

INSTRUCTOR'S RESOURCE MANUAL

Psychological Science

FOURTH EDITION

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HIGHLINE COMMUNITY COLLEGE



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PREFACE

Dear Instructor:

Welcome to the Instructor's Resource Manual!

Whether you are new to teaching or a veteran, you will find within these pages many great ideas to bring into your course. Each chapter of the manual is broken down by resource type. Within each chapter, you will find:

Concept map. This is an outline of the main topics covered in the chapter. Each element and suggested activity in this chapter of the Instructor's Manual is keyed to a portion of this outline using a Concept Number (e.g., I.A.i) so you can easily skim for activities on specific topics.

Sample lectures. These suggest possible sequences for using the suggested activities that follow as part of a 50-minute or 70-minute lecture.

Chapter summary. This is an overview of the chapter in the textbook.

Lecture ideas. These suggest ways to elaborate on the material in the textbook.

Discussion questions. Do you want to get your students more involved? Posing these questions to your class, as a whole, in small groups, or on an online discussion board,

will generate an interesting dialogue. If you ask your students to write a blog, many of these questions can provide appropriate material for that assignment.

Demos and handouts. Including some hands-on activities will bring the science of psychology alive as students can see the concepts in action.

Films/readings/Web resources. This part of the manual contains video suggestions (many available free online); lists of additional readings that you can assign to your students if you would like them to get a bit more information on a topic; and Web resources (most are interactive Web sites that will give students more experience with psychological concepts). The suggested videos and web resources are appropriate as out-of-class assignments if you would rather not devote class time to them.

If you find something within these pages that works very well for you or does not work at all, please let us know. Your suggestions for additions to this manual and for variations on the lectures, discussions, and everything else that we already cover are most welcome.

Looking forward to hearing from you!

Sue Frantz

CHAPTER 5

Consciousness

CONCEPT MAP

Each element and suggested activity in this chapter of the *Instructor's Manual* is keyed to a portion of this outline using a Concept Number (e.g., I.A.i). Please refer back to this outline to determine what concept each Concept Number refers to.

The following Concept Map is a text-only adaptation of the Visual Summary provided on StudySpace, the student Web site. The Concept Map is also reprinted in the Study Guide and Instructor's Manual.

- I. Consciousness Is a Subjective Experience
 - A. Consciousness:
 - i. is moment-by-moment subjective experience.
 - ii. results from activation of groups of neurons.
- II. There Are Variations in Conscious Experience
 - A. Variations in consciousness range from:
 - i. automatic to controlled processing of information.
 - ii. persistent vegetative states to minimal consciousness to full consciousness.
 - B. Consciousness:
 - i. allows performance of complex actions with input from multiple parts of brain.
 - ii. helps people connect by sharing thoughts and feelings.
 - iii. is required for complicated thinking.
- III. Brain Activity Gives Rise to Consciousness
 - A. Global workspace model: level of consciousness depends on which brain region is active.
 - B. Severing of corpus callosum leads to split brain: two independently functioning half brains.
 - C. Left hemisphere interpreter:
 - i. makes sense of actions.
 - ii. speculates about other actions.
 - D. Right brain experiences the world:
 - i. with images.
 - ii. spatially.
 - iii. without narrative.
- IV. Unconscious Processing Influences Behavior
 - A. Much behavior occurs automatically.
 - B. Information can be processed subliminally.
 - C. Unconscious information processing may produce better decisions than conscious processing.
- V. Sleep Is an Altered State of Consciousness
 - A. Characterized by four stages of increasingly slower brain activity.
 - B. REM sleep is:
 - i. characterized by rapid eye movements.
 - ii. typified by increased brain activity, body paralysis, and dreaming.
 - C. Common sleep disorders include insomnia, apnea, narcolepsy, and REM behavior disorder.
- VI. Sleep Is an Adaptive Behavior
 - A. Three models explain adaptive nature of sleep:
 - i. restorative theory: sleep allows brain to restore itself.
 - ii. circadian rhythm theory: sleep limits activity of animals at times of day when threats of harm are greatest.
 - iii. facilitation of learning: sleep promotes strengthening of neural connections.
 - B. Sleep deprivation leads to:
 - i. problems in mood and cognitive performance.

- ii. problems with immune system.
 - iii. eventually, death.
- VII. People Dream while Sleeping
 - A. Non-REM sleep → brain deactivation + mundane dreams.
 - B. REM sleep → brain activation + vivid, intense dreams.
 - C. Three theories of dreaming:
 - i. Freudian: dreaming reveals unconscious conflicts with manifest content and latent content; there is no evidence to support this theory.
 - ii. activation-synthesis theory: dreams result from mind's attempts to make sense of random neural activity.
 - iii. evolved threat-rehearsal theory: dreams are rehearsals of strategies for coping with threatening events.
- VIII. Hypnosis Is Induced through Suggestion
 - A. Consciousness can be altered through hypnosis, meditation, and immersion in activity.
 - B. Hypnosis:
 - i. is a social interaction in which a person responds to suggestion.
 - ii. involves hypnotic induction and posthypnotic suggestion.
 - iii. can be useful for pain management.
 - C. Two theories of hypnosis:
 - i. socio-cognitive theory: person "acts" hypnotized.
 - ii. dissociation theory: hypnosis is a trancelike state where awareness is separated from other aspects of consciousness; there is significant evidence to support this theory.
- IX. Meditation Produces Relaxation
 - A. Meditation:
 - i. focuses attention on external object (concentrative) or sense of awareness (mindfulness).
 - ii. leads to relaxation as well as physical and psychological benefits.
- X. People Can Lose Themselves in Activities
 - A. During flow:
 - i. person becomes absorbed in activity (e.g., religion, exercise).
 - ii. consciousness is altered.
 - B. Escapist pursuits can reduce self-awareness, but can have negative results.
- XI. Psychoactive Drugs
 - A. Are mind-altering substances.
- B. Change the brain's neurochemistry by activating neurotransmitter systems.
- XII. Stimulants
 - A. Interfere with reuptake of dopamine.
 - B. Increased release of dopamine → increased behavioral and mental activity.
- XIII. People Use—and Abuse—Many Psychoactive Drugs
 - A. Marijuana activates cannabinoid receptors → enhanced mental activity, memory impairment, and altered pain perception.
 - B. Cocaine prevents reuptake of dopamine → confidence, alertness, and sociability.
 - C. Amphetamines (e.g., methamphetamine):
 - i. block reuptake of dopamine.
 - ii. eventually damage frontal lobes.
 - D. MDMA (ecstasy):
 - i. is associated with serotonin release.
 - ii. may lead to memory impairment.
 - E. Opiates increase pleasure by binding with opiate receptors and activating dopamine receptors.
- XIV. Alcohol Is the Most Widely Abused Drug
 - A. Alcohol:
 - i. activates dopamine receptors.
 - ii. interferes with memory.
 - B. Cross-culturally, men consume more alcohol than women:
 - i. women do not metabolize alcohol as quickly.
 - ii. because of body size, women consume less alcohol to achieve same effect.
 - C. Expectations about impact of alcohol affect behavior while under influence of alcohol.
- XV. Addiction Has Physical and Psychological Aspects
 - A. Addiction: compulsive drug use despite negative consequences.
 - B. Tolerance: need for more of drug to get same effect.
 - C. Withdrawal: when failing to ingest an addictive substance leads to physiological and psychological symptoms.
 - D. Dependence: need for continued use of drug to avoid withdrawal.
 - E. Addiction:
 - i. is likely caused by dopamine activity in limbic system.
 - ii. may be related to genetic components and/or personality traits (high sensation seeking).
 - F. Influences on drug abuse include:
 - i. observing others modeling use of drugs.
 - ii. social context in which drug use occurs.

SAMPLE LECTURES

These sample lectures refer back to the Concept Map and suggest possible sequences for using the suggested activities that follow. Please refer to the indicated pages for an explanation of each activity.

50-MINUTE LECTURES

Time	Activity
3 min	Class opener: Summarize previous class; ask for questions from previous class.
2 min	Session introduction.
15 min	Course content: Define consciousness. (Section 5.1; Concept I.) Discuss the left hemisphere as the interpreter. (Section 5.1; Concept III.) Explain the split brain procedure. (Section 5.1; Concept II.B.)
15 min	<i>Demo: Split-brain demonstration</i> on page 74. (Section 5.1; Concept II.B.)
5 min	Debrief demo.
5 min	<i>Lecture idea: Conscious Awareness</i> on page 72. (Section 5.1; Concept II.)
5 min	End of class reflection: On an index card, have students identify the three most important concepts they learned in this class session.

Time	Activity
3 min	Class opener: Summarize previous class; ask for questions from previous class
2 min	Session introduction.
10 min	Course content: Provide an overview of sleep, including the stages of sleep, and the role of sleep. (Section 5.2; Concept V–VII.)
15 min	<i>Lecture idea: Sleep deprivation</i> on page 72. (Section 5.2; Concept V.C.)
15 min	<i>Discussion: Sleep deprivation</i> on page 73. (Section 5.2; Concept VI.)
5 min	End of class reflection: On an index card, have students identify the three most important concepts they learned in this class session.

70-MINUTE LECTURES

Time	Activity
3 min	Class opener: Summarize previous class; ask for questions from previous class.
2 min	Session introduction.
10 min	Course content: Define consciousness. (Section 5.1; Concept I.) Discuss the left hemisphere as the interpreter. (Section 5.1; Concept III.) Explain the split brain procedure. (Section 5.1; Concept II.B.)

15 min	<i>Demo: Split-brain demonstration</i> on page 74. (Section 5.1; Concept II.B.)
5 min	Debrief demo.
10 min	<i>Lecture idea: Conscious Awareness</i> on page 72. (Section 5.1; Concept II.)
22 min	<i>Films/Readings/Web Resources: Dan Dennett on Our Consciousness</i> on page 75. (Section 5.1; Concept II.)
3 min	End of class reflection: On an index card, have students identify the three most important concepts they learned in this class session.

Time	Activity
3 min	Class opener: Summarize previous class; ask for questions from previous class.
2 min	Session introduction.
20 min	Course content: Provide an overview of sleep, including the stages of sleep and the role of sleep. (Section 5.2; Concept V–VII.)
10 min	<i>Discussion: REM and Non-REM Sleep</i> on page 73. (Section 5.2; Concept VII.)
15 min	<i>Lecture idea: Sleep deprivation</i> on page 72. (Section 5.2; Concept V.C.)
15 min	<i>Discussion: Sleep deprivation</i> on page 73. (Section 5.2; Concept VI.)
5 min	End of class reflection: On an index card, have students identify the three most important concepts they learned in this class session.

CHAPTER SUMMARY

This chapter summary is also printed at the end of Chapter 5 of the student textbook. It is reprinted here with Concept Numbers from the Concept Map above for your convenience and planning.

5.1 WHAT IS CONSCIOUSNESS?

Consciousness Is a Subjective Experience. Consciousness is difficult to study because of the subjective nature of our experience of the world. Brain imaging research has shown that particular brain regions are activated by particular types of sensory information.

Concept: I.

Keywords: Consciousness

There Are Variations in Conscious Experience. Consciousness is each person's unified and coherent experience of the world around him or her. At any one time, each person can be conscious of a limited number of things. A person's level of consciousness varies throughout the day and depends on the task at hand. Whereas people in a persistent vegetative state show no brain activity, people in minimally conscious

states show brain activity. That activity indicates some awareness of external stimuli.

Concept: II.

Keywords: Consciousness, Coma

Brain Activity Gives Rise to Consciousness. The global workspace model maintains that consciousness arises from activity in different cortical areas. The corpus callosum connects the brain's two sides; cutting it in half results in two independently functioning hemispheres. The left hemisphere is responsible primarily for language, and the right hemisphere is responsible primarily for images and spatial relations. The left hemisphere strives to make sense of experiences, and its interpretations influence the way a person views and remembers the world.

Concept: III.

Keywords: Consciousness, Corpus Callosum, Split-Brain

Unconscious Processing Influences Behavior. Research findings indicate that much of a person's behavior occurs automatically, without that person's conscious awareness. Thought and behavior can be influenced by stimuli that are not experienced at a conscious level.

Concept: IV.

Keywords: Consciousness, Unconscious Processing

5.2 WHAT IS SLEEP?

Sleep Is an Altered State of Consciousness. Sleep is characterized by stages that vary in brain activity. REM sleep is marked by rapid eye movements, dreaming, and body paralysis. Sleep disorders include insomnia, sleep apnea, and narcolepsy.

Concept: V.

Keywords: Sleep, Dreaming, Insomnia, Sleep Apnea, Narcolepsy, Sleep Disorders

Sleep Is an Adaptive Behavior. Sleep allows the body, including the brain, to rest and restore itself. Sleep also protects animals from harm at times of the day when they are most susceptible to danger, and it facilitates learning through the strengthening of neural connections.

Concept: VI.

Keywords: Sleep, Cognitive Performance

People Dream while Sleeping. REM dreams and non-REM dreams activate and deactivate distinct brain regions. Sigmund Freud believed that dreams reveal unconscious conflicts. Evidence does not support this view. Activation-synthesis theory posits that dreams are the product of the mind's efforts to make sense of random brain activity during sleep. Evolved threat-rehearsal theory maintains that dreaming evolved as a result of its adaptive value. That is, dreaming may have enabled early humans to rehearse strategies for coping with threatening events.

Concept: VII.

Keywords: Dreams, Sleep, Freud, Activation-Synthesis, Evolution

5.3 WHAT IS ALTERED CONSCIOUSNESS?

Hypnosis Is Induced through Suggestion. Scientists have debated whether hypnotized people merely play the role they are expected to play or whether they experience an altered state of consciousness. Consistent with the latter view, brain imaging research has demonstrated changes in brain activity among hypnotized subjects.

Concept: VIII.

Keywords: Hypnosis, Consciousness, Altered States

Meditation Produces Relaxation. The goal of meditation, particularly as it is practiced in the West, is to bring about a state of deep relaxation. Studies suggest that meditation can have multiple benefits for people's physical and mental health.

Concept: IX.

Keywords: Meditation, Altered States

People Can Lose Themselves in Activities. Exercise, religious practices, and other engaging activities can produce a state of altered consciousness called flow. In this state, people become completely absorbed in what they are doing. Flow is experienced as a positive state. In contrast to activities that generate flow, activities used to escape the self or reduce self-awareness can have harmful consequences.

Concept: X.

Keywords: Flow, Consciousness, Altered States

5.4 HOW DO DRUGS AFFECT CONSCIOUSNESS?

People Use—and Abuse—Many Psychoactive Drugs. Stimulants, including cocaine and amphetamines, increase behavioral and mental activity. THC (the active ingredient in marijuana) produces a relaxed state, an uplifted mood, and perceptual and cognitive distortions. MDMA, or ecstasy, produces energizing and hallucinogenic effects. Opiates produce a relaxed state, analgesia, and euphoria.

Concept: XIII.

Keywords: Drugs, Cocaine, Stimulants, Amphetamines, THC, MDMA, Ecstasy, Opiates, Altered States, Drug Abuse

Alcohol Is the Most Widely Abused Drug. Alcohol impairs motor processes, informational processing, mood, and memory. Research has demonstrated that, across the globe, males consume more alcohol than females. A drinker's expectations can significantly affect his or her behavior while under the influence of alcohol.

Concept: XIV.

Keywords: Drugs, Alcohol, Memory, Gender, Altered States, Drug Abuse

Addiction Has Physical and Psychological Aspects. Physical dependence occurs when the body develops tolerance for a drug. Psychological dependence occurs when someone

habitually and compulsively uses a drug or engages in a behavior despite its negative consequences.

Concept: XV.

Keywords: Drugs, Addiction, Physical Dependence, Psychological Dependence, Altered States, Drug Abuse

SUGGESTED ACTIVITIES

Suggested activities for use in the classroom and as outside assignments are broken up into four sections: Lecture Ideas, Discussion Questions, Demos and Handouts, and Films/Readings/Web Resources.

Lecture Ideas

The following activities suggest ways to elaborate on the material in the textbook.

1. *Near-death Experiences*. An interesting topic to incorporate into your lecture is the theory and research on near-death experiences as an altered state of consciousness. People who have had near-death experiences report a feeling of the self separated from the body. Research shows that people ingesting drugs such as ketamine, which is an animal tranquilizer, also report the same sensations and experiences (Jansen, 2004). You might also incorporate into your lecture the psychological transformation/growth that appears to coexist with a near-death experience and the extent to which it correlates with Buddhist philosophy regarding consciousness.

Concept: II. Time: 5 minutes

Keywords: Eastern Philosophy, Death

2. *Conscious Awareness*. When discussing the nature of conscious awareness, students often bring up the topic of what it means to be “brain dead.” This issue is complex and a constant source of debate. A good 5-minute lecture opener is to discuss the difference between coma and sleep and to present information on how decisions are made regarding when the brain has died, and thus the person is not expected to ever show conscious behavior. The American Association of Critical Care Nurses (www.aacn.org) and the *Journal of the American Medical Association* (<http://jama.ama-assn.org/>) provide numerous articles addressing the complex nature of defining death in our modern, technological world.

Concept: II. Time: 5 minutes

Keywords: Consciousness, Coma, Death

3. *Sleep Deprivation*. In 1965, college student Randy Gardner remained awake for 11 days, seemingly without harm. This famous case makes for a good lecture addition, and it can be used to segue into a longer discussion or class

assignment on sleep deprivation and the importance of sleep to our normal function.

Concept: V.C.

Time: 5 minutes

Keywords: Sleep, Sleep Deprivation

4. *Personality and Sleep*. Incorporate into your lecture some of the research on personality and sleep. This material can include the personality correlates with morningness and eveningness (Randler, 2008), personality and susceptibility to sleep deprivation (Killgore, Richards, Killgore, Kamimori, & Balkin, 2007), and whether personality is a factor in cognitive performance after sleep deprivation (Taylor & McFatter, 2003).

Concept: V, VI, VII. Time: 10 minutes

Keywords: Sleep, Sleep Deprivation, Personality, Cognitive Performance, Correlations

5. *Altered States of Consciousness*. Two articles that present and try to resolve some of the more controversial issues regarding altered states of consciousness are Vaitl et al. (2005), which is a review of the psychobiology of altered states of consciousness, and Kallio and Revonsuo (2003), which presents a multilevel framework for the description and explanation of hypnosis as an altered state of consciousness. Review and summarize these articles for your students to provide them with greater understanding of the issues involved in altered states of consciousness theory and research.

Concept: VII. Time: 5 minutes

Keywords: Hypnosis, Consciousness, Altered States

6. *East versus West*. There is a difference between the Western, scientific view of consciousness and the Eastern, religious view (i.e., Buddhism). The former perspective focuses on examining the physiological aspects of and the empirical evidence for consciousness. The latter perspective emphasizes the spiritual and transformational nature of consciousness. Incorporate into your lecture these differing views of consciousness and discuss with the class whether the two perspectives can be integrated.

Concept: IX. Time: 5 minutes

Keywords: Eastern Philosophy

7. *The Health Belief Model*. The Health Belief Model of attitude change suggests there are two steps to encourage individuals to change unhealthy behaviors. The first step is to address individuals' perceptions about health, including their general health values, specific beliefs about vulnerability, and beliefs about the consequences of the disorder. The second step is to show how changing the targeted behavior will reduce its threat to one's health. This goal can be achieved by believing that a health practice will be effective and by evaluating the costs of the unhealthy behavior versus the benefits of the healthy behavior. Incorporate this model into the lecture,

focusing specifically on how it might be used on college campuses to reduce drinking, smoking, or both.

Concept: XIV, XV. Time: 10 minutes

Keywords: Alcohol, Drugs, Drug Abuse

Discussion Questions

Whether face-to-face or online, these questions are designed to prompt thought and discussion. Most of these questions are appropriate for a class-wide or small group discussion. The times are rough estimates. How much time you want to devote to any particular discussion is entirely dependent on your goals and time constraints. For discussions that begin in a face-to-face class, consider continuing the discussion online.

1. *Debating the Issue of Life Support and Comas.* Divide the class into several groups, and have each group address this issue from one of the following positions: scientific evidence, religious values, emotional reasoning, and health care cost.
Concept: II. Time: 20 minutes
Keywords: Coma
2. *Factors Influencing Sleep.* Students often report that they have sleep difficulties because of the demands and stressors of college. Start a discussion with your students about sleeping by asking them to write examples of when it was easy for them to fall asleep and when it was more difficult. Ask them to list the factors they believe were involved in each experience. Discuss whether, given the demands of being a college student, it is possible to develop good sleep habits during college.
Concept: VI. Time: 15 minutes
Keywords: Sleep, Sleep Deprivation
3. *Sleep Deprivation.* Students are all too familiar with sleep deprivation. Ask them to tell you, by a show of hands, their average number of hours of sleep on an average weeknight, starting at 4 to 5 per night and going up to 10 to 12. Ask how many students have “pulled an all-nighter” this term to prepare for an exam. The chapter discusses three explanations for sleep: restoration, circadian cycles, and consolidation of memory. Although sleep is not well understood, the consequences of sleep deprivation have been extensively explored. The following discussion openers will get students talking and reading the chapter with renewed interest.
 - a. *Is sleep deprivation similar to alcohol impairment?* Students often go without sleep during exams and then drive home right after their last exam, or try to drive all night with their friends to a resort area for spring break. Have them use the search term “sleep deprivation” in an online news source, such as cnn.com.
 - b. *Are sleep-impaired drivers dangerous?* (1) Commercial drivers, such as bus and truck drivers, must by law have adequate sleep. Should regular drivers be required to sleep after some number of hours on the road? (2) If cars could be made impossible to operate if the driver were sleep impaired, would that be a good or bad idea?
Concept: VI. Time: 15 minutes
Keywords: Sleep, Sleep Deprivation
4. *Can Long Commutes Cause Sleep Disorders?* Ask students about the longest work commutes that they or their parents have ever had. The answers may surprise you: Many adults devote considerable time and distance to commuting each day. Ask the students: If you commute for a total of two hours each workday, how much time does that add up to? (The answer is 500 hours per year, or almost 21 days per 50-week work year.) Have a calculator handy so you can do the math for the longest commute in the class. Ask students to discuss whether they or their families found long commutes to be stressful, and if so, why. What could be done about that stress?
Concept: VI. Time: 10 minutes
Keywords: Sleep Deprivation, Sleep, Sleep Disorders
5. *Altered States.* Some would argue, and there is research to support this notion, that during the course of the day we experience continual states of altered consciousness as our bodies fluctuate between the cycle of circadian rhythms and the sleep cycles. However, our awareness of these changes is not as heightened as would be our awareness of an altered state of consciousness brought on by the more vivid phenomenon of hypnosis. Discuss with students whether mild changes in consciousness and drastic changes in consciousness constitute what is meant by altered states.
Concept: VII. Time: 10 minutes
Keywords: Consciousness, Altered States
6. *REM and Non-REM Sleep.* As indicated in the text, there is a difference between REM and non-REM sleep in terms of dream content. In addition, there is debate regarding what dreams actually tell us about the individual who is having them. Investigate these issues with students by having them keep a dream journal for 2 to 3 days. Ask them to bring their journals to class and incorporate the following questions into your discussion:
 - a. Differentiate between REM dreams and non-REM dreams.
 - b. Examine the dreams’ content based on Freud’s theory of manifest and latent content.
 - c. Discuss the dreams’ content based on the activation-synthesis hypothesis.
 - d. Discuss the dreams’ content based on the evolved threat-rehearsal strategies.

Concept: VII. Time: 20 minutes
Keywords: Sleep, Dreams

7. *Making Illegal Drugs Legal?* Debate the issue of making currently illegal drugs legal. Include in the discussion the issues regarding abuse of alcohol, a legal drug. Concept: XIII, XIV. Time: 15 minutes
Keywords: Drugs, Alcohol
8. *Physical versus Psychological Addiction.* Discuss with students whether it is more or equally difficult to break a physical addiction or a psychological addiction to drugs. Concept: XV. Time: 10 minutes
Keywords: Addiction, Drugs

Demos and Handouts

These demonstrations can be adapted to fit your goals and time constraints.

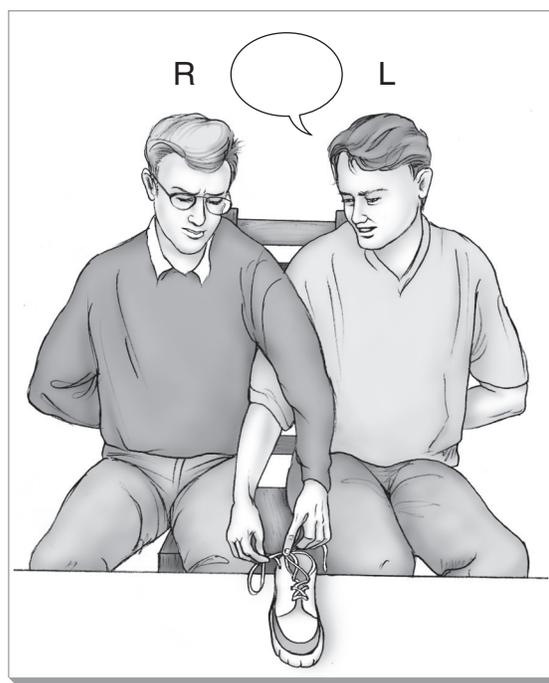
1. *Multitasking.* Many students believe, most likely incorrectly, that they can perform one task, such as driving, while doing a multitude of other things, such as talking on the phone, listening to music, and putting on make-up. This class exercise is designed to show students the extent to which they are fully able to pay attention to one task when engaged in other tasks as well. You will need candy (enough for each person in the class, and additional candy to toss to them), music, and summaries of two sections of the textbook that you have not yet presented in class. For the first phase of this activity, tell students you are going to read one of the section summaries to them, and ask that they pay attention. When you are done reading, tell students to write down all the information they can recall from the passage. For the second phase, hand out the candy to the students. Tell students that once you begin reading the other section summary, they are to hand their piece of candy to the student on the right, and to continue to do so until you are done reading. In addition, tell students you will be tossing pieces of candy to them, which you want them to try to catch, while you are reading the summary. Finally, before you start reading, turn on the music. After you are finished reading the summary, turn off the music and tell students to write down all the information they can recall. Ask students under which conditions they remembered more information. Discuss with students the ramifications of doing multiple tasks at one time rather than focusing on a specific task. Concept: II. Time: 20 minutes
Keywords: Consciousness, Multitasking
2. *Split-Brain Demonstration.* After introducing the concepts of split brain surgery and postsurgical functioning, ask for two volunteers to sit next to each other at a table that faces the class. The students should share one

chair, and each should put his or her “outside” hand behind his or her back.

The student sitting on the left represents the left hemisphere of the brain. The student sitting on the right represents the right hemisphere of the brain. The students should place their inner hands on the desk crossing over each other (just as the right side of the brain controls the left hand and vice versa).

Place a shoe in front of the volunteers and ask them to tie the laces using only their inner hands. Only the volunteer using the right hand may talk. Students should experience difficulty tying the shoe with two “unrelated” hands. This activity can be used to discuss the left hemisphere’s role in language, the role of practice in improving performance after surgery, and the common experience of “numbness” that split brain patients feel immediately after surgery.

Concept: II.B. Time: 15 minutes
Keywords: Split-Brain



3. *Disassociation Theory.* There is strong evidence presented in the text for the disassociation theory of hypnosis, particularly regarding the use of hypnosis for pain alleviation. Is this theory as effective an explanation for other behaviors targeted by hypnosis, such as dieting or smoking, or is the sociocognitive theory of hypnosis a more logical argument? Have your students debate these two theories in terms of the issues of the use of hypnosis to reduce pain and to assist with dieting and smoking

cessation. Also ask them to consider other problematic behaviors that might be targeted through the use of hypnosis.

Concept: VIII. Time: 15 minutes

Keywords: Hypnosis

4. *Meditation*. Figure 5.21 of the text encourages students to try meditating for 20 minutes using either concentrative or mindfulness methods. Bring this activity into the classroom and help students investigate whether meditating, even briefly, can help them develop an increased sense of calmness. Before starting the meditation exercise, ask students to list their current thoughts and feelings. Next, select one of the two forms of meditation for the class to try. Have them meditate for 10 minutes (this will seem like a long time). Finally, ask students again to write down their immediate thoughts and feelings. Discuss with students any differences that might have occurred after meditating.

Concept: IX. Time: 20 minutes

Keywords: Meditation

Films/Readings/Web Resources

Depending on your goals and time constraints, these additional resources could be used as in-class activities or be referenced in lecture to provide students with resources to refer to outside of class. They could also form a strong basis for additional outside assignments.

1. *Simon Lewis: Don't Take Consciousness for Granted*. "After a catastrophic car accident that left him in a coma, Simon Lewis found ways to recover—physically and mentally—beyond all expectations. At the INK Conference he tells how this remarkable story led him to concern over all threats to consciousness, and how to overcome them."

URL: http://www.ted.com/talks/simon_lewis_don_t_take_consciousness_for_granted.html
Shortened URL: <http://goo.gl/kvabe>
Concept: II. Time: 23 minutes
Keywords: Consciousness, Coma
2. *Dan Dennett on Our Consciousness*. "Philosopher Dan Dennett makes a compelling argument that not only don't we understand our own consciousness, but that half the time our brains are actively fooling us."

URL: http://www.ted.com/index.php/talks/dan_dennett_on_our_consciousness.html
Shortened URL: <http://goo.gl/TBeEu>
Concept: II. Time: 22 minutes
Keywords: Consciousness
3. *The Awareness Test*. Created as a UK public service announcement to help drivers become more aware of bicyclists, this video is an updated version of the original gorilla-amongst-the-basketball-players research video.

URL: <http://www.youtube.com/watch?v=oSQJP40PcGI>
Shortened URL: <http://goo.gl/1FHw>
Concept: II. Time: 2 minutes
Keywords: Consciousness, Multitasking
4. *Color-Changing Card Trick*. Watch the card trick in the first half of the video. In the second half, see what you missed.

URL: <http://www.youtube.com/watch?v=voAntzB7EwE>
Shortened URL: <http://goo.gl/otQP>
Concept: II. Time: 4 minutes
Keywords: Consciousness, Multitasking
5. *Test Your Awareness: Whodunnit?* A quick, powerful example of change blindness.

URL: <http://www.youtube.com/watch?v=ubNF9QNEQLA>
Shortened URL: <http://goo.gl/7CGhd>
Concept: II. Time: 2 minutes
Keywords: Consciousness, Multitasking
6. *Paralyzed by Love*. When he feels strong emotions of love, this man experiences a narcoleptic attack.

URL: <http://abcnews.go.com/Nightline/video/disease-mind-11433765>
Shortened URL: <http://goo.gl/x2zb2>
Concept: V.C. Time: 8 minutes
Keywords: Narcolepsy, Sleep, Sleep Disorders
7. *The Other Big Deficit: Many Teens Fall Short on Sleep*. In this 2011 NPR story, we learn that "most high school students are chronically tired. They juggle school, sports, homework, chores, friends and family. To meet all of these demands, surveys show, high schoolers usually stay up close to midnight on school nights. And then they have to get up early the next morning, typically around 6 or 6:30 a.m., to get to school on time, as most high schools start classes around 7:30 a.m."

URL: <http://www.npr.org/2011/05/16/136275658/late-to-bed-early-to-rise-makes-a-teen-sleepy>
Shortened URL: <http://goo.gl/X2h5U>
Concept: VI. Time: 5 minutes
Keywords: Sleep, Sleep Deprivation
8. *Jessa Gamble: Our Natural Sleep Cycle*. "In today's world, balancing school, work, kids and more, most of us can only hope for the recommended eight hours of sleep. Examining the science behind our body's internal clock, Jessa Gamble reveals the surprising and substantial program of rest we should be observing."

URL: http://www.ted.com/talks/lang/eng/jessa_gamble_how_to_sleep.html
Shortened URL: <http://goo.gl/RJ7s>
Concept: VI. Time: 4 minutes
Keywords: Sleep, Sleep Deprivation

9. *Women's Circadian Rhythms Beat Faster than Men's*. In this 2011 NPR story, we learn that women, on average, have a longer circadian rhythm than do men.
URL: <http://www.npr.org/2011/05/03/135954176/womens-circadian-rhythm-beats-faster-than-mens>
Shortened URL: <http://goo.gl/oNRUf>
Concept: VI.A.ii. Time: 4 minutes
Keywords: Circadian Rhythm, Sleep

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