



ROBERT S. FELDMAN

Understanding **Psychology**

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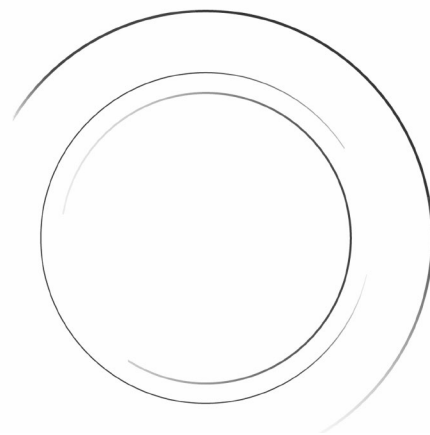
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Understanding Psychology

THIRTEENTH EDITION

Robert S. Feldman

University of Massachusetts Amherst



**Mc
Graw
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Education



UNDERSTANDING PSYCHOLOGY, THIRTEENTH EDITION

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Dedication

To

*Jon, Leigh, Alex, Miles, Josh, Julie, Naomi,
Sarah, Jeff, Lilia, and Kathy*

About the Author

ROBERT S. FELDMAN is Professor of Psychological and Brain Sciences and Deputy Chancellor of the University of Massachusetts Amherst. A recipient of the College Distinguished Teacher Award, he teaches psychology classes ranging in size from 15 to nearly 500 students. During the course of more than two decades as a college instructor, he has taught undergraduate and graduate courses at Mount Holyoke College, Wesleyan University, and Virginia Commonwealth University in addition to the University of Massachusetts.

Professor Feldman, who initiated the Minority Mentoring Program at the University of Massachusetts, also has served as a Hewlett Teaching Fellow and Senior Online Teaching Fellow. He initiated distance-learning courses in psychology at the University of Massachusetts.

A Fellow of the American Psychological Association, the Association for Psychological Science, and the American Association for the Advancement of Science, Professor Feldman received a BA with High Honors from Wesleyan University and an MS and PhD from the University of Wisconsin-Madison. He is a winner of a Fulbright Senior Research Scholar and Lecturer Award and the Distinguished Alumnus Award from Wesleyan. He is past President of the Federation of Associations in Behavioral and Brain Sciences (FABBS) Foundation, which advocates for the field of psychology, and is on the board of the Social Psychology Network (SPN).

He has written and edited more than 250 books, book chapters, and scientific articles. He has edited *Development of Nonverbal Behavior in Children*, *Applications of Nonverbal Behavioral Theory and Research*, *Improving the First Year of College: Research and Practice*, and co-edited *Fundamentals of Nonverbal Behavior*. He is also author of *P.O.W.E.R. Learning: Strategies for Success in College and Life*. His textbooks, which have been used by more than 2 million students around the world, have been translated into Spanish, French, Portuguese, Dutch, German, Italian, Chinese, Korean, and Japanese. His research interests include deception and honesty in everyday life, work that he described in *The Liar in Your Life*, a trade book published in 2009. His research has been supported by grants from the National Institute of Mental Health and the National Institute on Disabilities and Rehabilitation Research.

Professor Feldman loves music, is an enthusiastic pianist, and enjoys cooking and traveling. He serves on the Executive Committee and Board of New England Public Radio. He has three children, two granddaughters, and two grandsons. He and his wife, a psychologist, live in western Massachusetts in a home overlooking the Holyoke mountain range.



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Preface

Students First

If I were to use only two words to summarize my goal across the thirteen editions of this introduction to psychology, as well as my teaching philosophy, that's what I would say: Students first.

I believe that an effective introduction to a discipline must be oriented to students—informing them, engaging them, and exciting them about the field and helping them connect it to their worlds.

INFORMING AND ENGAGING STUDENTS ON PSYCHOLOGICAL CONCEPTS

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- Observational Learning
- Intrinsic and Extrinsic Motivation
- Structures and Functions of the Brain
- Inductive and Deductive Reasoning
- Convergent and Divergent Thinking
- Drive Reduction Theory

At the higher end of Bloom's taxonomy (analyze, evaluate, create), students can work through in-depth arguments to sharpen their critical thinking skills and prepare them to be more discerning consumers of psychology in their everyday lives. For each chapter,

The screenshot displays the McGraw-Hill Connect Psychology interface. At the top, there is a navigation bar with a dropdown menu set to '-Section Break-', a breadcrumb trail for 'Mirror Neurons', and a blue button labeled 'add this question series'. Below the navigation bar is a large white area containing a video player. The video player has a blue play button icon and a title 'Mirror Neurons' with the subtitle 'Introductory Psychology Concepts'. Below the video player, there is a 'References' section with a 'Concept Clip' entry for 'Mirror Neurons'. At the bottom of the interface, there are three buttons: 'cancel', 'save & exit', and 'continue'. A small note at the bottom left of the interface reads 'already added (note: any question can be added multiple times)'.

there are multiple sets of arguments accompanied by auto-graded assessments requiring students to think critically about claims presented as facts.

Related **NewsFlash** exercises, powered by Connect, tie current news stories to key psychological principles and learning objectives. After interacting with a contemporary news story, students are assessed on their ability to make the connection between real life and research findings. Cases are revisited across chapters, encouraging students to consider multiple perspectives. The Thirteenth Edition includes current Newsflashes on topics such as transgender issues and locker room access, police shootings and flaws in eyewitness testimony, and the link between cognitive abilities and eating chocolate.

And, new Newsflashes will be added to Connect each semester.

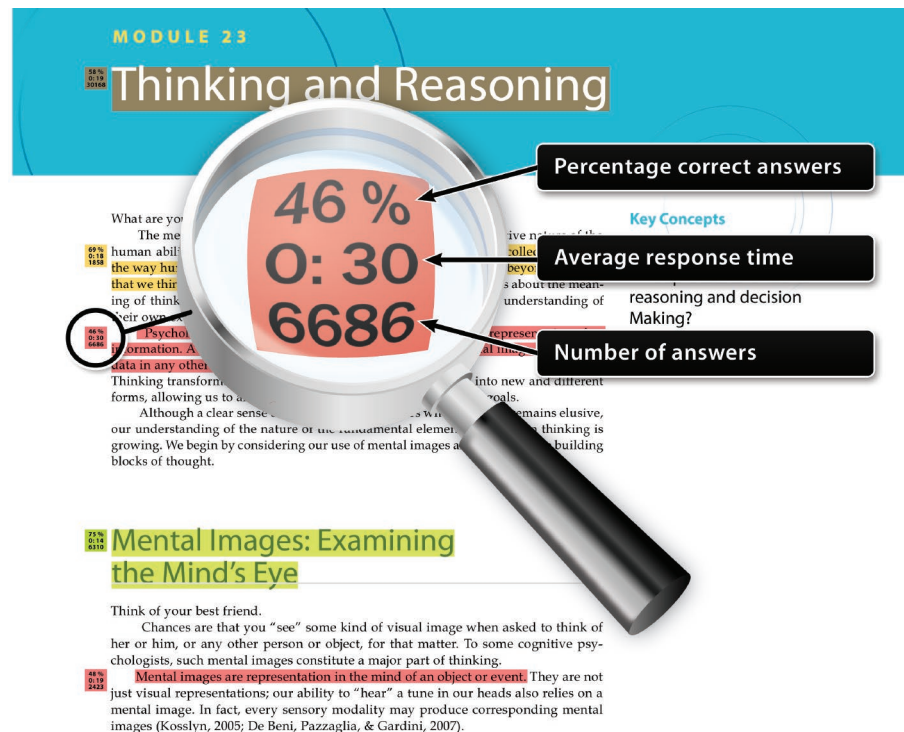
Interactivities, assignable through Connect, require students to engage with the content to practice and apply understanding. New activities include those for: Perspectives in Psychology, Correlations, Neurons, The Brain and Drugs, The Stages of Sleep, Levels of Processing, Maslow's Hierarchy of Needs, Naturalistic Observation, Observational Learning, and Defense Mechanisms.

BETTER DATA, SMARTER REVISION, IMPROVED RESULTS



Students study more effectively with Smartbook®.

- **Make It Effective.** Powered by Learnsmart, SmartBook creates a personalized reading experience by highlighting the most impactful concepts a student needs to learn at that moment in time. This ensures that every minute spent with SmartBook is returned to the student as the most value-added minute possible.



- **Make It Informed.** Real-time reports quickly identify the concepts that require more attention from individual students—or the entire class. SmartBook™ detects the content a student is most likely to forget and brings it back to improve long-term knowledge retention.

Students help inform the revision strategy.

- **Make It Precise.** Systematic and precise, a heat map tool collates data anonymously collected from thousands of students who used Connect Psychology's Learnsmart.
- **Make It Accessible.** The data is graphically represented in a heat map as "hot spots" showing specific concepts with which students had the most difficulty. Revising these concepts, then, can make them more accessible for students.

GAIN INSIGHT ON YOUR CLASS AND STUDENT PERFORMANCE



Whether a class is face-to-face, hybrid, or entirely online, Connect provides the tools needed to reduce the amount of time and energy that instructors must spend to administer their courses. Easy-to-use course management tools allow instructors to

spend less time administering and more time teaching, while reports allow students to monitor their progress and optimize study time.

- The At-Risk Student Report provides instructors with one-click access to a dashboard that identifies students who are at risk of dropping out of the course due to low engagement levels.
- The Category Analysis Report details student performance relative to specific learning objectives and goals, including APA Learning Goals and Outcomes and levels of Bloom's Taxonomy.
- Connect Insight is a one-of-kind visual analytics dashboard—now available for both instructors and students—that provides at-a-glance information regarding student performance.
- The LearnSmart Reports allow instructors and students to easily monitor progress and pinpoint areas of weakness, giving each student a personalized study plan to achieve success.



Student Tools: Mastering the Material

Student success in psychology means mastering the material at a deep level. These are some of the tools that help students maximize their performance:

STUDY ALERTS

Throughout, marginal notes point out important and difficult concepts and topics. These Study Alerts offer suggestions for learning the material effectively and for studying for tests.

FROM THE PERSPECTIVE OF . . .

Every chapter includes questions to help students connect psychological concepts with career realities. Called “From the Perspective of . . .,” this feature helps students understand how psychology relates to their chosen field of study.



Study Alert

Differentiate the five stages of sleep (stage 1, stage 2, stage 3, stage 4, and REM sleep), which produce different brain-wave patterns.



From the perspective of...

An Educator How might you use the findings in sleep research to maximize student learning?

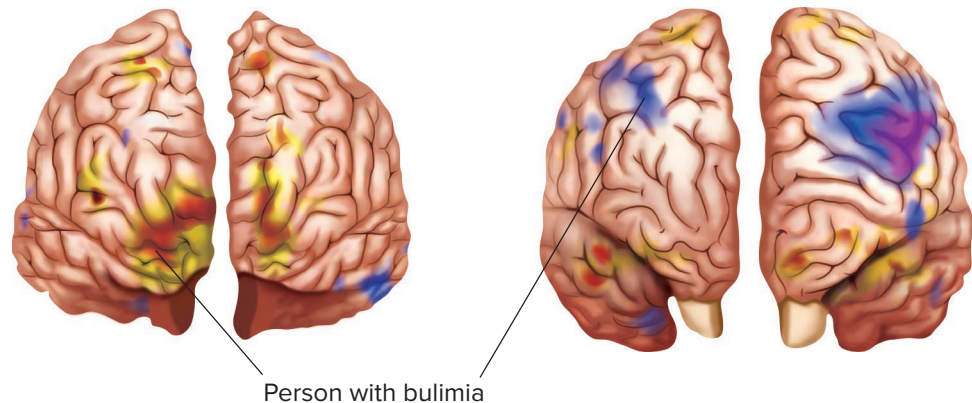
Source: © Andersen Ross/Blend Images/Getty Images

NEUROSCIENCE IN YOUR LIFE

This updated feature emphasizes the importance of neuroscientific research within the various subfields of the discipline and in students' lives. Representative brain scans, with both caption and textual explanation, illustrate significant neuroscientific findings that increasingly influence the field of psychology. For example, one *Neuroscience in Your Life* feature explains how people with eating disorders process information differently.

NEUROSCIENCE IN YOUR LIFE: WHEN REGULATION OF EATING BEHAVIOR GOES WRONG

Research suggests that individuals with eating disorders not only show differences in behavior, but also in the brain. For example, in the representational images below, those with bulimia show differences in many areas of the brain that likely relate to how those with bulimia process their environment. Although researchers are not sure if these differences are the cause or the result of disordered eating, understanding these differences may help us better address it. In particular, these images show areas in which people with bulimia differ in the shape of their brains (red/yellow being areas that are larger and blue/purple being smaller) as compared to those who do not have the disorder (Marsh et al., 2015).



Adapted from Marsh et al. (2015). Anatomical characteristics of the cerebral surface in bulimia nervosa. *Biological Psychiatry*, 77(7), 616–623.

Student Learning: Content and Concepts

The following information about new and revised topics and textual changes, including new definitions based on heat map data, provides a good indication of the content's currency and clarification for students.

Chapter 1—Introduction to Psychology

- Added psychological information about terrorism and possible homophobia in the Orlando nightclub shootings
- Updated the number of active psychologists
- Revised statistics about females outnumbering male psychologists 2:1
- Revised information about the increase in racial/ethnic minority psychologists
- Added material about torture scandal leading to psychologists being prohibited from participating in military interrogations
- Revised definitions for neuroscience, behavioral, and humanistic perspectives
- Outlined key issues more clearly
- Refined description of nature vs. nurture description
- Refined description of individual difference vs. universal principles

Chapter 2—Psychological Research

- Added material about lack of helping by bystanders and about the bystander effect in children
- Added controversies about replication raised by Open Science Collaboration
- Refined operational definition description
- Reworded description of use of theories/data
- Refined goal of case studies
- Refined description of experiment as only way to establish causality
- Revised definitions of significant outcome and choosing participants
- Reworded experimenter expectations concept
- Refined validity of research findings description

Chapter 3—Neuroscience and Behavior

- Added material about using the mind to move robotic limbs

- Included volume of gray matter in cortex differs according to income level
- Included Stiff Person Syndrome and stem cell implants
- Clarified description of dendrite and of axon
- Refined inhibitory and excitatory message difference
- Clarified somatic division and autonomic division
- Reworded transcranial magnetic stimulation (TMS)
- Revised thalamus presentation
- Added correspondence between brain tissue and touch sensitivity
- Redefined association areas

Chapter 4—Sensation and Perception

- Added positive consequences of pain
- Updated statistics on incidence and cost of chronic pain
- Discussed additional benefits of hypnosis and chronic pain

- Explained mirror therapy for pain relief
- Described face blindness
- Described neural basis of itching
- Clarified Weber law examples
- Clarified visual spectrum
- Refined presentation of retina definition
- Refined presentation of visual processing units in the brain related to different stimuli
- Clarified biofeedback with additional examples
- Clarified retinal disparity/binocular cues
- Included new definition of linear perspective
- Refined ESP discussion

Chapter 5—States of Consciousness

- Clarified brain alterations related to hypnosis
- Refined definition of addictive drugs
- Clarified the uses of hypnosis
- Refined description of the reasons why people use drugs
- Added new information on D.A.R.E.
- Clarified the depressive effects of alcohol
- Included use of Suboxone and Vivatrol in treatment of heroin addiction
- Added material about increased heroin use in the U.S.
- Refined description of barbiturates
- Clarified effects of MDMA use
- Explained multiple functions of sleep
- Included types of meditation: focused attention, mindfulness, and compassion
- Discussed body rhythms involving heart and kidneys as well as brain processing
- Explained that sleep provides opportunity to prune neural connections
- Updated latest marijuana use statistics
- Updated research findings on consequences of marijuana use

Chapter 6—Learning

- Clarified classical conditioning process
- Clarified Pavlov's research
- Removed reference to autism and punishment
- Clarified positive and negative punishment

- Clarified different types of partial reinforcement schedules
- Redefined behavior modification techniques
- Clarified choice of strategies in behavior modification
- Redefined relational and analytical learning styles
- Expanded conclusion regarding the impact of violent video games
- Revised Little Albert conclusion
- Explained Facebook addiction
- Added information about educational practices based on learning data

Chapter 7—Memory

- Clarified capacity of working memory
- Described erasing traumatic memories
- Clarified chunk
- Clarified mnemonics
- Clarified working memory components
- Removed serial position effect term
- Clarified role of hippocampus in memory
- Clarified information on MRI scans of hippocampus
- Clarified role of amygdala in memory
- Redefined prime
- Clarified memory errors
- Clarified keyword technique
- Clarified cross-cultural differences in memory

Chapter 8—Cognition and Language

- Described use of computers for medical diagnosis
- Explained cognitive effects of video games
- Redefined familiarity heuristic
- Clarified survival vs. dying frame study
- Redefined mental set
- Clarified nativist approach to language
- Revised definition of interactionist approach to language
- Explained the idea of taking time off to increase creativity

Chapter 9—Intelligence

- Updated WISC-IV to WISC-V
- Clarified fluid intelligence
- Clarified moderate, severe, and profound intellectual disability
- Replaced term *mental retardation* with *intellectual disability*
- Clarified differences between black and white family environments

- Included new material on the Flynn effect

Chapter 10—Motivation and Emotion

- Clarified drawbacks to instinct approaches to motivation
- Redefined arousal approaches to motivation
- Redefined cognitive approaches to motivation
- Updated obesity statistics
- Included information on the snowball effect

Chapter 11—Sexuality and Gender

- Included new data on identifying the number of gays and lesbians
- Recounted story of transsexual judge
- Clarified sexism
- Clarified how stereotyping relates to preference for male traits vs. female traits
- Updated data on women's vs. men's salaries
- Clarified shift toward more favorable attitudes to women in the workforce
- Clarified the motivation behind sexual harassment
- Clarified the negative consequences of gender stereotyping
- Clarified benevolent sexism
- Clarified the consequences of harassment
- Clarified how women's speech patterns differ from men's
- Clarified gender differences in nonverbal behavior
- Clarified meaning of differences in cognitive abilities behind men and women
- Clarified effects of androgen and estrogen exposure and levels
- Added new evidence on genetic causes of homosexuality
- Clarified discussion of intersex people
- Added new material on transgender issues
- Clarified causes and impact of rape
- Updated statistics on incidence of AIDS
- Added new statistics on incidence of unwanted sexual aggressions in college students
- Added material about use of gender-neutral pronouns
- Included use of gender-neutral pronouns

Chapter 12–Development

- Clarified attachment concept
- Redefined conservation
- Clarified discussion of conservation
- Clarified zone of proximal development and scaffolding
- Revised discussion of growth spurt and surge in growth hormones in adolescence
- Revised discussions of the autonomy-versus-shame-and-doubt stage, initiative-versus-guilt stage, generativity-versus-stagnation stage, and ego-integrity vs. despair stage
- Changed description and prevalence figures for Fetal Alcohol Syndrome
- Included more on emerging adulthood
- Clarified Kohlberg's levels
- Updated suicide incidence
- Revised Alzheimer's statistics

Chapter 13–Personality

- Reworked unconscious determinants of personality
- Revised statistics on use of personality testing in business and industry
- Redefined id
- Redefined ego
- Redefined superego
- Revised the discussion of relationship between id, ego, and superego
- Revised discussion of fixation
- Revised discussion of penis envy
- Clarified discussion of defense mechanisms
- Redefined repression
- Clarified discussion of trait theory
- Redefined trait
- Clarified presentation of Allport's traits
- Revised description of trait labeling critique
- Clarified discussion of culture and self-esteem
- Revised discussion of self-concept

Chapter 14–Health Psychology: Stress, Coping, and Well-Being

- Clarified problem-solving vs. emotion-focused coping strategies
- Refined the discussion of the relationship between smoking, emotion, and nicotine levels
- Clarified the relationship between high self esteem and happiness

- Clarified discussion of positive illusions
- Refined the discussion of how people respond to extreme situations in terms of happiness
- Added new material on e-cigarettes
- Discussed how psychotherapy can slow the progression of cancer
- Included training of physicians to convey empathy
- Included cumulative effects of cataclysmic events
- Updated statistics on amount spent on PTSD of veterans

Chapter 15–Psychological Disorders

- Revised description and definition of DSM to incorporate DSM-5 changes
- Included new terminology to reflect DSM-5, including autism spectrum disorder, intellectual disability, gender dysphoria, paraphilic disorder, neurodevelopmental disorders, neurocognitive disorders, illness anxiety disorder, somatic symptom disorder
- Added more material on college student psychological disorders
- Removed five axes terminology
- Clarified positive/negative symptoms of schizophrenia
- Clarified discussion of overattention and underattention in schizophrenia
- Added new statistics on the incidence of adolescent depression
- Refined discussion of additional disorders
- Clarified discussion of abnormality as deviation from the average
- Clarified drawbacks to abnormality as personal discomfort
- Refined discussion of difficulties with medical perspective
- Refined discussion of psychoanalytic theoretical explanations of abnormality
- Clarified discussion of criticisms of cognitive perspective
- Refined discussion of sociocultural explanations of psychological disorders
- Clarified panic disorder vs. phobic disorder
- Revised discussion of causes of anxiety disorders
- Clarified etiology of illness anxiety disorder

- Refined discussion of hallucinations and perceptual problems in schizophrenia
- Clarified biological and situational explanations of schizophrenia
- Refined discussion of predisposition model of schizophrenia
- Refined discussion of neurocognitive disorders

Chapter 16–Treatment of Psychological Disorders

- Clarified definition of psychoanalysis
- Clarified description of resistance
- Refined discussion of contemporary psychodynamic therapy
- Refined presentation of behavioral approaches
- Refined discussion of rational-emotive therapy
- Clarified contemporary person-centered therapy
- Redefined interpersonal psychotherapy
- Refined goals of family therapy
- Refined overview of biological approaches to treatment
- Revised definition of drug therapy
- Refined description of success rates of antidepressant drugs
- Included discussion of deep brain stimulation (DBS)

Chapter 17–Social Psychology

- Refined discussion of need for cognition
- Refined explanation of cognitive dissonance
- Clarified how people combine traits mathematically
- Refined discussion of the foot-in-the-door technique
- Refined discussion of the not-so-free-sample technique
- Clarified Darley & Latane helping model
- Discussed potential hard-wiring of brain for altruistic behavior
- Included benefits of virtual intergroup contact in improving intergroup relations
- Discussed types of aggression in everyday life
- Discussed microaggressions
- Included how heterosexual and gay couples meet

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Acknowledgments

One of the central features of *Understanding Psychology* is the involvement of professionals as well as students in the review process. The Thirteenth Edition of *Understanding Psychology* has relied heavily—and benefited substantially—from the advice of instructors and students from a wide range of backgrounds.

I am grateful to Anthony Yankowski, of Bergen Community College, who provided guidance on updating the material in the chapter on psychological disorders to reflect the publication of the new DSM-5. In addition, Jane W. Couperus of Hampshire College once again provided exceptional support in helping identify appropriate neuroscientific research to include in the *Neuroscience in Your Life* features. I thank her for her superb work.

Many teachers along my educational path have shaped my thinking. I was introduced to psychology at Wesleyan University, where several committed and inspiring teachers—and in particular Karl Scheibe—conveyed their sense of excitement about the field and made its relevance clear to me. Karl epitomizes the teacher-scholar combination to which I aspire, and I continue to marvel at my good fortune in having such a role model.

By the time I left Wesleyan I could envision no other career but that of psychologist. Although the nature of the University of Wisconsin, where I did my graduate work, could not have been more different from the much smaller Wesleyan, the excitement and inspiration were similar. Again, a cadre of excellent teachers—led, especially, by the late Vernon Allen—molded my thinking and taught me to appreciate the beauty and science of the discipline of psychology.

My colleagues and students at the University of Massachusetts Amherst provide ongoing intellectual stimulation, and I thank them for making the university a fine place to work. Several people also provided extraordinary research and editorial help. In particular, I am especially grateful to my superb students, past and present, including Erik Coats, Sara Levine, Jim Tyler, Chris Poirier, and Matt Zimble. John Bickford, in particular, provided invaluable editorial input that has enhanced the content considerably. Finally, I am grateful to John Graiff, whose hard work and dedication helped immeasurably on just about everything involving this content.

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Finally, I remain completely indebted to my family. My parents, Leah Brochstein and the late Saul D. Feldman, provided a lifetime foundation of love and support, and I continue to see their influence in every corner of my life. I am grateful, too, to the late Harry Brochstein, who enriched my life and thinking in many ways.

My extended family also plays a central role in my life. They include, more or less in order of age, my nieces and nephews, my terrific brother, and my brothers- and sisters-in-law, and the late Ethel Radler. Finally, my mother-in-law, the late Mary Evans Vorwerk, had an important influence on this book, and I remain ever grateful to her.

Ultimately, my children, Jonathan, Joshua, and Sarah; my daughters-in-law Leigh and Julie; my son-in-law Jeffrey; my grandsons Alex and Miles; my granddaughters Naomi and Lilia; and my wife, Katherine, remain the focal points of my life. I thank them, with immense love, and thank my lucky stars that they are in my life.

Robert S. Feldman
Amherst, Massachusetts

Making the Grade: A Practical Guide to Smarter Studying

No matter why you are taking introductory psychology, it's a safe bet you're interested in maximizing your understanding of the material and getting a good grade. And you want to accomplish these goals as quickly and efficiently as possible.

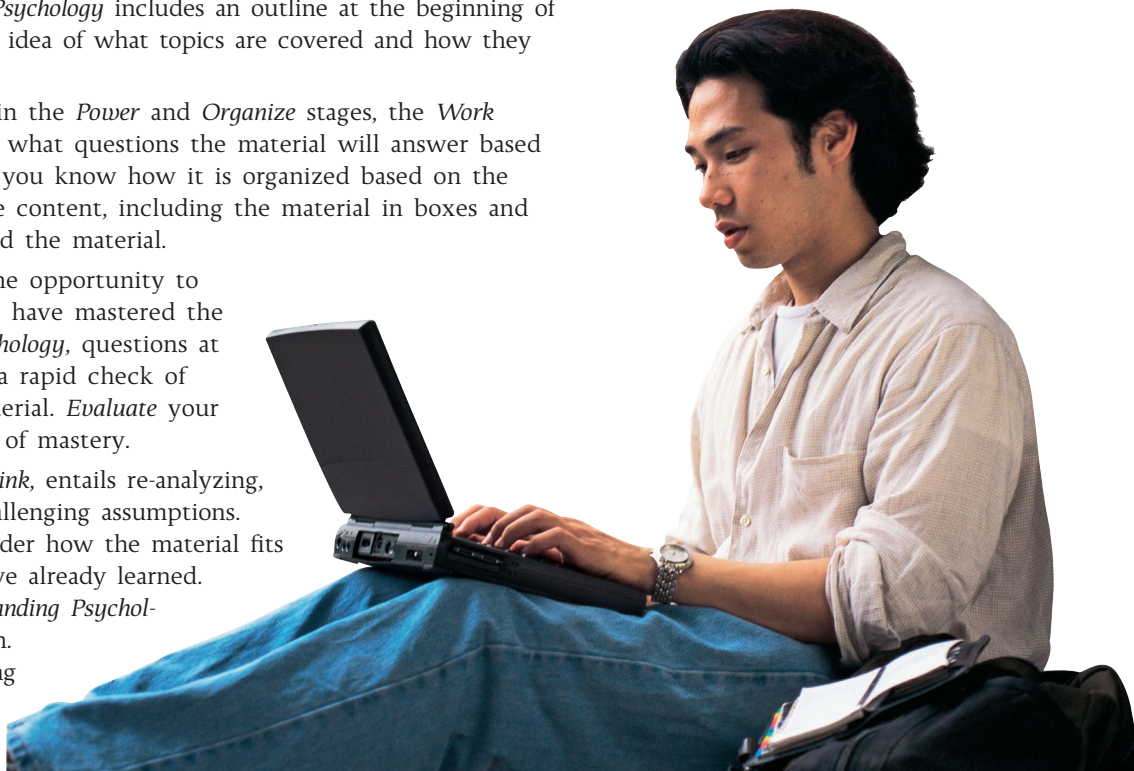
Good news: Several subfields of psychology have identified different ways to help you learn and remember material you will study throughout college. Here's my guarantee to you: If you learn and follow the guidelines in each of these areas, you'll become a better student and get better grades. Always remember that *good students are made, not born*.

Adopt a General Study Strategy

Psychologists have devised several excellent techniques to improve study skills, two of which are described here: "P.O.W.E.R." or Prepare, Organize, Work, Evaluate, and Rethink; and "SQ3R," or Survey, Question, Read, Recite, and Review.

P.O.W.E.R. This learning system entails the following steps:

- **Prepare.** In *Understanding Psychology*, Thirteenth Edition, read the broad questions called *Learning Outcomes* to *Prepare* yourself for the material that follows. *Learning Outcomes* are at the start of each chapter and each module.
- **Organize.** The *Organize* stage involves developing a mental roadmap of where you are headed. *Understanding Psychology* includes an outline at the beginning of each chapter. Read it to get an idea of what topics are covered and how they are organized.
- **Work.** Because of your effort in the *Power* and *Organize* stages, the *Work* stage will be easier. You know what questions the material will answer based on the *Learning Outcomes*, and you know how it is organized based on the outline. Read everything in the content, including the material in boxes and the margins, to fully understand the material.
- **Evaluate.** *Evaluate* provides the opportunity to determine how effectively you have mastered the material. In *Understanding Psychology*, questions at the end of each module offer a rapid check of your understanding of the material. *Evaluate* your progress to assess your degree of mastery.
- **Rethink.** This final stage, *Rethink*, entails re-analyzing, reviewing, questioning, and challenging assumptions. Rethinking allows you to consider how the material fits with other information you have already learned. Every major section of *Understanding Psychology* ends with a *Rethink* section. Answering its thought-provoking questions will help you think about the material at a deeper level.



SQ3R. The SQ3R learning system entails these specific steps:

- **Survey.** *Survey* the material by reading the outlines that open each module, the headings, figure captions, recaps, and Looking Ahead sections, providing yourself with an overview of the major points of the chapter.
- **Question.** In the *Q* step, formulate *questions* about the material, either aloud or in writing, prior to reading a section of text. The *Learning Outcomes*, written as questions at the beginning of each module, and the *Evaluate* and *Rethink* questions that end each module, are examples.
- **Read.** Read actively and critically. While you are reading, answer the questions you have asked yourself. Consider the implications of what you are reading, thinking about possible exceptions and contradictions, and examining underlying assumptions.
- **Recite.** Describe and explain to yourself or a study partner the material that you have just read. Answer questions you have posed. *Recite* aloud to help yourself know how well you understand what you have just read.
- **Review.** In this final step, review the material: read the Epilogue and answer those questions; then review the Visual Summary, and answer any review questions at the end of each module.

Manage Your Time

Managing your time as you study is a central aspect of academic success. But remember: The goal of time management is to permit us to make informed choices about how we use our time. Use these time management procedures to harness time for your own advantage.

SET YOUR PRIORITIES. First, determine your priorities. *Priorities* are the tasks and activities you need and want to do, rank-ordered from most important to least important.

The best procedure is to start off by identifying priorities for an entire term. What do you need to accomplish? Rather than making these goals too general, make them specific, such as, “studying 10 hours before each chemistry exam.”

IDENTIFY YOUR PRIME TIME. Are you a morning person or do you prefer studying later at night? Being aware of the time or times of day when you can do your best work will help you plan and schedule your time most effectively.

MASTER THE MOMENT. Here’s what you’ll need to organize your time:

- A *master calendar* that shows all the weeks of the term on one page. It should include every week of the term and seven days per week. On the master calendar note the due date of every assignment and test you will have. Also include important activities from your personal life, drawn from your list of priorities. Add some free time for yourself.
- A *weekly timetable* that shows the days of the week across the top and the hours, from 6:00 a.m. to midnight, along the side. Fill in the times of all your fixed, prescheduled activities—the times that your classes meet, when you have to be at work, the times you have to pick up your child at day care, and any other recurring appointments. Add assignment due dates, tests, and any other activities on the appropriate days of the week. Then add blocks of time necessary to prepare for those events.
- A *daily to-do list* using a small calendar or your smartphone. List all the things that you intend to do during the day and their priority. Start with the things you *must* do and that have fixed times, such as classes and work schedules. Then add in the other things that you *should* accomplish, such as researching an



upcoming paper or finishing a lab report. Finally, list things that are a low priority like taking in a new movie.

CONTROL YOUR TIME. If you follow the schedules that you've prepared, you've taken the most important steps in time management. Things, however, always seem to take longer than planned.

When inevitable surprises occur, there are several ways to take control of your days to follow your intended schedule:

- **Say no.** You don't have to agree to every favor that others ask of you.
- **Get away from it all.** Adopt a specific spot to call your own, such as a corner desk in a secluded nook in the library. If you use it enough, your body and mind will automatically get into study mode as soon as you get there.
- **Enjoy the sounds of silence.** Studies suggest that we are able to concentrate most when our environment is silent. Experiment and work in silence for a few days. You may find that you get more done in less time than you would in a more distracting environment.
- **Take an e-break.** Take an e-break and shut down your communication sources for some period of time. Phone calls, text messages, IMs, and e-mail can be saved on a phone or computer. They'll wait.
- **Expect the unexpected.** You'll never be able to escape from unexpected interruptions and surprises that require your attention. But by trying to anticipate them and thinking about how you'll react to them, you can position yourself to react effectively when they do occur.



Take Good Notes in Class

Let's consider some of the basic principles of notetaking:

- **Identify the instructor's—and your—goals for the course.** The information you get during the first day of class and through the syllabus is critical. In addition to the instructor's goals, you should have your own. How will the information from the course help you to enhance your knowledge, improve yourself as a person, achieve your goals?
- **Complete assignments before coming to class.**
- **Listen for the key ideas.** Listen for phrases like “you need to know . . .,” “the most important thing to consider . . .,” “there are four problems with this approach . . .,” and—a big one—“this will be on the test . . .” should cause you to sit up and take notice. Also, if an instructor says the same thing in several ways, the material being discussed is important.
- **Use short, abbreviated phrases—not full sentences when taking notes.**
- **Pay attention to what is written on the board or projected from PowerPoint slides. Remember these tips:**
 - Listening is more important than seeing.
 - Don't copy everything that is on every slide.
 - Remember that key points on slides are . . . key points.
 - Check to see if the presentation slides are available online.
 - Remember that presentation slides are not the same as good notes for a class.



Memorize Efficiently

Here's a key principle of effective memorization: Memorize what you need to memorize. *Forget about the rest.*

You have your choice of dozens of techniques of memorization. Also, feel free to devise your own strategies or add those that have worked for you in the past.

REHEARSAL. Say it aloud: rehearsal. Think of this word in terms of its three syllables: re–hear–sal. If you're scratching your head about why you should do this, it's to illustrate the point of *rehearsal*: to transfer material that you encounter into long-term memory.

MNEMONICS. This odd word (pronounced with the "m" silent—"neh MON ix") describes formal techniques used to make material more readily remembered.

Among the most common mnemonics are the following:

- **Acronyms.** *Acronyms* are words or phrases formed by the first letters of a series of terms.

For example, Roy G. Biv helps people to remember the colors of the spectrum (red, orange, yellow, green, blue, indigo, and violet).

- **Acrostics.** *Acrostics* are sentences in which the first letters spell out something that needs to be recalled. The benefits of acrostics are similar to those of acronyms.

- **Rhymes and jingles.** "Thirty days hath September, April, June, and November." If you know the rest of the rhyme, you're familiar with one of the most commonly used mnemonic jingles in the English language.

USE OF MULTIPLE SENSES. Every time we encounter new information, all of our senses are potentially at work. Each piece of sensory information is stored in a separate location in the brain, and yet all the pieces are linked in extraordinarily intricate ways.

- **When you learn something, use your body.** Move around. Stand up; sit down. Touch the page. Trace figures with your fingers. Talk to yourself. Think out loud. By involving every part of your body, you've increased the number of potential ways to trigger a relevant memory later, when you need to recall it.
- **Draw and diagram the material.** Structuring written material by graphically grouping and connecting key ideas and themes is a powerful technique. Creating drawings, sketches, and even cartoons can help us remember better.
- **Visualize.** Visualization is effective because it helps make abstract ideas concrete; it engages multiple senses; it permits us to link different bits of information together; and it provides us with a context for storing information.
- **Overlearning.** *Overlearning* consists of studying and rehearsing material past the point of initial mastery. Through overlearning, you can recall the information without even thinking about it.



Study for Tests Strategically

Here are some guidelines that can help you do your best on tests:

KNOW WHAT YOU ARE PREPARING FOR. To find out about an upcoming test, ask if it is a “test,” an “exam,” a “quiz,” or something else. These names imply different things. In addition, each kind of test question requires a somewhat different style of preparation.

- **Essay questions.** The best approach to studying for an essay test involves four steps:
 1. Reread your class notes and any notes you’ve made on assigned readings that will be covered on the upcoming exam. Also go through the readings themselves, reviewing underlined or highlighted material and marginal notes.
 2. Think of likely exam questions. Some instructors give lists of possible essay topics; if yours does, focus on this list, and think of other possibilities.
 3. Answer each potential essay question—aloud. You can also write down the main points that any answer should cover.
 4. After you’ve answered the questions, look at the notes and readings again. If you feel confident that you’ve answered specific questions adequately, check them off. If you had trouble with some questions, review that material immediately. Then repeat step 3, answering the questions again.
- **Multiple-choice, true-false, and matching questions.** Studying for multiple-choice, true-false, and matching questions requires attention to the details. Write down important facts on index cards: They’re portable and available all the time, and the act of creating them helps drive the material into your memory.
- **Short-answer and fill-in questions.** Short-answer and fill-in questions are similar to essays in that they require you to recall key pieces of information, but they don’t demand that you integrate or compare different types of information. Consequently, the focus of your study should be on the recall of specific, detailed information.

TEST YOURSELF. When you believe you’ve mastered the material, test yourself on it. You can create a test for yourself, in writing, making its form as close as possible to what you expect the actual test to be.

DEAL WITH TEST ANXIETY. What does the anticipation of a test do to you? *Test anxiety* is a temporary condition characterized by fears and concerns about test-taking. You’ll never eliminate test anxiety completely, nor do you want to. A little bit of nervousness can energize us, making us more attentive and vigilant.

On the other hand, for some students, anxiety can spiral into the kind of paralyzing fear that makes their minds go blank. There are several ways to keep this from happening to you:

- *Prepare thoroughly.*
- *Take a realistic view of the test.*
- *Learn relaxation techniques.*
- *Visualize success.*





FORM A STUDY GROUP. *Study groups* can be extremely powerful tools because they help accomplish several things:

- They help members organize and structure the material to approach their studying in a systematic and logical way.
- They allow students to share different perspectives on the material.
- They make it more likely that students will not overlook any potentially important information.
- They force members to rethink the course material, explaining it in words that other group members will understand. This helps both understanding and recall of the information when it is needed on the test.
- Finally, they help motivate members to do their best. When you're part of a study group, you're no longer working just for yourself; your studying also benefits the other study group members. Not wanting to let down your classmates in a study group may encourage you to put in your best effort.



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CHAPTER 1

Introduction to Psychology

LEARNING OUTCOMES FOR CHAPTER 1

- LO 1-1** What is the science of psychology?
- LO 1-2** What are the major specialties in the field of psychology?
- LO 1-3** Where do psychologists work?

- LO 2-1** What are the origins of psychology?
- LO 2-2** What are the major approaches in contemporary psychology?

- LO 3-1** What are psychology's key issues and controversies?
- LO 3-2** What is the future of psychology likely to hold?

MODULE 1

PSYCHOLOGISTS AT WORK

The Subfields of Psychology:
Psychology's Family Tree
Working at Psychology

MODULE 2

A SCIENCE EVOLVES: THE PAST, THE PRESENT, AND THE FUTURE

The Roots of Psychology
Today's Five Major Perspectives
Applying Psychology in the 21st Century: Psychology Matters

MODULE 3

PSYCHOLOGY'S KEY ISSUES AND CONTROVERSIES

Exploring Diversity: Understanding How Culture, Ethnicity, and Race Influence Behavior
Psychology's Future
Neuroscience in Your Life: Enhancing Your Mind
Becoming an Informed Consumer of Psychology: Thinking Critically About Psychology: Distinguishing Legitimate Psychology from Pseudo-Psychology

PROLOGUE *A MAN-MADE CATASTROPHE*

At first the loud popping noises seemed like they were a part of the show at Pulse, a well-known gay nightclub in Orlando, Florida. But as people began to drop to the floor, injured and dying, panicky clubgoers rushed to escape what turned out to be a barrage of bullets. Until he himself was killed by the police, the shooter, Omar Mateen, murdered and injured scores of people over the next three hours.

It was the worst act of domestic terrorism in the United States other than the 9/11 attack on the World Trade Center, showing the darkest side of human behavior. But at the same time the carnage was occurring, the best of humanity was also on display. Some people rushed to help the wounded, and survivors comforted those who were near death. Strangers risked their own lives to help those in desperate need. There was an outpouring of grief around the world.

LOOKING Ahead

The Orlando massacre gives rise to a host of important psychological issues. For example, consider these questions asked by psychologists following the catastrophe:

- What motivated the shooter's rampage? Was he driven by political, social, or religious beliefs, or was he psychologically disturbed?

- What internal, biologically-based changes occurred in those fleeing for their lives from the shooter?
- What memories did people have of the massacre afterward? Why were there contradictory eyewitness reports?
- What would be the long-term effects of the massacre on the psychological and physical health of the survivors and witnesses?
- What are the most effective ways to help people cope with the sudden and unexpected loss of loved ones, many of whom were in the prime of their lives?
- Could this tragedy have been prevented if the shooter had earlier received psychological therapy?

As you'll soon see, the field of psychology addresses questions like these—and many, many more. In this chapter, we begin our examination of psychology, the different types of psychologists, and the various roles that psychologists play.

Module 1

Psychologists at Work

Psychology is the scientific study of behavior and mental processes. The simplicity of this definition is in some ways deceiving, concealing ongoing debates about how broad the scope of psychology should be. Should psychologists limit themselves to the study of outward, observable behavior? Is it possible to scientifically study thinking? Should the field encompass the study of such diverse topics as physical and mental health, perception, dreaming, and motivation? Is it appropriate to focus solely on human behavior, or should the behavior of other species be included?

Most psychologists would argue that the field should be receptive to a variety of viewpoints and approaches. Consequently, the phrase *behavior and mental processes* in the definition of psychology must be understood to mean many things: It encompasses not just what people do but also their thoughts, emotions, perceptions, reasoning processes, memories, and even the biological activities that maintain bodily functioning.

Psychologists try to describe, predict, and explain human behavior and mental processes, as well as helping to change and improve the lives of people and the world in which they live. They use scientific methods to find answers that are far more valid and legitimate than those resulting from intuition and speculation, which are often inaccurate (see Figure 1).

LEARNING OUTCOMES

LO 1-1 What is the science of psychology?

LO 1-2 What are the major specialties in the field of psychology?

LO 1-3 Where do psychologists work?

psychology The scientific study of behavior and mental processes. (Module 1)

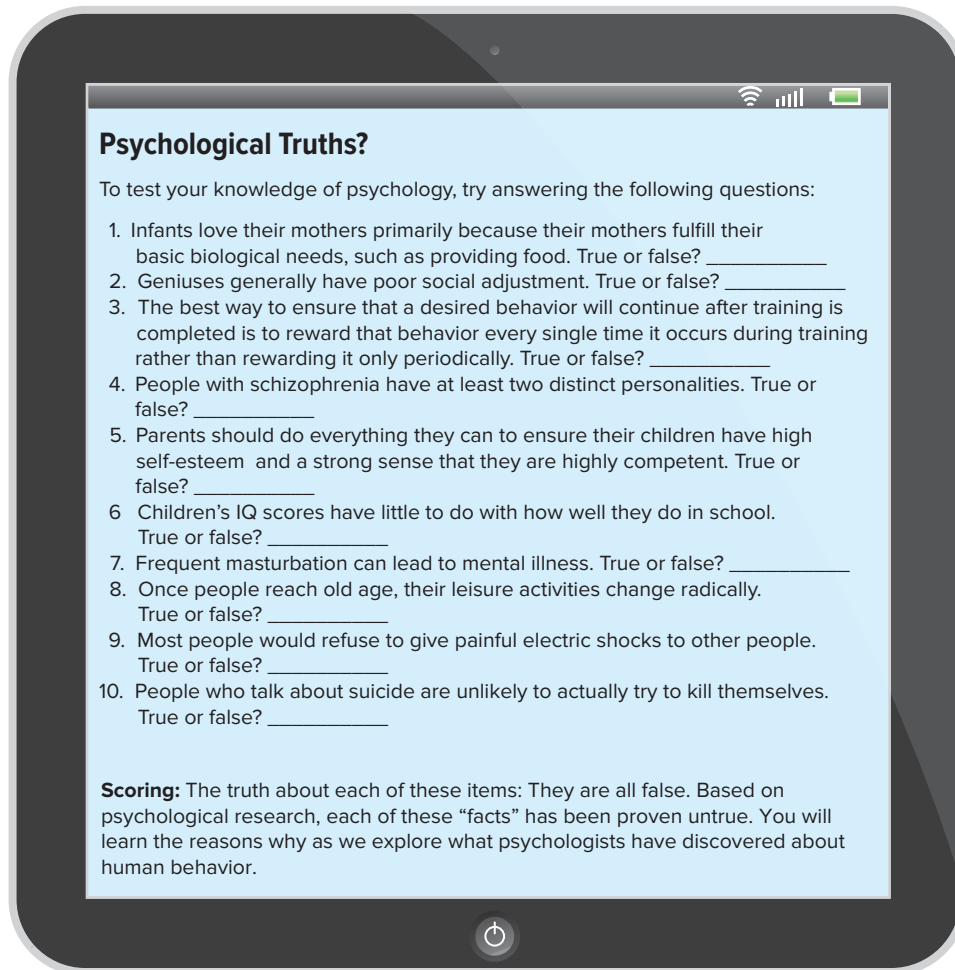


FIGURE 1 The scientific method is the basis of all psychological research and is used to find valid answers. Test your knowledge of psychology by answering these questions.

(Source: Adapted from Lamal, 1979.)

The Subfields of Psychology: Psychology's Family Tree

As the study of psychology has grown, it has given rise to a number of subfields (described in Figure 2). The subfields of psychology can be likened to an extended family, with assorted nieces and nephews, aunts and uncles, and cousins who, although they may not interact on a day-to-day basis, are related to one another, because they share a common goal: understanding behavior. One way to identify the key subfields is to look at some of the basic questions about behavior that they address.



Study Alert

The different subfields of psychology allow psychologists to explain the same behavior in multiple ways. Review Figure 2 for a summary of the subfields.



PsychTech

We now know we cannot text and drive at the same time. Cognitive psychologists have demonstrated that it is impossible to do both without a serious and potentially deadly decline in driving ability.

WHAT ARE THE BIOLOGICAL FOUNDATIONS OF BEHAVIOR?

In the most fundamental sense, people are biological organisms. *Behavioral neuroscience* is the subfield of psychology that focuses on how the brain and the nervous system, as well as other biological aspects of the body, determine behavior.

Thus, neuroscientists consider how our body influences our behavior. For example, they may examine the link between specific sites in the brain and the muscular tremors of people affected by Parkinson's disease or attempt to determine how our emotions are related to physical sensations.

HOW DO PEOPLE SENSE, PERCEIVE, LEARN, AND THINK ABOUT THE WORLD?

If you have ever wondered why you are susceptible to optical illusions, how your body registers pain, or how to make the most of your study time, an experimental psychologist can answer your questions. *Experimental psychology* is the branch of psychology that studies the processes of sensing, perceiving, learning, and thinking about the world. (The term *experimental psychologist* is somewhat misleading: Psychologists in every specialty area use experimental techniques.)

Several subspecialties of experimental psychology have become specialties in their own right. One is *cognitive psychology*, which focuses on higher mental processes, including thinking, memory, reasoning, problem solving, judging, decision making, and language.

WHAT ARE THE SOURCES OF CHANGE AND STABILITY IN BEHAVIOR ACROSS THE LIFE SPAN?

A baby producing her first smile . . . taking his first step . . . saying her first word. These universal milestones in development are also singularly special and unique for each person. *Developmental psychology* studies how people grow and change from the moment of conception through death. *Personality psychology* focuses on the consistency in people's behavior over time and the traits that differentiate one person from another.

HOW DO PSYCHOLOGICAL FACTORS AFFECT PHYSICAL AND MENTAL HEALTH?

Frequent depression, stress, and fears that prevent people from carrying out their normal activities are topics that interest a health psychologist, a clinical psychologist, and a counseling psychologist. *Health psychology* explores the relationship between psychological factors and physical ailments or disease. For example, health psychologists are interested in assessing how long-term stress (a psychological factor) can affect physical health and in identifying ways to promote behavior that brings about good health (Belar, 2008; Yardley & Moss-Morris, 2009; Proyer et al., 2013).



Subfield	Description
Behavioral genetics	<i>Behavioral genetics</i> studies the inheritance of traits related to behavior.
Behavioral neuroscience	<i>Behavioral neuroscience</i> examines the biological basis of behavior.
Clinical psychology	<i>Clinical psychology</i> deals with the study, diagnosis, and treatment of psychological disorders.
Clinical neuropsychology	<i>Clinical neuropsychology</i> unites the areas of biopsychology and clinical psychology, focusing on the relationship between biological factors and psychological disorders.
Cognitive psychology	<i>Cognitive psychology</i> focuses on the study of higher mental processes.
Counseling psychology	<i>Counseling psychology</i> focuses primarily on educational, social, and career adjustment problems.
Cross-cultural psychology	<i>Cross-cultural psychology</i> investigates the similarities and differences in psychological functioning in and across various cultures and ethnic groups.
Developmental psychology	<i>Developmental psychology</i> examines how people grow and change from the moment of conception through death.
Educational psychology	<i>Educational psychology</i> is concerned with teaching and learning processes, such as the relationship between motivation and school performance.
Environmental psychology	<i>Environmental psychology</i> considers the relationship between people and their physical environment.
Evolutionary psychology	<i>Evolutionary psychology</i> considers how behavior is influenced by our genetic inheritance from our ancestors.
Experimental psychology	<i>Experimental psychology</i> studies the processes of sensing, perceiving, learning, and thinking about the world.
Forensic psychology	<i>Forensic psychology</i> focuses on legal issues, such as determining the accuracy of witness memories.
Health psychology	<i>Health psychology</i> explores the relationship between psychological factors and physical ailments or disease.
Industrial/organizational psychology	<i>Industrial/organizational psychology</i> is concerned with the psychology of the workplace.
Personality psychology	<i>Personality psychology</i> focuses on the consistency in people's behavior over time and the traits that differentiate one person from another.
Program evaluation	<i>Program evaluation</i> focuses on assessing large-scale programs, such as the Head Start preschool program, to determine whether they are effective in meeting their goals.
Psychology of women	<i>Psychology of women</i> focuses on issues such as discrimination against women and the causes of violence against women.
School psychology	<i>School psychology</i> is devoted to counseling children in elementary and secondary schools who have academic or emotional problems.
Social psychology	<i>Social psychology</i> is the study of how people's thoughts, feelings, and actions are affected by others.
Sport psychology	<i>Sport psychology</i> applies psychology to athletic activity and exercise.

FIGURE 2 The major subfields of psychology.

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