



Introduction to
Psychology

14e

GATEWAYS TO MIND AND BEHAVIOR

DENNIS COON • JOHN O. MITTERER



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DENNIS COON • JOHN O. MITTERER
Brock University



Australia • Brazil • Japan • Korea • Mexico • Singapore • Spain • United Kingdom • United States

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DENNIS COON is the author of *Psychology: A Journey* and *Psychology: Modules for Active Learning*, as well as this book, *Introduction to Psychology: Gateways to Mind and Behavior*. Together, these textbooks have been used by more than 2 million students. Dr. Coon frequently serves as a reviewer and consultant to publishers, and he edited the best-selling trade book *Choices*. He also helped design interactive digital modules for PsychNow!

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In his spare time, Dr. Mitterer strives to become a better golfer and to attain his life goal of seeing all the bird species in the world. To this end, he travels to birding "hot spots" Papua New Guinea, Uganda, the Galapagos, Brazil, and China.



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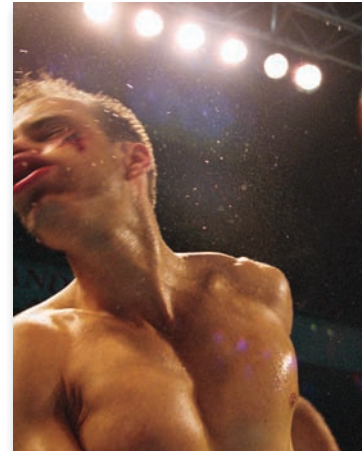
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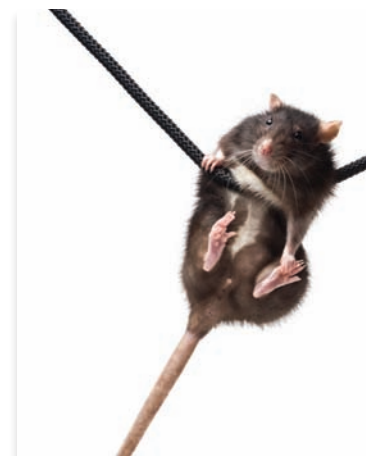
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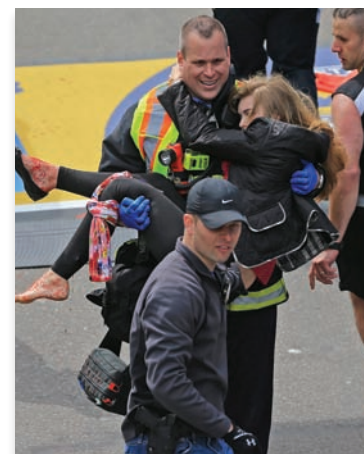
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Preface

To You, the Student—An Invitation to Learn Psychology

Greetings from your authors! We look forward to being your guides as you explore the exciting field of psychology and our ever-evolving understanding of human behavior. In a very real sense, we wrote this book about you, for you, and to you. We sincerely hope you will find, as we do, that what you learn is at once familiar, exotic, surprising, and challenging.

Reading *Introduction to Psychology: Gateways to Mind and Behavior*

In *Gateways to Mind and Behavior*, we invite you to take your first journey through psychology. We trust that you will find it quite interesting and useful in your everyday life. Each chapter of this book takes you into a different realm of psychology, such as personality, abnormal behavior, memory, consciousness, and human development. Each realm is complex and fascinating in its own right, with many pathways, landmarks, and interesting detours to discover. Like any journey of discovery, your exploration of psychology will help you better understand yourself, others, and the world around you. It's definitely a trip worth taking.

Studying *Introduction to Psychology: Gateways to Mind and Behavior*

None of us likes to start a new adventure by reading a manual. We want to step off the airplane and begin our vacation, get right into that new computer game, or just start using our new digital camera or smartphone. You might be similarly tempted to just start reading this textbook or working through the accompanying website. Please be patient. Successfully learning psychology depends on how you study, as well as how you read.

Psychology is about each of us. It asks us to adopt a reflective attitude as we inquire, “How can we step outside ourselves to look objectively at how we live, think, feel, and act?” Psychologists believe the answer is through careful thought, observation, and inquiry. As simple as that may seem, thoughtful reflection takes practice to develop. It is the guiding light for all that follows.

Gateways to Mind and Behavior, then, is your passport to an adventure in active learning, not just passive reading. To help you get off to a good start, we strongly encourage you to read our short “manual,” *The Psychology of Reflective Studying*, which precedes Chapter 1. In it, we describe a variety of study skills, including the

reflective SQ4R method, which you can use to get the most out of your psychology course, and your other courses as well.

To You, the Instructor—An Invitation to Teach Psychology

Thank you for choosing *Introduction to Psychology: Gateways to Mind and Behavior* for your students and for your course. Marcel Proust wrote, “The real voyage of discovery consists not in seeing new landscapes but in having new eyes.” It is in this spirit that we have written this book to promote not just an interest in human behavior but an appreciation for the perspective of the psychologist as well.

As we point out to your students in the introduction, *The Psychology of Reflective Studying*, there is a big difference between experiencing and reflecting on experience (Norman, 1994). For John Dewey (1910), reflective thinking is the “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusion to which it tends.” The psychologist’s perspective, of course, involves reflecting on human behavior in a variety of ways. When it comes to studying psychology, reflective cognition requires actively thinking *about* what you have just read, which results in deeper understanding and memory. Please consider taking a look at our introduction because it explains to your students in some detail how to become a more reflective student and outlines how they can get the most out of this book. If at all possible, we encourage you to assign your students to read it.

Throughout this textbook, we have tried to select only the “best” material from the many topics that could be presented. Nevertheless, *Gateways to Mind and Behavior* covers not only the heart of psychology, but also many topics at the cutting edge of current knowledge, including a focus on the practical applications of psychology, the growing importance of neuroscience, and the richness of human diversity. New information, anecdotes, perspectives, and narratives appear throughout the 14th edition. The result is a concise textbook that is readable, manageable, informative, and motivating. At the same time, this book is structured to help students consolidate efficient learning skills and become better critical thinkers. Without such skills, students cannot easily go, as Jerome Bruner (1973) put it, “beyond the information given.”

The Teaching Challenge

Wouldn't it be nice if all of our students came to our courses highly motivated to explore psychology and well prepared to cope with the learning challenges we create for them? As the authors of

this textbook, we have together accumulated some 60 years of classroom experience, teaching tens of thousands of college and university students. Although we have found most students to be generally well intentioned, our modern world certainly immerses them in their work, careers, families, intimate relationships, popular culture, and life in general. As we compete for ever-more-limited student attention, we must do more than just lecture in psychology. We also must motivate our students to read and learn, as well as educate them about how to learn effectively (Matthew & Sternberg, 2009; Paternoster & Pogarsky, 2009).

We have explicitly designed and written the 14th edition of *Gateways to Mind and Behavior* to foster deeper student engagement with the field of psychology, better memory for what has been read and studied, and a deeper understanding of how to become more reflective learners and thinkers. To help you and your students reach these goals, we have organized our design philosophy around three core principles.

1: Readability and Narrative Emphasis

Many introductory psychology students are reluctant readers. Selecting a textbook is half the battle in teaching a successful course. A good textbook does much of the work of imparting information to your students. This frees class time for your discussion, extra topics, or media presentations. It also leaves students asking for more. When a book overwhelms students or cools their interest, teaching and learning suffer. If students won't read the textbook, they can't very well be reflective about what they have read.

That's why we've worked hard to make this a clear, readable, and engaging text. *Gateways to Mind and Behavior* is designed to give students a clear grasp of major concepts, without burying them in details. At the same time, it offers a broad overview that reflects psychology's rich heritage of ideas. We think students will find this book informative and intellectually stimulating.

Because we want students to read this book with genuine interest and enthusiasm, not merely as an obligation, we have made a special effort to weave narrative threads through every chapter. Everyone loves a good story, and the story of psychology is among the most compelling to be told. Throughout *Gateways to Mind and Behavior*, we have used intriguing anecdotes and examples to propel reading and sustain interest.

Practical Applications

To make psychology even more inviting to students, we have emphasized the many ways that psychology relates to practical problems in daily life. For example, a major feature of this book is the "Psychology in Action" sections found at the end of each chapter. These high-interest discussions bridge the gap between theory and practical applications. We believe that it is fair for students to ask, "Does this mean anything to me? Can I use it? Why should I learn it if I can't?" The "Psychology in Action" sections show students how to solve practical problems and manage their own behavior. This allows them to see the benefits of adopting new ideas, and it breathes life into psychology's concepts.

2: SQ4R: Integrated Support for Active Learning

Studying, rather than reading, a textbook requires the active cognitive engagement that psychologist Donald Norman (1994) calls *reflective cognition*. In his recent book, *Thinking, Fast and Slow*, Daniel Kahneman describes it as *System 2* thinking (Kahneman, 2011). Being reflective when you read a textbook involves asking yourself if you understand what you are reading, how it might relate to things you already know, what new questions your reading might trigger, and so on. The resulting elaboration of the just-read new information is, perhaps, the best way to foster understanding and form lasting memories (Anderson, 2010a; Gadzella, 1995; Goldstein, 2014).

Gateways to Mind and Behavior was the first college text with an SQ4R, active-learning format. Over the years, Dennis Coon's pioneering books have made learning psychology a rewarding experience for more than 2 million students. With their feedback, and generous help from many professors, we have continued to refine the unique features of *Gateways to Mind and Behavior*.

It is in this spirit that we have again improved the design of this edition of *Gateways to Mind and Behavior* to encourage students to become more reflective, active learners. To achieve this important pedagogical goal, the traditional SQ4R method has been updated to *reflective SQ4R*, an active-learning format designed to make studying psychology an even more rewarding experience. As students explore concepts, they are encouraged to think critically about ideas and relate them to their own experiences. Notice how the steps of the reflective SQ4R method—*survey, question, read, recite, reflect, and review*—are incorporated into the chapter design as described next.

Survey

Features at the beginning of each chapter help students build cognitive maps of upcoming topics, thus serving as advance organizers (Ausubel, 1978; Gurlitt et al., 2012). A photograph and short preview arouses interest, gives an overview of the chapter, and focuses attention on the task at hand. A *Gateway Theme* and a list of detailed *Gateway Questions* also are given to guide active reading. These questions are numbered, making it easier for students and instructors to relate the *Gateway Questions* to a matched set of learning objectives that appear throughout the materials that accompany this textbook.

The answers to *Gateway Questions* are what we think of as *Gateway Concepts*. In other words, they open intellectual pathways and summarize psychology's "big ideas." Ultimately, the *Gateway Concepts* provide a good summary of what students have learned. With these chapter-opening features, we invite students to read with a purpose and actively process information.

Question

How can questioning be built in to a textbook? Italicized *Dialogue Questions*, such as the previous sentence, are the sorts of questions that students might find themselves thinking as they begin reading a section of text. As such, they model a dialogue in which the questions and the reactions of students are anticipated—that is, *Dialogue Questions* prompt students to look for important ideas as

they read, thus promoting active learning while serving as advance organizers. They also clarify difficult points in a lively give-and-take between questions and responses.

Further, each major chapter section begins with one of the chapter *Gateway Questions*. As students read a section, they can try to discover the answers to these questions. They can then compare their answers with the ones listed in the *Gateways* chapter summary.

Read

We've made every effort to make this a clear, readable text. To further aid comprehension, we've used a full array of traditional learning aids. These include boldface terms (with phonetic pronunciations), numbered summaries, robust illustrations, summary tables, a name index, and an integrated subject index and glossary.

We have made the glossary function in this edition as powerfully as possible. The *Main Glossary*, at the end of the book, is integrated with the *Subject Index*, making it easy to link important definitions to where they are discussed in the text. As in earlier editions, all glossary items are bold and defined in the text when the term is first encountered. This aids reading comprehension because students get clear definitions when and where they need them—in the general text itself. In addition, the parallel *Running Glossary* defines key terms in the margins of the relevant pages, making it easy for students to find, study, and review important terms.

Recite

Throughout each chapter, strategically placed built-in study guides called *Knowledge Builders* give students a chance to test their recall and further develop their understanding of preceding topics. Each Knowledge Builder includes a *Recite* section, a short, noncomprehensive quiz, to help students actively process information and assess their progress. Recite questions, which are not as difficult as in-class tests, are meant to offer a sample of what students could be asked about various topics. Students who miss any items are encouraged to backtrack and clarify their understanding before reading more. In other words, completing Recite questions serves as a form of recitation to enhance learning.

Reflect

Simple recitation is usually not enough to foster deeper understanding, so in each chapter, we invite students to engage in two distinct forms of reflection, self-reflection and critical thinking:

- **Self-Reflection** Self-reflection (or self-reference) makes new information more meaningful by relating it to what is already known (Klein & Kihlstrom, 1986). We provide many opportunities for self-reflection throughout *Gateways to Mind and Behavior*. The text is written with many contemporary references, examples, and stories to make it easier for students to relate what they are reading to their own life experience. As we mentioned previously, each chapter ends with a “Psychology in Action” section that invites students to relate psychology to practical problems in their daily lives.

Discovering Psychology boxes in many chapters are “try-it” demonstrations that enable students to observe interesting

facets of their own behavior or do self-assessment exercises. In this way, students are given yet another way to link new information to concrete experiences. Finally, to help students further elaborate their new understanding, each Knowledge Builder includes a series of *Self-Reflect* questions that encourage students to connect new concepts with personal experiences and prior knowledge.

- **Critical Thinking** Being reflective about psychology involves more than self-reflectively asking, “What does this have to do with me and what I already know?” It also involves reflecting more deeply about the field. In addition, our book invites students to think critically about psychology.

The active, questioning nature of the reflective SQ4R method is, in itself, an inducement to critical thinking. In addition, *Think Critically* questions challenge students to think critically and analytically about psychology. Each is followed by a brief answer with which students can compare their own thoughts. Many of these answers are based on research and are informative in their own right. Many of the Dialogue Questions that introduce topics in the text also act as models of critical thinking.

Further, Chapter 1 explicitly discusses critical thinking skills and offers a rational appraisal of pseudopsychologies. In addition, the discussion of research methods in Chapter 1 is actually a short course on how to think clearly about behavior. Chapter 1 closes a “Psychology in Action” section that offers suggestions about how to critically evaluate claims in the popular media. Subsequent chapters include many topics related to critical thinking.

Throughout the book, many boxed highlights promote critical thinking about specific topics that students should approach with healthy skepticism. The *Critical Thinking* boxes model a reflective approach to the theoretical and empirical foundations of critical thinking in psychology. In addition, *Human Diversity* boxes encourage reflection on the variability of the human experience, *Clinical File* boxes encourage reflection on the clinical applications of psychology, and *Brainwaves* boxes foster deeper insight into the brain structures and processes that underlie psychological phenomena. Taken together, these features will help students think more reflectively about your course and the field of psychology, while they also gain thinking skills of lasting value.

Review

All key terms appear in a Running Glossary throughout the book, which aids review. We have also integrated the Main Glossary with the Subject Index. When reviewing, students can easily link definitions of concepts with the appropriate section of the book where those concepts are introduced and discussed.

“Psychology in Action” sections show students how psychological concepts relate to practical problems, including problems in their own lives. The information found in “Psychology in Action” sections helps reinforce learning by enlisting self-reference while illustrating psychology’s practical applications.

To help students further consolidate their learning, the *Gateways Summary* at the end of each chapter restates all of the major ideas presented earlier. Summaries are organized around the same

Gateway Questions found at the beginning of, and throughout, the chapter. In this way, we bring the reflective SQ4R process full circle and reinforce each chapter's learning objectives from beginning to end.

3: Integrative Themes: *The Whole Person*

No one linear chapter organization can fully capture the interconnectedness of our field. This edition of *Gateways to Mind and Behavior* continues to offer *Bridges*, clearly marked in-text links to other material relevant to the reading at hand. For example, a student reading about the Freudian theory of dreams will encounter a Bridge to a relevant discussion of psychoanalysis in a later chapter.

In addition, to convey some of this richness, we have woven a number of broad themes throughout the chapters of this book. Starting in Chapter 1, we explore the idea that human behavior is better understood when examined from three complementary perspectives: the biological perspective, the psychological perspective, and the sociocultural perspective. We express the idea that insights from one perspective can often be combined with insights from another throughout the book, in periodic, short integrative sections entitled *The Whole Person*. Furthermore, we explore this natural complexity throughout chapters in a variety of more detailed themes. Our hope is that students who read this book will gain an appreciation for the potential we all have for optimal functioning. Also, of course, we hope that they will leave *Gateways to Mind and Behavior* with emotional and intellectual tools they can use to enhance their lives. You may choose to explicitly present these themes to your students. Alternatively, you might leave these for your students to explore and unconsciously absorb.

The Biological Perspective: The Growing Importance of Neuroscience

Students are increasingly familiar with the idea that the brain and the nervous system play a role in shaping human behavior. While the chapter on *Brain and Behavior* deals with the usual topics—such as methods of studying the brain, neural functioning, synaptic transmission, the structure of the nervous system and brain, and the endocrine system—we deliberately include a discussion of the biological perspective in many of the other chapters comprising this book. One way we do this is to incorporate a *Brainwaves* box into some of those chapters. Table P.1 gives a chapter-by-chapter list of topics that are discussed from the biological perspective.

The Psychological Perspective: The Centrality of Self-Knowledge

We have threaded the psychological perspective and the centrality of self-knowledge throughout *Gateways to Mind and Behavior*. In doing so, we respond to Timothy Wilson's (2009) criticism that introductory psychology courses do not spend enough time exploring the issue of self-knowledge, despite the fact that students are terribly interested in learning more about themselves.

Our focus on active, reflective learning is also designed to improve students' self-awareness, as you may have already noted. Throughout the book, we follow the development of the self from the beginnings of self-recognition in infancy to the development of wisdom in old age. Table P.1 gives a chapter-by-chapter list of the relevant discussions.

The Sociocultural Perspective: Human Diversity, Culture, and Gender

No introductory psychology textbook would be complete without a discussion of human diversity and the multicultural, multifaceted nature of contemporary society. In *Gateways to Mind and Behavior*, students will find numerous discussions of human diversity, including differences in race, ethnicity, culture, gender, abilities, sexual orientation, and age. Too often, such differences needlessly divide people into opposing groups. Our aim is to discourage stereotyping, prejudice, discrimination, and intolerance. We've tried to make the book inclusive and sensitive to diversity issues. For instance, we have used pronouns and examples in the book to include the genders equally. In artwork, photographs, and examples, we have tried to portray the rich diversity of humanity. In addition, a boxed feature, *Human Diversity*, appears throughout the book, providing students with examples of how to be more reflective about human diversity.

In short, many topics and examples in this book encourage students to appreciate social, physical, and cultural differences and to accept them as a natural part of being human. Table P.1 gives a chapter-by-chapter list of discussions of issues of human diversity, culture, and gender.

A Full Set of Learning and Teaching Supplements

The 14th edition of *Introduction to Psychology: Gateways to Mind and Behavior* is supported by a full set of learning and teaching supplements, ranging from a traditional study guide and instructor's manual to electronic resources such as a test bank and access to a variety of web-based materials. At CengageBrain.com, students can select from over 10,000 print and digital study tools, including the option to buy individual e-chapters and eBooks. The first e-chapter is free!

Introduction to Psychology: Gateways to Mind and Behavior—What's New?

Thanks to psychology's vitality, this edition is, once again, improved in many ways.

This edition features an updated reflective SQ4R system, outlined earlier in this preface. In particular, the psychological and pedagogical rationale for this approach to reading a textbook is

TABLE P.1 Gateways to Psychology and Behavior

Chapters	Neuroscience in Psychology	Self-Knowledge in Psychology	Human Diversity and Culture in Psychology	Gender in Psychology
Chapter 1: Introducing Psychology	Neuroscience and biopsychology, the biological perspective, EEG and dreaming, links between brain and behavior, Phineas Gage and other case studies	Importance of self-knowledge, ethical research, psychological perspective, self-actualization, testing common sense, critical thinking, personal freedom, scientific thinking, introspection and cognitive unconscious, behaviorism, humanism, eclecticism	Cultural psychology, human diversity, appreciating social and cultural differences, the impact of culture, cultural relativity, a broader view of diversity (WEIRD), human diversity, and representative samples	The psychology of gender, women in research, gender and social norms
Chapter 2: Brain and Behavior	Neural function, synaptic transmission, neurotransmitters, parts of the nervous system and brain, localization of function, methods of studying the brain, Human Connectome Project, endocrine system, handedness	Brain and self, localization of function, including self, self-directed neuroplasticity, locked-in syndrome, truth and lies, intelligence, frontal lobes, strokes and self, split-brain operation, hemispheres and self, mirror neurons, thinking styles, emotions, turn-taking in language development	Biological treatments for people with spinal injuries, hypopituitary dwarfism, acromegaly, handedness and laterality, brain interfaces for people with total paralysis, diagnosis of neurological conditions, cultural experiences shape the brain, handedness and culture	Men's and women's brains, sex differences in lateralization, hormonal differences, sex, and steroids
Chapter 3: Human Development	Biological factors in development, readiness, maturation, prenatal biological influences, epigenetics, sensitive periods, reaction range, biological predisposition to language, cognitive stages and brain maturation, puberty	Temperament, newborn sensitivity, imitation, attachment, terrible twos, egocentrism, theory of minds, self-awareness, self-recognition, search for identity, moral development, role confusion, self-acceptance, personal growth, self-esteem, subjective well-being	Culture and evolution, ethnic differences in child rearing, relationship between culture and babbling, parentese in different cultures, social cultural influences on cognitive development, scaffolding, zone of proximal development, adolescent status and culture, diversity and the adolescent search for identity, ethnicity and personal identity, culture and moral reasoning, ageism and myths about the elderly	Prenatal development, maternal and paternal parenting styles, emotional attachment patterns, gender-role development, gender and puberty, male and female moral reasoning, male and female midlife transitions
Chapter 4: Sensation and Perception	Sensory filtering, transduction, sensory localization in the brain, electrical stimulation of sensory experiences in the brain and sensory nerves, physiology of various sense receptors and sensory pathways, sensory gating, neuromatrix theory, perceptual construction and learning	Perceptual experiences, psychophysics, reality testing, perceptual awareness, perceptual learning, perceptual habits and top-down processing	The "other race" effect in facial recognition, culture and the recognition of pictorial depth cues, culture and the Müller-Lyer illusion, cross-racial perceptions (eyewitness accuracy), cultural differences in perception	Sex differences in color deficiency
Chapter 5: States of Consciousness	Disorders of consciousness, EEG, stages of sleep, REM and dreaming, biological theories of sleep and dreaming, effects of "sleeping pills," narcolepsy, EEG and hypnosis, brain scans and meditation, how psychoactive drugs affect the brain and neurotransmitters, drug addiction	Consciousness, self-awareness and heightened self-awareness, self-control under hypnosis, autosuggestion, self-control, mindfulness, analyzing dreams, lucid dreaming	States of consciousness and culture, culture and interpretations of dreams and hypnopompic imagery, the cultural context of drug use	REM sleep in men and women, caffeine and pregnancy, effects of alcohol on sexual performance

(Continued)

TABLE P.1 Gateways to Psychology and Behavior (continued)

Chapters	Neuroscience in Psychology	Self-Knowledge in Psychology	Human Diversity and Culture in Psychology	Gender in Psychology
Chapter 6: Conditioning and Learning	Eyeblink conditioning, the brain, and diagnosis of minimal consciousness, conditioned emotional reactions and the amygdala, primary reinforcement and intracranial self-stimulation	Awareness of cognitive learning versus the unconscious nature of associative learning, self-managed behavior	Spanking and culture	Effects of media on children's behavior
Chapter 7: Memory	Amnesia and types of memory, cerebellum and procedural memory, brain trauma and amnesia, consolidation, long-term potentiation, role of hippocampus in declarative memories, limbic and flashbulb memories, cortex and long-term memory	Episodic memory, elaborative encoding, self-reference and memory	Aging and memory, cultural influences on memory, eyewitnesses and cross-racial recognition, labeling, and the ability to remember people from other social groups	Recovered memories versus false memories
Chapter 8: Cognition, Language, and Creativity	Imagery and the brain, creativity, and mental illness	Imagery, kinesthetic images, cognitive effects of bilingualism, insight, intuition, creativity	Linguistic misunderstandings between cultures, the pros and cons of bilingualism, cultural differences in the use of phonemes, the deaf community and gestural languages	Stereotypes and cognition
Chapter 9: Intelligence	Lou Gehrig's disease and intelligence, organic causes of mental disability, heredity and intelligence, brain areas and intelligence, RT and intelligence	Giftedness, self-respect and intellectual disability, multiple intelligences, wisdom	Age and IQ, the developmentally disabled, race, culture, ethnicity, and intelligence, cultural differences in intelligence (as taught to children), Flynn effect, culture-fair intelligence testing	Fragile X, sex differences in IQ, men, women, and the definition of intelligence
Chapter 10: Motivation and Emotion	Needs as internal deficiencies, biological motives, homeostasis, circadian rhythms, role of melatonin, biological factors in hunger, hypothalamus and thirst, types of thirst, estrus, sex hormones, physiological changes and emotion, physiological arousal, moods, and the limbic system, including the amygdala, role of autonomic nervous system and arousal, parasympathetic rebound, polygraphy, brain scans and lying, basic emotions	Intrinsic motivation and creativity, meta-needs, self-actualization, emotional expression and health, higher emotional intelligence	Cultural values and food preferences, culture, ethnicity, and dieting, pain avoidance and cultural conditioning, the influence of culture on emotional expressions, cultural differences in the occurrence of emotion, cultural differences in facial expressions, cultural learning and body language	Eating disorders and gender, how hormones affect sex drive, gender differences in emotion

<p>Chapter 11: Sex, Gender, and Sexuality</p>	<p>Biology of sexual development, sexually antagonistic selection, prenatal sex typing, genes, the brain and sexual orientation, prenatal biological basing effect, differing skills of men and women, testosterone and sexual behavior</p>	<p>Androgyny and self-expression, gender role strain, sexual self-awareness, sexually responsible behavior, communication skills</p>	<p>Sexual orientation, asexuality, gender role stereotypes, culture and gender roles, androgyny, gender variance, casual sex in the United States, sexual attitudes and behavior across cultures, oversexualization of children, rape culture, AIDS worldwide</p>	<p>Psychosocial differences between men and women, intersexuality, controversy about gender differences in ability (left brain/right brain), gender roles, gender-role stereotypes, culture and gender roles, gender-role socialization, androgyny, sexual arousal (after watching erotic films), sexual activity, sexual orientation, role of hormones in sex drive, gender differences in sexual response, sexual double standard, gender-role stereotyping and rape, rates of HIV/AIDS infection and death</p>
<p>Chapter 12: Personality</p>	<p>Behavioral genetics and personality, Big Five traits, brain systems, and neurotransmitters, limbic system and the unconscious</p>	<p>Long-term consistency of self, self-concept, self-esteem, self-confidence, Freudian ego, free choice, self-actualization, positive personality traits, self-image, congruence (between self-image and ideal self), possible selves, self-efficacy, self-reinforcement</p>	<p>Acculturative stress, character and culture, self-esteem and culture, common traits and culture</p>	<p>Social learning of male and female traits, Oedipus versus Electra complexes</p>
<p>Chapter 13: Health, Stress, and Coping</p>	<p>Stress reaction, general adaptation syndrome, psychoneuroimmunology, psychosomatic disorders, biofeedback</p>	<p>Self-screening for illnesses, self-control, wellness, cognitive appraisal, coping, hardiness, optimism, happiness, stress management, humor</p>	<p>Culture shock and acculturative stress, scapegoating of ethnic group members</p>	<p>Sex differences in seeking social support</p>
<p>Chapter 14: Psychological Disorders</p>	<p>Law and the brain, organic psychosis, Alzheimer's disease, hereditary and biological causes of schizophrenia, the schizophrenic brain, biology and depression, the psychopathic brain, diathesis-stress model</p>	<p>Self-destructive behaviors, nonconformity, subjective discomfort, loss of self, self-criticism, self-defeating thinking patterns</p>	<p>How culture affects judgments of psychopathology, culture-bound syndromes from around the world, ethnic group differences in psychopathology</p>	<p>How gender affects judgments of psychopathology, gender differences in rates of anxiety disorders, sex differences in rates of clinical depression, gender differences in suicide (attempt and completion)</p>
<p>Chapter 15: Therapies</p>	<p>Drug therapies, ECT, brain stimulation therapy, psychosurgery, transcranial magnetic stimulation</p>	<p>Insight, personal growth and psychotherapy, human potential, choosing to become, courage, overcoming irrational beliefs, the fully functioning person, behavioral self-management</p>	<p>Cultural issues in counseling and psychotherapy, culturally aware therapists</p>	

(Continued)

TABLE P.1 Gateways to Psychology and Behavior (continued)

Chapters	Neuroscience in Psychology	Self-Knowledge in Psychology	Human Diversity and Culture in Psychology	Gender in Psychology
Chapter 16: Social Thinking and Social Influence	"Brainwashing"	Social comparison, self-disclosure, self-assertion solitude	Culture, social roles, in-groups versus out-groups, social status, and, power, attitudes	Upward comparison among women, self-handicapping and gender
Chapter 17: Prosocial and Antisocial Behavior	Homogamy, evolution, and mate selection, aggression, biology, and the brain	Prosocial behavior, superordinate goals, overcoming stereotypes and prejudice, self-identity	Male-female differences in mate preferences, racial prejudice and discrimination, ethnocentrism, social stereotypes, cultural differences in hostility and aggression, symbolic prejudice, rejection and demonization of out-groups, experiments in creating and reducing prejudice, multiculturalism, breaking the prejudice habit, cultural awareness	Influence of physical attractiveness, male-female differences in mate preferences, evolutionary perspectives on male and female mate selection, levels of testosterone and aggression
Chapter 18: Applied Psychology	Self-management, communication skills, beyond self-interest, sports and physical self-esteem, peak performance, flow	Corporate culture, cultural differences in norms governing personal space, attentional overload in urban settings, resource consumption in different cultures, universal instructional design	Gender role stereotypes and leadership, women as leaders	

now better described throughout the textbook. The result will foster a better link between remembering the material in the book on the one hand, and thinking reflectively and critically about psychology on the other hand.

In addition, the 14th edition of *Introduction to Psychology: Gateways to Mind and Behavior* features some of the most recent and interesting information in psychology, drawing on extensive updates and expansions. More than two-thirds of the expanded reference list is dated 2000 or newer. The following annotations highlight the major new topics and features that appear in this edition.

Introduction: The Psychology of Reflective Studying

- The introduction has been updated and reorganized to better explain the reflective SQ4R system.
- The topic of self-regulated learning is now identified as reflective learning and is explicitly linked to elaborative processing in the opening section of the introduction.

Chapter 1: Psychology, Critical Thinking, and Science

- This chapter has again been revised and reorganized to make integration between critical thinking, the scientific method, and psychology easier for students to follow.
- The importance of objective (third-person) study in psychology is highlighted in a new Critical Thinking box, “Position D: On Stockings and Murders,” which illustrates the limitations of subjective (first-person) introspective access.
- The role of falsification in scientific research is now better highlighted in a dedicated section.
- The section on the scientific method is now organized around a new, more recent research example.
- The discovery of imageless thought is now discussed as a key historical problem with introspection, better clarifying why introspection gave way to behaviorism.
- The rise of cognitive behaviorism and cognitive psychology is now covered in the section “A Brief History of Psychology—Psychology’s Family Album.”

Chapter 2: Brain and Behavior

- A dramatic new opening vignette illustrates the central role that our nervous systems play in our lives.
- Experience has shown us that students find it easier to grasp the overall organization of the nervous system before tackling the details of neuronal and synaptic functioning. We have accordingly revised the order of coverage in the opening section.
- The Human Connectome Project, including some new images, and the importance of interconnections in the brain, is now discussed.
- The Human Diversity box, “His and Her Brains,” has been updated to include new evidence that men’s brains are more densely interconnected from front to back, while women’s

brains are more densely interconnected from left to right.

- The need for objective (rather than introspective) research methods to study the nervous system is highlighted.

Chapter 3: Human Development

- The role of epigenetics in development is now made explicit.
- Material on infant and early child development has been reorganized and streamlined.
- The discussion of emotional development in infants has been rewritten and more clearly linked to the concept of basic emotion developed in Chapter 10, “Motivation and Emotion.”
- The section on the transition from adolescence to adulthood has been streamlined.
- The section on moral development includes new material on moral emotions and moral thinking.
- A new “Psychology in Action” section now discusses subjective well-being.

Chapter 4: Sensation and Perception

- The failure of subjective introspection to yield insight into sensory processes is highlighted as part of the discussion of psychophysics.
- Selective attention is now covered early in this chapter, allowing for a productive contrast between unconscious and uncontrollable data reduction processes like sensory coding and controllable processes like selective attention.
- The section on the Gestalt principles of perception has been reordered for greater clarity.
- The discussion of illusions has been streamlined and simplified.
- The last two sections of this chapter have been reordered so that the “Psychology in Action” feature now invites students to think critically about the (im)possibility of extrasensory perception.

Chapter 5: States of Consciousness

- Based on reader feedback, the coverage of topics in this chapter has been reordered. Both hypnosis and meditation are now discussed in streamlined sections before sleep and dreaming.
- Sensory deprivation (“floating” or restricted environmental stimulation therapy) is now treated as a type of meditation and is introduced as a boxed feature.
- A new section discusses disorders of consciousness.
- The material on the functions of sleep has been reworked and clarified.
- A new section on patterns of drug use now begins with a helpful distinction between instrumental and recreational use.
- All drug abuse statistics have been updated.
- A note about the benefits of legal psychoactive drug use is now included.
- A new section on narcotics has been added.
- The treatment of marijuana has been updated to include a discussion of endocannabinoid receptors and a new feature box, “Medical Marijuana?”

Chapter 6: Conditioning and Learning

- The use of the term *reinforcement* is now restricted to operant conditioning; accordingly, the term *respondent reinforcement* has been eliminated.
- Punishment is now referred to, more traditionally, as *positive punishment* and *negative punishment* (or *response cost*).
- Material on stimulus control is now treated in a separate major section of this chapter.
- Material on feedback is now covered in the section on cognitive learning.
- The section on modeling in the media has been entirely revised, reflecting a growing awareness that viewing violent media may not be as harmful as previously thought.

Chapter 7: Memory

- The opening section on stages of memory has been reorganized and streamlined to make it easier to understand the Atkinson-Schiffrin model, as have the following sections on short-term and long-term memory.
- The section on exceptional memory has also been reorganized and streamlined.
- The section on photographic memory and eidetic imagery has been rewritten for greater clarity.
- Relevant material has been rewritten to sharpen the distinction between “natural” and learned memory superiority, as well as between “natural” and memory strategies and artificial ones (mnemonics).

Chapter 8: Cognition, Language, and Creativity

- A new chapter opener features creativity and quadrotor swarms.
- The first section now introduces the distinction between experiential (Type 1) and reflective (Type 2) processing and includes a new illustrative figure.
- The Stroop effect is now clearly contextualized as involving automatic (Type 1) processing.
- Problem solving and creative thinking are now contrasted as normally reflective and experiential forms of processing.
- The section on experts versus novices includes a discussion of experiential processing in experts.
- The chapter now elaborates on the link between creativity and mental illness.

Chapter 9: Intelligence

- The section on calculating IQ scores has been streamlined.
- The section on the relationship of IQ with sex, age, and occupation has been reorganized.
- Material on the Flynn effect has been reworked into a new feature box entitled “Are You Smarter Than Your Grandparents?”
- Attempts to increase intelligence through early childhood education are now addressed.
- The section on artificial intelligence has been rewritten.

Chapter 10: Motivation and Emotion

- The material on circadian rhythms has been rewritten and reorganized; now includes a section entitled “Resetting Circadian Rhythms for Better Sleep.”
- The feature box “Behavioral Dieting” has been rewritten.
- The term *primary emotions* has been replaced by the more current phrase *basic emotion* and is more fully defined. Basic emotions are now linked more clearly to subcortical limbic structures and experiential processing.
- The section “Emotion and the Brain” has been rewritten and now more clearly highlights the “two-layer” nature of emotional processing.

Chapter 11: Sex, Gender, and Sexuality

- The section on sexual orientation has been rewritten and updated.
- Asexuality is now treated as a normal variant.
- The feature box “Genes, Hormones, and Sexual Orientation” now includes a discussion of *sexually antagonistic selection*, a provocative theory of how homosexuality can be genetically transmitted.
- The concept of gender role strain is now discussed.
- A new feature box, “NoFap and the Supernormal,” discusses the idea that pornography constitutes a *supernormal* stimulus and can, consequently, be considered “addictive.”
- The section on rape has been rewritten.
- The section on paraphilias makes it clear that a psychological problem arises only when sexual behaviors, unusual or otherwise, create psychological distress.

Chapter 12: Personality

- Secure and fragile self-esteem are now differentiated.
- The material on how personality is measured now appears earlier in the chapter.
- An overview now precedes the various personality theories presented in the chapter.
- A new feature box, “Oh, Oh, Seven,” introduces the dark triad of personality traits and the Dirty Dozen scale used to measure it.
- The idea that trait extremes may be maladaptive is contrasted with the idea that less extreme trait expressions may be *subclinical*.
- The discussion of the classification of traits has been streamlined.
- The section on Alfred Adler now explicitly introduces idea of the *inferiority complex*.

Chapter 13: Health, Stress, and Coping

- This chapter has been extensively reworked and reorganized for greater clarity. Health statistics have been updated throughout.
- The chapter now begins with a contrast between the medical model and the biopsychosocial model. The definition of

health psychology has been more clearly broadened to include cognitive and behavioral factors.

- The issue of health compliance is now raised.
- The Human Diversity box, “So You Think You’re Poor,” features new information about the effect of relative poverty on health.
- Coping styles are discussed in a new major section of the chapter.
- Wellness is now defined in terms of subjective well-being.

Chapter 14: Psychological Disorders

- Mental health statistics have been updated throughout the chapter.
- This chapter has been updated to reflect the DSM-5.
- A new feature box, “Don’t Blame Me, Blame My Brain,” introduces the growing controversy about the role that neuroscience should play in legal cases.
- A new section on comorbidity has been added, including a distinction between primary and secondary problems.
- To eliminate confusion, the labels *organic mental disorder* and *organic psychoses* are no longer stressed because they are not actual DSM-5 categories. Other changes to labels and associated text coverage, such as backgrounding the DSM-4 fourfold categorization of schizophrenia, also have been undertaken.
- The relationship between mental illness and violence has been clarified.
- The “Psychology in Action” section, “Suicide—A Permanent Solution?” has been reorganized and updated.

Chapter 15: Therapies

- This chapter has been extensively reorganized and rewritten. In particular, an updated section, “Dimensions of Therapy—The Many Paths to Health,” offers a framework for categorizing types of therapy before the chapter goes on to discuss particular therapies.
- Behavioral therapies are now discussed before cognitive therapies.
- A new section discusses cognitive behavior therapy.
- The two successive sections on behavior therapies are now more clearly identified as being based on classical and operant conditioning, respectively.
- The section on medical therapies has been updated and now includes a section on transcranial magnetic stimulation.
- The “Psychology in Action” section, “Facing Mental Health Issues,” now includes material on basic counseling skills previously presented elsewhere in the chapter.

Chapter 16: Social Thinking and Social Influence

- The chapter-opening vignette has been updated to highlight the possibility that social factors can influence low-level perceptual processes.
- In a new, streamlined section, social status and social power are more clearly differentiated.
- The section on compliance has been streamlined.

- The sections on groupthink and brainwashing have been rewritten to broaden the contemporary application of these important concepts.
- The “Psychology in Action” section, “Assertiveness—Stand up for Your Rights,” has been rewritten to speak directly to students about assertiveness, rather than assertiveness training.

Chapter 17: Prosocial and Antisocial Behavior

- The chapter-opening vignette has been changed and better integrated throughout the chapter itself.
- The traditional evolutionary view that humans are primarily competitive has been replaced by the more contemporary view that humans are both competitive and cooperative “by nature.”
- The hormone oxytocin is identified with prosocial behaviors.
- A new feature box, “What’s Your Attachment Style?” relocates and reframes existing material on attachment in adulthood.
- The discussion of instinctual and biological factors in aggression has been updated and streamlined.
- The sections on media violence have been rewritten and updated.
- The section on prejudice has been reorganized, beginning with a new section, “Forms of Prejudice.”

Chapter 18: Applied Psychology

- The opening vignette on new digital developments has been updated.
- A new section discusses transformational leadership.
- The term *flexplace* is introduced as a companion term for *flextime*.
- The section in environmental psychology has been reorganized and rewritten. Environmental effects on humans are treated separately from human effects on the environment.
- The discussion of human resource consumption measurement, in terms of footprints, is updated and clarified.
- The topic of psychology and the law is now discussed before educational psychology.
- The “Psychology in Action” section, “Human Factors Psychology—Who’s the Boss Here?” includes a new table on topics of interest to human factors psychologists and updates coverage of interface technologies, such as Google Glass.

Appendix: Behavioral Statistics

- A new opening vignette follows a student grappling with statistics, and the vignette is woven throughout the appendix. The result is a more engaging approach to traditionally dry material.

A Complete Course—Teaching and Learning Supplements

A rich array of supplements accompanies *Introduction to Psychology: Gateways to Mind and Behavior*, including several that employ the latest technologies. These supplements are designed to make teaching and learning more effective. Many are available free to professors

or students. Others can be packaged with this text at a discount. For more information on any of the listed resources, please call the Thomson Learning™ Academic Resource Center at 800-423-0563.

MindTap for *Introduction to Psychology: Gateways to Mind and Behavior*

MindTap for *Introduction to Psychology: Gateways to Mind and Behavior* engages and empowers students to produce their best work consistently. By seamlessly integrating course material with videos, activities, apps, and much more, MindTap creates a unique learning path that fosters increased comprehension and efficiency.

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Student Support Materials

Introductory students must learn a multitude of abstract concepts, which can make a first course in psychology difficult. The following CDs from Wadsworth provide a wealth of engaging modules and exercises.

PsychNow!™ Interactive Experiences in Psychology 2.0

This exciting CD-ROM was created by Joel Morgovsky, Lonnie Yandell, Elizabeth Lynch, and project consultant Dennis Coon. At the end of each chapter of this text, students will find a list of PsychNow! modules they can access for additional, “hands-on” learning. PsychNow! provides stunning graphics and animations, interesting video clips, interactive exercises, and web links, bringing psychol-

ogy to life. With PsychNow!, students can do more than just read about a topic—they can read, watch, listen, react, and reflect on the meaning of their own responses. PsychNow!, which is available for Macintosh and Windows, contains 39 fully interactive modules that will enhance their understanding, 8 “Interact Now” Collaborative Labs, and “Quiz Game Now” quizzes. Students can also conduct 15 different “Interactive Research Experiments” in areas such as neurocognition, perception, memory, concepts, and imagery. *PsychNow! 2.0* can be packaged with this text for a discount; contact your sales representative for details (ISBN: 0-534-59046-2)

Sniffy™ the Virtual Rat, Lite Version 2.0

There's no better way to master the basic principles of learning than working with a real laboratory rat. However, this is usually impractical in introductory psychology courses. *Sniffy the Virtual Rat* offers a fun, interactive alternative to working with lab animals. This innovative and entertaining software teaches students about operant and classical conditioning by allowing them to condition a virtual rat. Users begin by training Sniffy to press a bar to obtain food. Then they progress to studying the effects of reinforcement schedules and simple classical conditioning. In addition, special “Mind Windows” enable students to visualize how Sniffy's experiences in the Skinner box produce learning. The Sniffy CD-ROM includes a Lab Manual that shows students how to set up various operant and classical conditioning experiments. *Sniffy™ the Virtual Rat, Lite Version 2.0* may be packaged with this text for a discount (ISBN: 0-534-63357-9)

Essential Teaching Resources

As every professor knows, teaching an introductory psychology course is a tremendous amount of work. The supplements listed here should not only make life easier for you, they should also make it possible for you to concentrate on the more creative and rewarding facets of teaching.

Cengage Online Test Bank Powered by Cognero

Cognero is a flexible, online system that allows you to author, edit, and manage test bank content as well as create multiple test versions in an instant. You can deliver tests from your school's learning management system, your classroom, or wherever you want.

Online Instructor's Manual

The Instructor's Manual (IM) contains a variety of resources to aid instructors in preparing and presenting text material in a manner that meets their personal preferences and course needs. It presents chapter-by-chapter suggestions and resources to enhance and facilitate learning.

Online PowerPoint to Support Lectures

These vibrant Microsoft® PowerPoint® lecture slides for each chapter assist you with your lecture by providing concept coverage using images, figures, and tables directly from the textbook.

Supplementary Books

No text can cover all of the topics that might be included in an introductory psychology course. If you would like to enrich your course, or make it more challenging, the Wadsworth titles listed here may be of interest.

Challenging Your Preconceptions: Thinking Critically About Psychology, Second Edition

This paperbound book (ISBN: 0-534-26739-4), written by Randolph Smith, helps students strengthen their critical-thinking skills. Psychological issues such as hypnosis and repressed memory, statistical seduction, the validity of pop psychology, and other topics are used to illustrate the principles of critical thinking.

Writing Papers in Psychology: A Student Guide

The Ninth Edition of *Writing Papers in Psychology* (ISBN: 0-534-52395-1), by Ralph L. Rosnow and Mimi Rosnow, is a valuable “how to” manual for writing term papers and research reports. This new edition has been updated to reflect the latest American Psychological Association (APA) guidelines. The book covers each task with examples, hints, and two complete writing samples. Citation ethics, how to locate information, and new research technologies are also covered.

Cross-Cultural Perspectives in Psychology

How well do the concepts of psychology apply to various cultures? What can we learn about human behavior from cultures different from our own? These questions lie behind a collection of original

articles written by William F. Price and Rich Crapo. The fourth edition of this book (ISBN: 0-534-54653-6) contains articles on North American ethnic groups, as well as cultures from around the world.

Summary

We sincerely hope that both teachers and students will consider this book and its supporting materials a refreshing change from the ordinary. Creating it has been quite an adventure. In the pages that follow, we believe students will find an attractive blend of the theoretical and the practical, plus many of the most exciting ideas in psychology. Most of all, we hope that students using this book will discover that reading a college textbook can be entertaining and enjoyable.

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Introduction

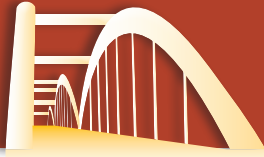
The Psychology of Reflective Studying



JGI/Daniel Grill/Blend Images/Alamy

Gateway THEME

It is possible to study more efficiently and effectively by being a reflective learner who engages in active processing.



Gateway QUESTIONS

- I-1 *What is reflective learning?*
- I-2 *What is the best way to read a textbook?*
- I-3 *How can learning in class be improved?*
- I-4 *What is the best way to study?*
- I-5 *What are some ways to be a more effective test-taker?*
- I-6 *Can digital media help with reflective processing?*
- I-7 *How can procrastination be overcome?*

Well, Hello There!

As your authors, we are delighted to welcome you to the “manual” for this textbook. No! Don’t skip this, please. Read on. Few of us prefer to start a new adventure by reading a manual. We just want to step off the airplane and begin our vacation, get right into that new computer game, or start using our new camera or smartphone. Please be patient. Successfully learning psychology depends on how *reflective* you are as you read your textbook, listen during your classes, study for exams, and then write them.

Students who get good grades tend to work more reflectively, or smarter, not just longer or harder. They also tend to understand and remember more of what they’ve learned long after their exams are over. Psychology is for their lives, not just for their exams. In this preface, we explore a variety of ways to become more reflective learners.

I-1 Reflective Learning— Academic All-Stars

Gateway QUESTION I-1:

What is reflective learning?

You have undoubtedly spent the occasional evening vegging out in front of the television. It probably was fun, but you may have noticed that you didn't think too much about what you were watching, and your subsequent memories are not detailed. You were engaging in **experiential processing**, more or less passively, effortlessly, and automatically soaking up the experience (Kahneman, 2011; Norman, 1994). There is nothing wrong with most experiential processing; we humans rely on it frequently. As we will see in later chapters, most perception, as well as some learning, intuition, and creativity, depends in part on experiential processing.

Experiential processing is appropriate for entertainment, but it doesn't work well if your goal is to learn course material. To see why this might be the case, think back to, say, a recent job interview. It is highly unlikely that you got through the interview by relying on experiential processing alone (and even less likely that you landed the job if you did). Instead, you actively and carefully listened to the questions and put some serious effort into thinking through the implications of answering in different ways before responding. No drifting off here; you were focused and controlled until you left the interview, when you likely breathed a much-deserved sigh of relief.

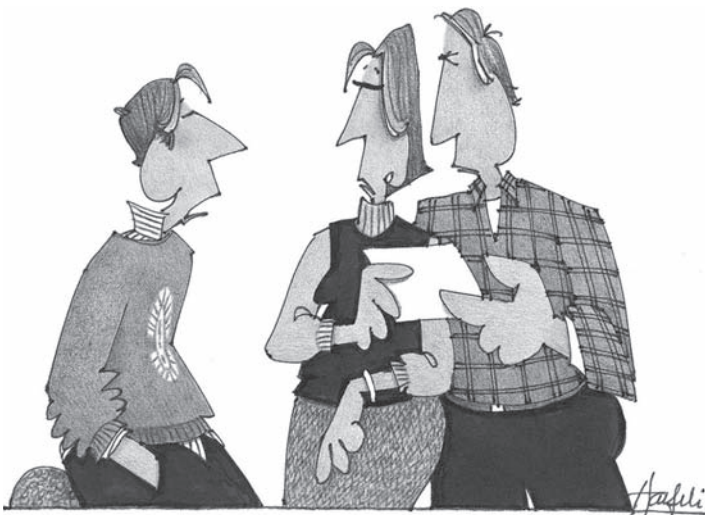
By reacting mindfully (Siegel, 2007), you engaged in **reflective processing** (Kahneman, 2011; Norman, 1994). Rather than just having an experience, you *actively thought* about it. Reflective

processing is involved whenever experiential processing is not enough and you must actively and effortfully control your thoughts to focus on the matter at hand.

Reflective learning occurs when you engage in deliberately reflective and active self-regulated study (Anthony, Clayton, & Zusho, 2013; Mega, Ronconi, & De Beni, 2014). Simply put, you will learn more from a textbook, a lecture, or a website if you mindfully reflect on what you are experiencing. You will also remember it better. (In memory terms, the result of reflective learning is called *elaborative processing*, which you will learn more about in Chapter 8.) Here, in general, is how you can change passive studying into reflective learning:

1. *Set specific, objective learning goals.* Begin each learning session with specific goals in mind. What knowledge or skills are you trying to master? What do you hope to accomplish (Pychyl, 2013)?
2. *Plan a learning strategy.* How will you accomplish your goals? Make daily, weekly, and monthly plans for learning. Then put them into action.
3. *Be your own teacher.* Effective learners silently give themselves guidance and ask themselves questions. For example, as you are learning, you might ask yourself, "What are the important ideas here? What do I remember? What don't I understand? What do I need to review? What should I do next?"
4. *Monitor your progress.* Reflective learning depends on self-monitoring. Exceptional learners keep records of their progress toward learning goals (pages read, hours of studying, assignments completed, and so forth). They quiz themselves, use study guides, and find other ways to check their understanding while learning.
5. *Reward yourself.* When you meet your daily, weekly, or monthly goals, reward your efforts in some way, such as going to a movie or downloading some new music. Be aware that self-praise also rewards learning. Being able to say "Hey, I did it!" can be rewarding. In the long run, success, self-improvement, and personal satisfaction are the real payoffs of learning.
6. *Evaluate your progress and goals.* It is a good idea to frequently evaluate your performance records and goals. Do any specific areas of your work need improvement? If you are not making good progress toward long-range goals, do you need to revise your short-term targets?
7. *Take corrective action.* If you fall short of your goals, you may need to adjust how you budget your time. You may also need to change your learning environment to deal with distractions such as browsing the web, daydreaming, talking to friends, or testing the limits of your hearing with your iPod.

If you discover that you lack certain knowledge or skills, ask for help, take advantage of tutoring programs, or look for information beyond your courses and textbooks. Knowing how to reflectively enhance learning can be a key to lifelong enrichment and personal empowerment (Van Blerkom, 2012).



"I'm too busy going to college to study."

William Haefeli/cartoonbank.com

I-2 Reflective Reading—How to Tame a Textbook

Gateway QUESTION I-2:

What is the best way to read a textbook?

How can I be more reflective while reading? One powerful way to be more reflective is through **self-reference**. As you read, relate new facts, terms, and concepts to your own experiences and information that you already know well. Doing this will make new ideas more personally meaningful and easier to remember. **Critical thinking** is another powerful way to be more reflective. Critical thinkers pause to evaluate, compare, analyze, critique, and synthesize what they are reading (Chaffee, 2015). You should, too. In Chapter 1, we will learn how to think critically about psychology.

These ways to improve learning can be combined into the **reflective SQ4R method**. SQ4R stands for *survey, question, read, recite, reflect*, and *review*, which are six steps that can help you get more out of your reading:

S = Survey. Skim through a chapter before you begin reading it. Start by looking at topic headings, figure captions, and summaries. Try to get an overall picture of what lies ahead. Because the chapters in this book are organized into short sections, you can survey just one section at a time if you prefer.

Q = Question. As you read, reword each major topic heading into one or more questions. For example, when you read the heading “Stages of Sleep,” you might ask: “Is there more than one stage of sleep?” “What are the stages of sleep?” “How do they differ?” Asking questions prepares you to read with a purpose.

R1 = Read. The first R in SQ4R stands for *read*. As you read, look for answers to the questions you asked. Read in short bites, from one topic heading to the next, and then stop. For difficult material, you may want to read only a paragraph or two at a time.

R2 = Recite. After reading a small amount, you should pause and recite or rehearse. Try to mentally answer your questions. Also, make brief notes to summarize what you just read. Making notes will reveal what you do and don’t know, so you can fill in gaps in your knowledge (Peverly et al., 2003).

If you can’t summarize the main ideas, skim over each section again. Until you can understand and remember what you just read, there’s little point to reading more. After you’ve studied a short “bite” of text, turn the next topic heading into questions. Then read to the following heading. Remember to look for answers as you read and to recite or take notes before moving on. Ask yourself repeatedly, “What is the main idea here?” Repeat the question–read–recite cycle until you’ve finished an entire chapter (or just from one Knowledge Builder to the next, if you want to read shorter units).

● Figure I.1 The reflective SQ4R method.

The reflective SQ4R method promotes active learning and information processing. You begin with a survey of the chapter or section, depending on how much you plan to read. You then proceed through cycles of questioning, reading, reciting, and reflecting, and conclude with a review of the section or the entire chapter.

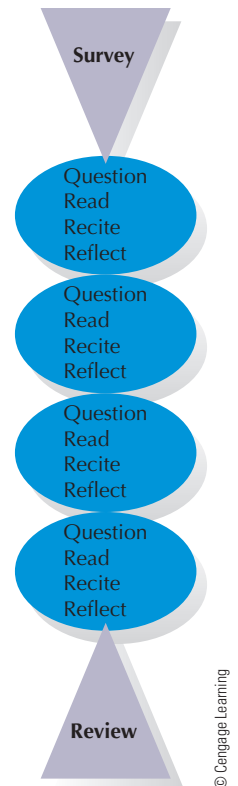
R3 = Reflect. As you read, reflect on what you are reading. As stated earlier, two powerful ways to do this are self-reference and critical thinking. This is the most important step in the reflective SQ4R method. The more mindfulness and genuine interest that you can bring to your reading, the more you will learn (Hartlep & Forsyth, 2000; Wong, 2015).

R4 = Review. When you’re done reading, skim back over a section or the entire chapter, or read your notes. Then check your memory by reciting and quizzing yourself again. Try to make frequent, active review a standard part of your study habits (see ● Figure I.1).

Does this really work? You bet! Using a reflective reading strategy improves learning and course grades (Taraban, Rynearson, & Kerr, 2000). It also results in enhanced long-term understanding. Simply reading straight through a textbook chapter can give you intellectual indigestion. That’s why it’s better to stop often to survey, question, read, recite, reflect, and review, actively digesting information as you read.

How to Use Introduction to Psychology: Gateways to Mind and Behavior

You can apply the reflective SQ4R method to any course of study. However, we have specifically designed this textbook to help you *actively* learn psychology. In fact, this introduction has been



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Experiential processing Thought that is passive, effortless, and automatic.

Reflective processing Thought that is active, effortful, and controlled.

Reflective learning Deliberately reflective and active self-guided study.

Self-reference The practice of relating new information to prior life experience.

Critical thinking An ability to evaluate, compare, analyze, critique, and synthesize information.

Reflective SQ4R method An active study-reading technique based on these steps: survey, question, read, recite, reflect, and review.

designed just like the rest of the book. Please consider trying out the following suggestions as you work through this section:

Survey

Each chapter opens with a chapter survey that includes a *Gateway Theme*, a short opening story introducing what will be covered, and a list of *Gateway Questions*. You can use these features to identify important ideas as you begin reading. The short opening story should help interest you in the topics that you will be reading about. The *Gateway Theme* and *Gateway Questions* are a good guide to the kinds of information that you should look for as you read. In fact, answers to the *Gateway Questions* are a good summary of the core concepts in each chapter. If, years from now, you still remember those *Gateway* concepts, your authors will be happy indeed.

After you've studied these features, take a few minutes to do your own survey of the chapter, including the figure captions and chapter-ending material. You should also notice that each major chapter heading is accompanied by a *Gateway Question*. Taken together, this will help you build a mental map of upcoming topics.

Question

How can I use the reflective SQ4R method to make reading more interesting and effective? Try to actively interact with your textbooks as you read. Perhaps the most effective way to do this is to ask yourself a lot of questions as you read. For example, as noted earlier, major chapter sections begin with headings; try turning them into questions. One Chapter 1 heading is “Critical Thinking—Take It with a Grain of Salt.” Turn this into a question that occurs to you, such as “Why should I be skeptical of what I read?” If you read with an aim toward answering your questions, you will be much more likely to get the key points of what you are reading. *Dialogue Questions* like the one that began this paragraph will also help you focus on seeking information as you read. These questions are much like those running through the minds of students like you as they read this book. Similarly, the *Gateway Questions* are repeated throughout each chapter to help you recognize key topics. Try to anticipate these questions. Even better, be sure to ask your own questions.

Read

As an aid to reading, important terms are printed in **boldface type** and defined when they first appear. (Some are followed by pronunciations—capital letters show which syllables are accented.) You'll also find a *running glossary* in the lower corner of pages that you are reading, so you never have to guess about the meaning of technical terms. If you want to look up a term from a lecture or another chapter, check the main *Subject Index/Glossary*. This mini-dictionary is located near the end of the book. In addition, figures and tables will help you quickly grasp important concepts.

Recite

To help your “digestion,” each chapter is divided into shorter “bites” that end with a brief built-in study guide called a *Knowledge Builder*. After reaching a *Knowledge Builder*, it is worthwhile

to stop reading to recite or rehearse what you just read. Make summary notes and try mentally answer your questions. Recitation will tell you what you do and don't understand. Answering the “Recite” questions in the *Knowledge Builders* gives you another way to check on how well you understand and remember what you just read.

Reflect

Every *Knowledge Builder* also includes opportunities to reflect on what you have just read. *Think Critically* questions invite you to reflect more deeply about the how and why of what you have just read, and *Self-Reflect* questions help you connect new ideas to your own life. (Don't forget to take notes and recite and reflect on your own.)

This book also provides other opportunities for you to reflect on what you are reading. Each chapter ends with a “Psychology in Action” section. These discussions are filled with practical ideas you can relate to your own life. In many chapters, “Discovering Psychology” boxes also invite you to relate psychology to your own behavior. “Critical Thinking” boxes present intriguing questions you can use to sharpen your critical thinking skills. In addition, “Human Diversity” boxes encourage you to reflect on the rich variability of human experience; “Brainwaves” boxes show how the brain relates to psychology; and “The Clinical File” boxes show how psychology can be applied to treat clinical problems.

TABLE I.1 Using the Reflective SQ4R Method

SURVEY

- Gateway Theme
- Chapter-Opening Story
- Gateway Questions
- Topic Headings
- Figure Captions

QUESTION

- Topic Headings
- Gateway Questions

READ

- Boldface Terms
- Running Glossary (in margin)
- Figures and Tables

RECITE

- Recite Questions (in *Knowledge Builders*)
- Practice Quizzes (online)
- Notes (make them while reading)

REFLECT

- “Think Critically” Questions (in *Knowledge Builders*)
- “Self-Reflect” Questions (in *Knowledge Builders*)
- “Psychology in Action” Sections (throughout the text)
- Boxed Highlights (throughout the text)

REVIEW

- Italicized Gateway Concepts
- Boldface Terms
- Running Glossary (in margin)
- Figures and Tables
- Practice Quizzes (online)

Review

Each chapter concludes with “Gateways to Psychology,” a detailed chapter review. There you will find the Gateway Questions restated, along with point-by-point answers, which are summaries of psychology’s “big ideas” and enduring principles. The first time you finish a chapter, don’t feel obligated to memorize the Gateway concepts. However, be sure to take a moment to think about them. Ultimately, they will provide a good high-level summary of what you learned in this course. By making these ideas your own, you will gain something of lasting value: You will learn to see human behavior as psychologists do.

For further review, you can use the running glossary in the margin, as well as boldface terms, figures, and tables. ■ Table I.1 summarizes how this text helps you apply the reflective SQ4R method. Even with all this help, there is still much more that you can do on your own.

I-3 Reflective Note Taking—LISAN Up!

Gateway QUESTION I-3:

How can learning in class be improved?

Just as studying a textbook is best done reflectively, so, too, is learning in class (Norman, 1994). Like effective reading, good notes come from actively seeking information. A **reflective listener** avoids distractions and skillfully gathers ideas. Here’s a listening/note-taking plan that works for many students. The letters LISAN, pronounced like the word *listen*, will help you remember the steps:

L = Lead. Don’t follow. Read assigned materials before coming to class. Try to anticipate what your teacher will say by asking yourself questions. If your teacher provides course notes or Microsoft PowerPoint® overheads before lectures, survey them before coming to class. Reflective questions can come from those materials or from study guides, reading assignments, or your own curiosity.

I = Ideas. Every lecture is based on a core of ideas. Usually, an idea is followed by examples or explanations. Ask yourself often, “What is the main idea now? What ideas support it?”

S = Signal words. Listen for words that tell you what direction the instructor is taking. For instance, here are some signal words:

<i>There are three reasons . . .</i>	Here come ideas
<i>Most important is . . .</i>	Main idea
<i>On the contrary . . .</i>	Opposite idea
<i>As an example . . .</i>	Support for main idea
<i>Therefore . . .</i>	Conclusion

A = Actively listen. Sit where you can get involved and ask questions. Bring questions that you want answered from the last lecture or from your text. Raise your hand at the beginning of class or approach your professor before the lecture. Do anything that helps you stay active, alert, and engaged.

N = Note taking. Students who take accurate lecture notes tend to do well on tests (Williams & Eggert, 2002). However, don’t try to be a tape recorder. Listen to everything, but be selective and write down only key points. If you are too busy writing, you may not grasp what your professor is saying. When you’re taking notes, it might help to think of yourself as a reporter who is trying to get a good story (Ryan, 2001; Wong, 2015).

Most students take reasonably good notes—and then don’t use them! Many students wait until just before exams to review. By then, their notes have lost much of their meaning. If you don’t want your notes to seem like chicken scratches, it pays to review them periodically (Ellis, 2015).

Using and Reviewing Your Notes

When you review, you will learn more if you take these extra steps (Ellis, 2015; Pychyl, 2013; Santrock & Halonen, 2013):

- Reflect on your notes as soon as you can to fill in gaps, complete thoughts, and look for connections among ideas.
- Remember to link new ideas to what you already know.
- Summarize your notes. Boil them down and organize them.
- Write down several major ideas, definitions, or details that are likely to become test questions. Then, make up questions from your notes and be sure that you can answer them.

Summary

The letters LISAN are a guide to active listening, but listening and good note taking are not enough. You must also review, organize, reflect, extend, and think about new ideas. Use active listening to get involved in your classes, and you will undoubtedly learn more (Van Blerkom, 2012).

I-4 Reflective Study Strategies—Making a Habit of Success

Gateway QUESTION I-4:

What is the best way to study?

Grades depend as much on effort as they do on intelligence. However, don’t forget that good students work more efficiently, not just harder. Many study practices are notoriously unreflective, such as recopying lecture notes, studying class notes but not the textbook (or vice versa), outlining chapters, answering study questions with the book open, and group study (which often becomes a party). The best students emphasize quality: They study their books and notes in depth and attend classes regularly.

Reflective listener A person who knows how to maintain attention, avoid distractions, and actively gather information from lectures.

It's a mistake to blame poor grades on events beyond your control. Students who are motivated to succeed usually get better grades (Nandagopal & Ericsson, 2011). Let's consider a few more things that you can do to improve your study habits.

Study in a Specific Place

Ideally, you should study in a quiet, well-lit area free of distractions. If possible, you should also have one place that is only for studying. Do nothing else there: Keep magazines, MP3 players, friends, cell-phones, pets, Twitter®, video games, puzzles, food, lovers, sports cars, elephants, pianos, televisions, Facebook®, and other distractions out of the area. In this way, the habit of studying will become strongly linked with one specific place. Then, rather than trying to force yourself to study, all you have to do is go to your study area. Once there, you'll find it is relatively easy to get started.

Use Spaced Study Sessions

It is reasonable to review intensely before an exam. However, you're taking a big risk if you are only cramming (learning new information at the last minute). Spaced practice is much more efficient (Anderson, 2010a). **Spaced practice** consists of a large number of relatively short study sessions. Long, uninterrupted study sessions are called **massed practice**. (If you massed up your studying, you probably messed it up, too.)

Cramming places a big burden on memory. Usually, you shouldn't try to learn anything new about a subject the last day before a test. It is far better to learn small amounts every day and review frequently.

Try Mnemonics

Learning has to start somewhere, and memorizing is often the first step. Many of the best ways to improve memory are covered in Chapter 7. Let's consider just one type of technique here.

A **mnemonic** (nuh-MON-ik) is a memory aid. Mnemonics can be created in several ways. Most mnemonics link new information to ideas or images that are easy to remember. For example, what if you want to remember that the Spanish word for *duck* is *pato* (pronounced POT-oh)? To use a mnemonic, you could picture a duck in a pot or a duck wearing a pot for a hat. Likewise, to remember that the cerebellum controls coordination, you might picture someone named Sarah Bellum who is coordinated. For best results, make your mnemonic images exaggerated or bizarre, vivid, and interactive (Macklin & McDaniel, 2005; Radvansky, 2011).

Test Yourself

A great way to improve grades is to take practice tests before the real one (Karpicke & Blunt, 2011). In other words, reflective studying should include **self-testing**, in which you pose questions to yourself. You can use flash cards; "Recite," "Think Critically," and "Self-Reflect" questions in the Knowledge Builders; online quizzes; a study guide; or other means. As you study, ask yourself several questions and be sure that you can answer them. Studying without self-testing is like practicing for a basketball game without shooting any baskets.

For more convenient self-testing, your professor may make a *Study Guide* or a separate booklet of *Practice Quizzes* available. You

Mnemonics help make new information more familiar and memorable. Forming an image of a duck wearing a pot for a hat might help you remember that *pato* is the Spanish word for *duck*.



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can use either to review for tests. Practice quizzes are also available online, as described later in this introduction. However, don't use practice quizzes as a substitute for studying your textbook and lecture notes. Trying to learn from quizzes alone will probably *lower* your grades. It is best to use quizzes to find out what topics you need to study in more depth (Brothen & Wambach, 2001).

Overlearn

Many students underprepare for exams, and most overestimate how well they will do. A solution to both problems is **overlearning**, in which you continue studying beyond your initial mastery of a topic. In other words, plan to do extra study and review after you think that you are prepared for a test. One way to overlearn is to approach all tests as if they will be essays. That way, you will learn more completely, so you really know your stuff.

I-5 Reflective Test Taking—Are You Test Wise?

Gateway QUESTION I-5:

What are some ways to be a more effective test-taker?

If I read, listen, and study effectively, is there anything else I can do to improve my grades? You must also be able to show what you know on tests. Here are some ways to improve your test-taking skills.

General Test-Taking Skills

You'll do better on all types of tests if you observe the following guidelines (Van Blerkom, 2012; Wong, 2015):

1. Read all directions and questions carefully. They may give you good advice or clues.
2. Survey the test quickly before you begin.
3. Answer easy questions before spending time on more difficult ones.
4. Be sure to answer all questions.
5. Use your time wisely.
6. Ask for clarification when necessary.

Objective Tests

Several additional strategies can help you do better on objective tests. Such tests (multiple-choice and true-false items) require you to recognize a correct answer among wrong ones or a true

statement versus a false one. Here are some strategies for taking objective tests:

1. Relate the question to what you know about the topic. Then, read the alternatives. Does one match the answer that you expected to find? If none match, reexamine the choices and look for a partial match.
2. Read all the choices for each question before you make a decision. Here's why: If you immediately think that *a* is correct and stop reading, you might miss seeing a better answer like both *a* and *d*.
3. Read rapidly and skip items that you are unsure about. You may find free information in later questions that will help you answer difficult items.
4. Eliminate certain alternatives. With a four-choice multiple-choice test, you have one chance in four of guessing right. If you can eliminate two alternatives, your guessing odds improve to 50-50.
5. Be sure to answer any skipped items, unless there is a penalty for guessing. Even if you are not sure of the answer, you may be right. If you leave a question blank, it is automatically wrong. When you are forced to guess, don't choose the longest answer or the letter that you've used the least. Both strategies lower scores more than random guessing does.
6. Following this bit of folk wisdom is a mistake: "Don't change your answers on a multiple-choice test. Your first choice is usually right." This is wrong. If you change answers, you are more likely to *gain* points than to lose them. This is especially true if you are uncertain of your first choice, or it was a hunch and if your second choice is more reflective (Higham & Gerrard, 2005).
7. Search for the one best answer to each question. Some answers may be partly true, yet flawed in some way. If you are uncertain, try rating each multiple-choice alternative on a 1 to 10 scale. The answer with the highest rating is the one you want.
8. Remember that few circumstances are always or never present. Answers that include superlatives such as *most*, *least*, *best*, *worst*, *largest*, or *smallest* are often false.

Essay Tests

Essay questions are a weak spot for students who lack organization, don't support their ideas, or don't directly answer the question (Van Blerkom, 2012). When you take an essay exam, try the following tips:

1. Read the question carefully. Be sure to note key words, such as *compare*, *contrast*, *discuss*, *evaluate*, *analyze*, and *describe*. These words all demand a certain emphasis in your answer.
2. Answer the question. If the question asks for a definition and an example, make sure that you provide both. Providing just a definition or just an example will get you half marks.
3. Reflect on your answer for a few minutes and list the main points that you want to make. Just write them as they come

- to mind. Then rearrange the ideas in a logical order and begin writing. Elaborate plans or outlines are not necessary.
4. Don't beat around the bush or pad your answer. Be direct. Make a point and support it. Get your list of ideas into words.
5. Look over your essay for errors in spelling and grammar. Save this for last. Your ideas are more important. You can work on spelling and grammar separately if they affect your grade.

Short-Answer Tests

Tests that ask you to fill in a blank, define a term, or list specific items can be difficult. Usually, the questions themselves contain little information. If you don't know the answer, you won't get much help from the questions.

The best way to prepare for short-answer tests is to overlearn the details of the course. As you study, pay special attention to lists of related terms.

Again, it is best to start with the questions whose answers you're sure you know. Follow that by completing the questions whose answers you think you probably know. Questions whose answers you have no idea about can be left blank.

See ● Figure I.2 for a summary of study skills.

Study Skills Checklist

Time Management

- Make formal schedule
- Set specific goals

Study Habits

- Study in specific area
- Pace study and review
- Create memory aids
- Test yourself
- Overlearn

Reading

- Use reflective SQ4R method
- Study while reading
- Review frequently

Note Taking

- Listen actively
- Use LISAN method
- Review notes frequently

● **Figure I.2** Study skills checklist.

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Spaced practice Practice spread over many relatively short study sessions.

Massed practice Practice done in a long, uninterrupted study session.

Mnemonic A memory aid or strategy.

Self-testing Evaluating learning by posing questions to yourself.

Overlearning Continuing to study and learn after you think that you've mastered a topic.