug company's claim that the drug is effective?

a. A high proportion of the participants in the study reported side effects.
b. Antidepressants already on the market tend to be effective in 60% of patients with moderate levels of depressive symptoms.
c. For many people with moderate levels of depressive symptoms, the number and severity of symptoms they report decreases over time even if they receive no treatment.
d. For many people with moderate levels of depressive symptoms, merely believing that they are receiving treatment and will get better causes them to get better (the placebo effect).

2. A clothing company creates an ad campaign based on the fact that shorter skirt length is associated with greater female representation in the Senate. The add claims that all good feminist women should wear short skirts so that more women get elected to the Senate. Which of the following pieces of evidence would deflate the clothing company's claim that short skirts help female politicians win Senate seats?

a. Most female Senators wear pant suits.
b. Over the course of U.S. history, skirt lengths have become shorter and more women have been elected to the Senate.
c. The majority of U.S. Senators are male.
d. Many of the women who wear short skirts are too young to vote.

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STUDENT PROJECTS AND RESEARCH ASSIGNMENTS

Exercise 3–15
Pragmatic Heuristics

Assign groups of students to come up with (either during a class session devoted to this exercise or as an out-of-class assignment) a list of "pragmatic heuristics" that people use for solving everyday problems. That is, what kinds of short-cut procedures do people use when they go grocery shopping and don't have a lot of time to make decisions about what product they'll buy? When they are going to vote and haven't thoroughly researched the candidate or the political issue? When they're at a noisy party and want to meet a particular person they are attracted to? When they're in a new town and trying to decide what restaurant to go to for dinner? When there are 20 bills, papers, and forms to fill out on their desk and they might not have time in one evening to complete them all? Ask groups to generate several short-cut procedures that people might use to solve each of these everyday problems. Also ask them how they would solve the problem to achieve the best possible answer. Compare and contrast the answers. Alternatively, Joyce Schaeuble of Sacramento City College suggests asking students how they could use heuristics to be more successful in their career as a _____ (police officer, store clerk, psychotherapist). Discussion can center on (1) under what conditions people will use the short-cut solutions and under what conditions people will strive for the best possible solution; and (2) on whether there are any links between the pragmatic heuristics that students have derived and the more general judgmental heuristics of availability, representativeness, and anchoring and adjustment.

Exercise 3–16
Social Cognitive Valentines

Print out one copy of the valentine for each student. Each student should think of someone that they would like to create a valentine for. You can tell them it does not need to be a romantic partner. They could create valentines for classmates, friends, parents, or even themselves. First, ask students what "You are so chronically accessible to me" means in plain English. (It means, "I think about you a lot.") Then, tell them to fill in the hearts with aspects of their schema about that close other. They could include traits that person possesses, their feelings about that person, or favorite memories involving that person. Then, students can give these valentines away, potentially forcing them to explain chronic accessibility and schemas to the recipients, who will likely request an explanation. You may wish to play the song "*When I Think About Angels*" at the beginning of class to provide an example of a schema of a beloved being chronically accessible.

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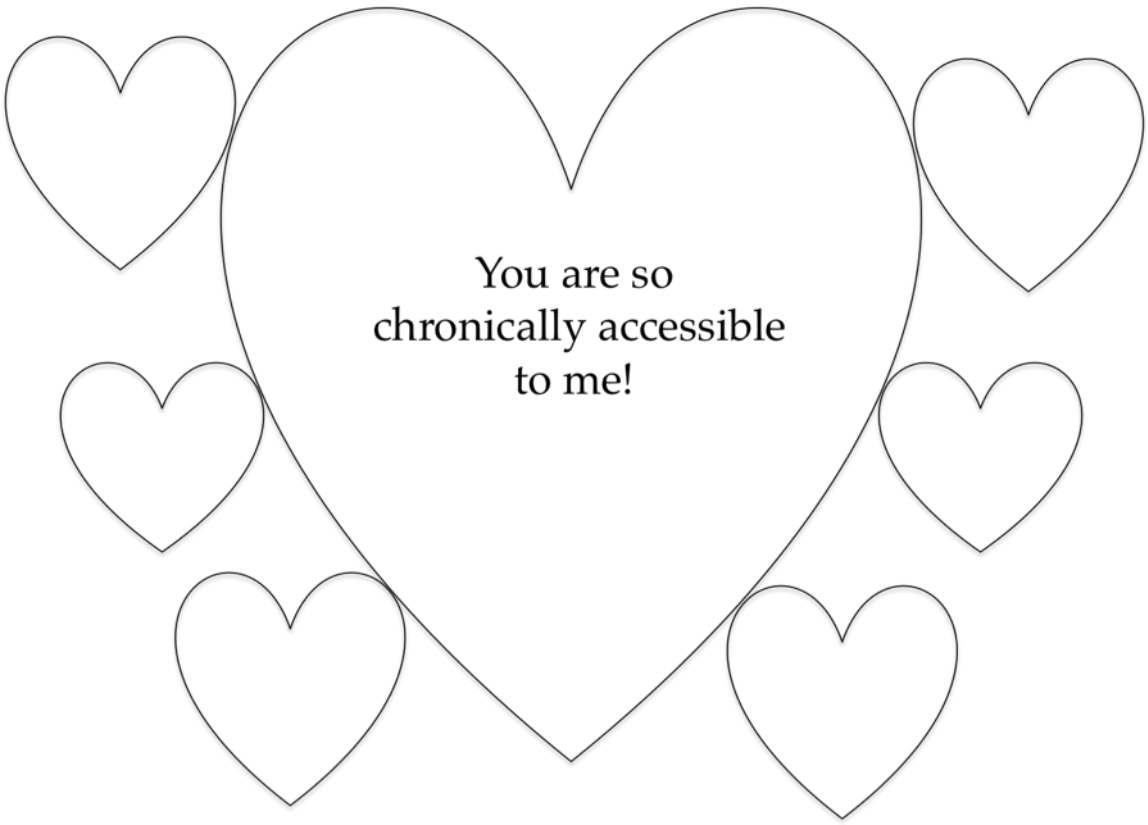
HANDOUT 3.16: SOCIAL COGNITIVE VALENTINE



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WEBSITES TO EXPLORE

http://magic.trendy.org/interactivemagic.html and click on "The Original Mysterious Rabbit." An interactive online magic trick—the bunny will guess your card, every time. A very compelling illusion—until you figure out how it is done! To figure out how the trick is done, write down the list of the original six cards, then compare this to the five cards that pop up on the screen the next time. Demonstrates the power of our schemas and expectations in guiding perceptions.

http://faculty.washington.edu/chudler/words.html An interactive Stroop demonstration on the Web. Another online variation of the Stroop task is available at: http://www2.b3ta.com/clickthecolour/

http://realmagick.com/articles/49/549.html Explains different kinds of priming in the context of asking, "Does subliminal influence work?" This topic is addressed in Chapter 7 of the text, but you might wish to explore it now in the context of accessibility and priming.

http://cygnus-group.com/CIDM/risk.html An article, "Thinking about Risk," by the Center for Informed Decision Making, which discusses the role of availability, representativeness, anchoring and adjustment, and overconfidence in perception of risk in the context of real-life situations. Good examples.

http://www.uchronia.net/ This site contains an annotated bibliography of books and short stories dealing with counterfactuals (e.g., "What if the Confederacy won the American Civil War?").

http://www.sciencenews.org/pages/sn arc99/5 29 99/bob2.htm This link is to an online article on decision-making heuristics.

http://www.edutopia.org/blog/fresh-starts-hard-to-like-students-allen-mendler This link provides advice on how to help hard-to-like students. These tips could help teachers avoid self-fulfilling prophecies because they decide certain students have limited potential and then treat them less well, affecting their ability to thrive academically.

http://www.independent.co.uk/news/world/europe/paging-dr-haus-german-doctor-cures-mystery-illness-after-recalling-a-similar-diagnosis-from-hugh-lauries-curmudgeonly-antihero-house-9113085.html An article about a doctor who made a difficult diagnosis after watching an episode of *House* shows a real life example of the availability heuristic.

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FILM AND VIDEO LISTINGS

Being There (1980). A simple-minded gardener is mistaken for a political genius due to other people's interpretations of his simple comments as profound. Good example of the power of expectations to blind us to reality.

Communication: Social Cognitions and Attributions (30 minutes, 1989, PSU). Examines how people perceive other people and how people wish to be perceived.

Constructing Social Reality (27 minutes, 1991 WGBH/Boston and PBS, Discovering Psychology Series). How do mental processes color our interpretations of reality? This video explores the role of subjective interpretations in shaping social reality.

Eye of the Beholder (25 minutes 1958, IU). An excellent film for introducing students to the impact of the power of schemas. In the first half of the film, the actions in the day of the life of the protagonist are viewed through the eyes of five people who come into contact with him during a day: his mother, who thinks he doesn't listen; a cab driver who thinks he is "a real hood;" a waiter who calls him a "lady killer;" his landlord who calls him "a loony;" and the cleaning lady, who believes he is a murderer. There is an opportunity to stop the film during the middle, during which you might ask students to jot down their own impressions of the main character. The second half of the film shows the protagonist through his own eyes, in which he is an artist in search of the perfect model for a painting of a modern madonna. Good for discussion of the power of expectations in guiding interpretations of reality (and also for discussion of how one's expectations are influenced by one's own personal self-concept and priorities).

Failing in Fairness (1994), a segment from the TV show *Dateline*, shown on 2/8/94. Available on videocassette from NBC News (800–420–2626). A nice illustration of self-fulfilling prophecies about gender in the classroom.

Forrest Gump (1996). A film based on a similar premise to *Being There:* a relatively simple-minded man achieves fame and fortune due to others' positive expectations for him.

The Galatea Effect: Managing the Power of Expectations (22 minutes, 1989, UWA). Explores interactions between others' expectations of ourselves ("Galatea Effect")—how goal setting and aspirations are affected by intrapersonal and interpersonal factors.

Judgment and Decision Making (28 minutes, 1991, WGBH/Boston and PBS). To err is human—but why? This program explains both the why and the how of making judgments and decisions, and explores the psychology of risk taking and negotiations. Contains an interview with Tversky and Kahneman (discussing the availability heuristic, the conjunction fallacy, anchoring effects and framing effects); also footage on Janis and groupthink; Beverman and negotiation, and Festinger and a re-enactment of the $1/$20 experiment.

King of Hearts (1967, retail outlets). After World War I, a Scotsman arrives in a French village inhabited only by mental patients from the local asylum. Since he expects them to be normal, he interprets their actions in line with this expectation.

Monty Python and the Holy Grail (1991). The scene with the witches about 17 minutes into the film can be used to demonstrate heuristic decision making.

The Nature of Memory (26 minutes, FHS). Explores basic memory processes. Shows how psychologists use computer models to mimic human memory, introduces studies of amnesiacs to determine how and where memories are made and stored, probes the effects of emotion on memory, and shows how memory can be altered.

The Power of Belief: Its Impact on Our Minds (40 minutes, FHS). ABC News anchor John Stossel goes to a psychology lab and even walks through fire to investigate the power of belief—as demonstrated by the placebo effects—and what psychologists call "magical thinking." Takes a look at the implications for a wide variety of phenomena, including astrology, faith healing, voodoo, channeling, and clairvoyance.

Princess Bride (1988). About one hour and seven minutes into the start of the film, the grandson interrupts the grandfather's reading of the story and illustrates his schema for how the story will unfold.

Productivity and the Self-Fulfilling Prophecy—The Pygmalion Effect (28 minutes, 1975, CRM). Illustrates how one person's expectations can affect another person's future behavior. Many scenarios are presented.

Rashomon (83 min., 1950, UWA or retail outlets). A Japanese film, directed by Akira Kurosawa and winner of the Academy Award for Best Foreign Film, showing four very different interpretations of a rape of a woman and the murder of her husband.

Social Psychology: 1 – Communication: Social Cognitions and Attributions (30 minutes, 1989, PSU). Covers topics including how individuals perceive others, how individuals wish to be perceived by others, and how individuals interpret messages sent by others.

Stand and Deliver (1987). A tough math teacher in an inner city school challenges his students to do well in calculus. Based on a true story, the teacher expects the students to do well—and they do. An interesting portrayal of the power of social expectations.

Twelve Angry Men (1957). A jury deliberates in a murder trial. Demonstrates how individual schemas influence social perception.

12 Monkeys (1995). Terry Gilliam, director. In the early 21st century, a convict is sent back in time to investigate the origins of a deadly virus believed to have been released by an underground terrorist group. A sci-fi thriller, with plenty of plot twists, this film explores the way people interpret and process information and the origins of their ideas, memories, and beliefs.

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ONLINE VIDEOS TO EXPLORE

Vancouver 2010 Olympics Medal Presentation (1.5 minutes). Students can watch this medal presentation and watch how excited the winners of the bronze and silver medals appear to be. Although they might expect the silver medalist to be happier than the bronze medalist, the bronze medalist might be happier that the silver medalist because she can imagine how easily she could have not medaled at all. The silver medalist, on the other hand, can easily imagine doing slightly better and winning a gold medal. This is an example of counterfactual thinking.
http://www.olympic.org/videos/the-victory-ceremony-for-bjorgen-haag-and-kowalczyk

Schemas. Brief example of how people remember schema consistent details of an office, even remembering things that were not there.
http://www.youtube.com/watch?v=ajpLXRCJ9lM

Memory Test. (8 minutes) Starts one minute in. Pretty standard schema consistent memory demonstration but presented by a highly animated guy with a Mohawk (Brian Brushwood).
http://www.youtube.com/watch?v=bfhIuaD183I

When I Think About Angels. (4 minutes) A Jamie O' Neal country song about how every thought she has leads her back to thinking about one person. A good introduction to the idea that thoughts or concepts are linked in memory and to the concept of chronic accessibility.
http://www.youtube.com/watch?v=jgfyxOAYmyA&ob=av2e

The Effect of the Body on the Mind. (7.5 minutes) A TED talk by Ron Gutman about how smiling is associated with various positive outcomes. Could be used as an example of unconscious influences on behavior and the way in which physical sensations can prime thoughts and behaviors. Could also be used as an example of correlational vs. experimental research because he presents both experimental and correlational research in his talk.
http://www.youtube.com/watch?v=U9cGdRNMdQQ&feature=relmfu

Your Body Language Shapes Who You Are (21 minutes). A TED talk by Amy Cuddy about her research that shows that posing in powerful positions alters participants' physiology, making them feel, and act more powerful. This could be used as an example of unconscious influences on behavior.
http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are?language=en

Student Wrongly Suspended for Red, Watery Eyes (1 minutes). A high school student in Texas was wrongly suspended for having, red watery eyes. Ask students why high school administrators might assume that a student with red eyes is high. High school administrators likely interact with a lot of students who are actually high, making the idea chronically accessible. Also, it is possible that they just saw a news report, read an article, or had a conversation about how many high school students use drugs.
https://www.youtube.com/watch?v=tOOpNgXweBs

The Science of the Young Ones: Priming (5 minutes). This video explains Bargh, Chen, and Burrows' (1996) study of the effect of priming on behavior. It shows that participants primed with words associated with older people walk slower than participants primed with words associated with younger people. It is worth noting that there was a recent non-replication of this finding, resulting in a protracted debate between Bargh and the study authors (see link to an article about it below).
https://www.youtube.com/watch?v=5g4_v4JStOU

Are We in Control of Our Decisions? (17.5 minutes) Dan Ariely's TED talk discusses research that shows that our decisions are often not consciously made and influenced by factors beyond our control that we are unaware of. This relates to the topics of free will and decision making.
https://www.youtube.com/watch?v=9X68dm92HVI

How to Use Conscious and Unconscious Thought to Make Better Choices (8 minutes). Loran Nordgren discusses how to use both conscious and unconscious thought to make good decisions.
https://www.youtube.com/watch?v=RgO_3KQdQB4

Do Dirty People Lie More? (4 minutes). This news report discusses the research about cleanliness and morality and heavy clipboards. This clip is compellingly presented, cites the research, and is highly relevant to the topic of priming metaphors of the body and mind.
https://www.youtube.com/watch?v=iewZbSsl380

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