

A photograph of a person with blonde hair in a ponytail, wearing a blue and white plaid shirt, light-colored pants, and a black backpack, walking away from the camera on a dirt path through a lush green forest. A small brown dog is walking on a leash to the right of the person. The path is surrounded by tall grasses and dense foliage.

# Myers' Psychology

Second Edition

for AP<sup>®</sup>

**David G. Myers**



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# Timeline

## The Story of Psychology: A Timeline

by Charles L. Brewer, Furman University

B.C.E.

**387** — Plato, who believed in innate ideas, suggests that the brain is the seat of mental processes.

**335** — Aristotle, who denied the existence of innate ideas, suggests that the heart is the seat of mental processes.

C.E.

**1604** — Johannes Kepler describes inverted image on the retina.

**1605** — Francis Bacon publishes *The Proficiency and Advancement of Learning*.

**1636** — Harvard College is founded.

**1637** — René Descartes, the French philosopher and mathematician who proposed mind-body interaction and the doctrine of innate ideas, publishes *A Discourse on Method*.

**1690** — John Locke, the British philosopher who rejected Descartes' notion of innate ideas and insisted that the mind at birth is a "blank slate" (*tabula rasa*), publishes *An Essay Concerning Human Understanding*, which stresses empiricism over speculation.

**1774** — Franz Mesmer, an Austrian physician, performs his first supposed cure using "animal magnetism" (later called Mesmerism and hypnosis). In **1777** he was expelled from the practice of medicine in Vienna.

**1793** — Philippe Pinel releases the first mental patients from their chains at the Bicêtre Asylum in France and advocates more humane treatment of mental patients.

**1802** — Thomas Young publishes *A Theory of Color Vision* in England. (His theory was later called the trichromatic theory.)

**1808** — Franz Joseph Gall, a German physician, describes phrenology, the belief that the shape of a person's skull reveals mental faculties and character traits.

**1834** — Ernst Heinrich Weber publishes *The Sense of Touch*, in which he discusses the just noticeable difference (*jnd*) and what we now call Weber's Law.

**1848** — Phineas Gage suffers massive brain damage when a large iron rod accidentally pierces his brain, leaving his intellect and memory intact but altering his personality.

**1859** — Charles Darwin publishes *On the Origin of Species by Means of Natural Selection*, synthesizing much previous work on the theory of evolution, including that of Herbert Spencer, who coined the phrase "survival of the fittest."

**1861** — Paul Broca, a French physician, discovers an area in the left frontal lobe of the brain (now called Broca's area) that is critical for the production of spoken language.

Turn the page to continue

**1901** — Ten founders establish the British Psychological Society.

**1905** — Mary Whiton Calkins becomes the first woman president of the APA.

Ivan Petrovich Pavlov begins publishing studies of conditioning in animals.

Alfred Binet and Théodore Simon produce the first intelligence test for assessing the abilities and academic progress of Parisian schoolchildren.

**1913** — John B. Watson outlines the tenets of behaviorism in a *Psychological Review* article, "Psychology as the Behaviorist Views It."

**1914** — During World War I, Robert Yerkes and his staff develop a group intelligence test for evaluating U.S. military personnel, which increases the U.S. public's acceptance of psychological testing.

**1920** — Leta Stetter Hollingworth publishes *The Psychology of Subnormal Children*, an early classic. In **1921** she is cited in *American Men of Science* for her research on the psychology of women.

Francis Cecil Summer receives a Ph.D. degree in psychology from Clark University, becoming the first African-American to earn a psychology doctorate.

John B. Watson and Rosalie Rayner report conditioning a fear reaction in a child called "Little Albert."

Hermann Rorschach, a Swiss psychiatrist, introduces the Rorschach inkblot test.

**1921** — Developmental psychologist Jean Piaget publishes *The Language and Thought of the Child*.

**1923** — Mary Cover Jones reports reconditioning a fear reaction in a child (Peter), a forerunner of systematic desensitization developed by Joseph Wolpe.

**1924** — In *Introduction to the Technique of Child Analysis*, Anna Freud discusses psychoanalysis in the treatment of children.

**1927** — Wolfgang Köhler publishes *Gestalt Psychology*, which criticizes behaviorism and outlines essential elements of the Gestalt position and approach.

**1929** — Margaret Floy Washburn becomes the first female psychologist (and the second female scientist in any discipline) elected to the U.S. National Academy of Sciences.

**1931** — In *The Wisdom of the Body*, Walter B. Cannon coins the term *homeostasis*, discusses the fight-or-flight response, and identifies hormonal changes associated with stress.

Turn the page to continue

- 1869**— Francis Galton, Charles Darwin's cousin, publishes *Hereditary Genius*, in which he claims that intelligence is inherited. In **1876** he coins the expression “nature and nurture” to correspond with “heredity and environment.”
- 1874**— Carl Wernicke, a German neurologist and psychiatrist, shows that damage to a specific area in the left temporal lobe (now called Wernicke's area) disrupts ability to comprehend or produce spoken or written language.
- 1878**— G. Stanley Hall receives from Harvard University's Department of Philosophy the first U.S. Ph.D. degree based on psychological research.
- 1879**— Wilhelm Wundt establishes at the University of Leipzig, Germany, the first psychology laboratory, which becomes a Mecca for psychology students from all over the world.
- 1883**— G. Stanley Hall, student of Wilhelm Wundt, establishes the first formal U.S. psychology laboratory at Johns Hopkins University.
- 1885**— Hermann Ebbinghaus publishes *On Memory*, summarizing his extensive research on learning and memory, including the “forgetting curve.”
- 1886**— Joseph Jastrow receives from Johns Hopkins University the first Ph.D. degree in psychology awarded by a Department of Psychology in the United States.
- 1889**— Alfred Binet and Henri Beaunis establish the first psychology laboratory in France at the Sorbonne, and the first International Congress of Psychology meets in Paris.
- 1890**— William James, Harvard University philosopher and psychologist, publishes *The Principles of Psychology*, describing psychology as “the science of mental life.”
- 1891**— James Mark Baldwin establishes the first psychology laboratory in the British Commonwealth at the University of Toronto.
- 1892**— G. Stanley Hall spearheads the founding of the American Psychological Association (APA) and becomes its first president.
- 1893**— Mary Whiton Calkins and Christine Ladd-Franklin are the first women elected to membership in the APA.
- 1894**— Margaret Floy Washburn is the first woman to receive a Ph.D. degree in psychology (Cornell University).
- Harvard University denies Mary Whiton Calkins admission to doctoral candidacy because of her gender, despite Hugo Münsterberg's claim that she was the best student he had ever had there.
- 1896**— John Dewey publishes “The Reflex Arc Concept in Psychology,” helping to formalize the school of psychology called functionalism.
- 1898**— In “Animal Intelligence,” Edward L. Thorndike, Columbia University, describes his learning experiments with cats in “puzzle boxes.” In **1905**, he proposes the “law of effect.”
- 1900**— Sigmund Freud publishes *The Interpretation of Dreams*, his major theoretical work on psychoanalysis.
- 1933**— Inez Beverly Prosser becomes the first African-American woman to receive a doctoral degree in psychology from a U.S. institution (Ph.D., University of Cincinnati).
- 1935**— Christiana Morgan and Henry Murray introduce the Thematic Apperception Test to elicit fantasies from people undergoing psychoanalysis.
- 1936**— Egas Moniz, Portuguese physician, publishes work on the first frontal lobotomies performed on humans.
- 1938**— B. F. Skinner publishes *The Behavior of Organisms*, which describes operant conditioning of animals.
- In *Primary Mental Abilities*, Louis L. Thurstone proposes seven such abilities.
- Ugo Cerletti and Lucino Bini use electroshock treatment with a human patient.
- 1939**— David Wechsler publishes the Wechsler-Bellevue intelligence test, forerunner of the Wechsler Intelligence Scale for Children (WISC) and the Wechsler Adult Intelligence Scale (WAIS).
- Mamie Phipps Clark receives a master's degree from Howard University. In collaboration with Kenneth B. Clark, she later extends her thesis, “The Development of Consciousness of Self in Negro Preschool Children,” providing joint research cited in the U.S. Supreme Court's **1954** decision to end racial segregation in public schools.
- Edward Alexander Bott helps found the Canadian Psychological Association. He becomes its first president in **1940**.
- World War II provides many opportunities for psychologists to enhance the popularity and influence of psychology, especially in applied areas.
- 1943**— Psychologist Starke Hathaway and physician J. Charnley McKinley publish the Minnesota Multiphasic Personality Inventory (MMPI).
- 1945**— Karen Horney, who criticized Freud's theory of female sexual development, publishes *Our Inner Conflicts*.
- 1946**— Benjamin Spock's first edition of *The Commonsense Book of Baby and Child Care* appears; the book will influence child rearing in North America for several decades.
- 1948**— Alfred Kinsey and his colleagues publish *Sexual Behavior in the Human Male*, and they publish *Sexual Behavior in the Human Female* in **1953**.
- B. F. Skinner's novel, *Walden Two*, describes a Utopian community based on positive reinforcement, which becomes a clarion call for applying psychological principles in everyday living, especially communal living.
- Ernest R. Hilgard publishes *Theories of Learning*, which was required reading for several generations of psychology students in North America.
- 1949**— Raymond B. Cattell publishes the Sixteen Personality Factor Questionnaire (16PF).

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- B. Approaches
- C. Subfields in Psychology

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# Myers' Psychology for AP<sup>®</sup>

Second Edition

**David G. Myers**

Hope College  
Holland, Michigan

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# Dedication

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**F**or our esteemed Content Advisory Board members,  
with gratitude for their committed and perceptive  
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His research and writings have been recognized by the Gordon Allport Intergroup Relations Prize, by a 2010 Honored Scientist award from the Federation of Associations in Behavioral & Brain Sciences, by a 2010 Award for Service on Behalf of Personality and Social Psychology, by a 2013 Presidential Citation from the American Psychological Association (APA) Division 2, and by three honorary doctorates.

Myers’ scientific articles have, with support from National Science Foundation grants, appeared in three dozen scientific periodicals, including *Science*, *American Scientist*, *Psychological Science*, and *American Psychologist*. In addition to his scholarly writing and his textbooks for introductory and social psychology, he also digests psychological science for the general public. His writings have appeared in four dozen magazines, from *Today’s Education* to *Scientific American*. He also has authored five general audience books, including *The Pursuit of Happiness* and *Intuition: Its Powers and Perils*.

David Myers has chaired his city’s Human Relations Commission, helped found a thriving assistance center for families in poverty, and spoken to hundreds of college, community, and high school groups (including AP® Psychology conferences, an AP® Psychology Reading, Teachers of Psychology in Secondary Schools, and the National Council for Social Studies Psychology Community). He also served on the APA’s working group that created the 2010 revision of the *National Standards for High School Psychology Curricula*.

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# In Appreciation

## Reviewers

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## How to Get the Most From Your AP® Psychology Resources

The Advanced Placement® (AP®) Psychology course represents a wonderful opportunity for high school students to be challenged by the rigor of a college-level course, while learning life-relevant, mind-expanding concepts from the humanly significant discipline of psychology.

My unwavering vision for *Psychology for AP®* has been to *merge rigorous science with a broad human perspective that engages both mind and heart*. I aim to offer a state-of-the-art introduction to psychological science that speaks to your needs and interests. I aspire to help you understand and appreciate the wonders of your everyday life. And I seek to convey the inquisitive spirit with which psychologists *do* psychology.

### HIGH SCHOOL INSIGHT

Creating this book is a team sport. Like so many human achievements, it is the product of a collective intelligence. Woodrow Wilson spoke for me: “I not only use all the brains I have, but all I can borrow.”

For this edition, I was fortunate to collaborate closely with an expert Content Advisory Board throughout the development process. The Content Advisory Board understands the needs of the AP® Psychology teacher and student, and provided crucial direction on how to make the content relevant, engaging, and appropriate for a high school classroom. In addition, the Board members provided sage guidance on key content, organizational, and pedagogical issues and ensured that the end-of-module and end-of-unit assessments provide the practice you will need for the questions you will encounter on the AP® exam. More detailed information about our extensive teacher/student support package can be found in the *Annotated Teacher’s Edition* and on our catalog page: <http://highschool.bfwpub.com/MyersAP2e>.

I extend gratitude and admiration to each of our Board members for their enduring contributions to the teaching of psychology. See pages vii through ix for more information about each of these talented educators and assessment writers.

### WHAT’S NEW?

The organization of this book is inspired by my goal of providing the ultimate teaching and learning tool for AP® Psychology teachers and students. With this in mind, the second edition has been carefully restructured and extensively updated, while keeping true to the most recently revised College Board® Course Description. It features improvements to the organization and presentation, as well as to our system of supporting student learning and remembering. For a visual walk-through of the features of the book, see pages xxxi through xxxiv.

## Key Content Changes

### New Research Throughout

My ongoing scrutiny of dozens of scientific periodicals and science news sources, in addition to regular correspondence with researchers, was enhanced by commissioned reviews and countless e-mails from teachers and students. All this supports my integrating the field's most important, thought-provoking, and student-relevant new discoveries. See the table below for details about new coverage.

### Key Content Changes in *Myers' Psychology for AP<sup>®</sup>, 2nd Edition*

#### Unit I: Psychology's History and Approaches

- Updated coverage of women in psychology and cross-cultural psychology.
- Introduction of *positive psychology* and *community psychology*, both new key terms.
- Increased coverage of psychology's subfields.

#### Unit II: Research Methods: Thinking Critically With Psychological Science

- Scientific method is now illustrated with theory about sleep's value for effective learning.
- Includes new survey data examples; *sampling bias* is a new key term.
- Improved clarification of random sampling and random assignment.
- New research demonstrating the dangers of statistical illiteracy, and expanded discussion of descriptive and inferential statistics.

#### Unit III: Biological Bases of Behavior

- Author's personal MRI experience demonstrates autonomic nervous system in action.
- Includes new coverage of cognitive neural prosthetics.
- New photo shows Phineas Gage as he looked *after* his famous accident.
- Now includes new research on blindsight.
- Several new key terms, including *refractory period*, *all-or-none response*, *agonist*, *antagonist*, and *epigenetics*.

#### Unit IV: Sensation and Perception

- Both topics covered in clearer and more efficient fashion.
- Expanded discussion and new research examples of selective attention.
- New section covers *embodied cognition*, the blending of tactile and social judgments.
- Includes new coverage of taste-touch sensory interaction, and new cognitive neuroscience research helps explain smell-cognition connection.

#### Unit V: States of Consciousness

- Expanded coverage and research examples of conscious awareness.
- Adopts the new American Academy of Sleep Medicine classification of sleep stages (REM, NREM-1, NREM-2, and NREM-3).
- Includes new research linking sleep loss and depression in adolescents, and new research support for sleep deprivation lowering immune system functioning.
- New illustration of physiological effects of sleep deprivation.
- Drugs discussion fully updated for DSM-5 (*substance use disorder* and *alcohol use disorder* are new key terms); new table outlines when drug use is a disorder.

#### Unit VI: Learning

- New biology, cognition, and learning section that more fully explores the biological and cognitive constraints on classical, operant, and observational learning.

- New learning and personal control section.
- New key terms include *cognitive learning*, *respondent behavior*, and *operant behavior*.
- New research examples of how children will over-imitate adult actions.
- Updated research examples of media violence viewing/violent behavior.

#### Unit VII: Cognition

- David Myers worked closely with Janie Wilson (professor of psychology at Georgia Southern University and vice president for programming of the Society for the Teaching of Psychology) for this unit's thorough revision.
- Atkinson-Shiffrin's three-stage model de-emphasized in favor of more current theories; coverage of working memory updated and expanded.
- New discussion of the testing effect and other study tips, including best times to study and effects of spacing on memory over time.
- New research on inaccurate autobiographical memories, memory reconsolidation, the misinformation effect, insight, confirmation bias, framing, and why we tend to fear the wrong things.
- New research updates the discussion of babies' productive language development and the nature–nurture debate over language development.
- Neuroscience research updates discussion of language development; coverage of aphasia, Broca's area, and Wernicke's area now appears here.

#### Unit VIII: Motivation, Emotion, and Stress

- Biochemistry of hunger and the biological and cultural influences on hunger updated.
- New research fully updated for DSM-5 enhances discussion of hormones and sexual behavior.
- New discussion of social networking.
- Theories of emotion coverage reorganized and improved.
- New research tracks positive vs. negative social media posts across days of the week.
- New research supports men's tendency to socially withdraw under stress and women's tendency to *tend and befriend*.
- New research shows health-depleting effects of depression, anxiety, and stress, including the links to genes controlling inflammation.

#### Unit IX: Developmental Psychology

- Discussion of teratogens expanded to include epigenetics.
- Autism spectrum disorder discussion extensively updated.
- Gender development section expanded and improved with new research.
- New research expands discussion of adolescent identity development to include effects on alcohol abuse and effects of romantic relationships; new social networking research updates peer relationship discussion.
- Sexual development now covered here.

#### Unit X: Personality

- Modern-day psychodynamic approaches now more clearly distinguished from historical Freudian roots.
- New research expands discussion of modern unconscious mind.
- New research supports value of humanistic psychology's positive regard as well as Big Five personality traits; new social networking research connects texting behavior with Big Five traits.

(continued on the next page)



- New cross-cultural research expands understanding of extraversion and well-being, and new research updates discussion of positive psychology.
- *Self-efficacy* and *narcissism* are new key terms.

#### Unit XI: Testing and Individual Differences

- New research updates discussion of *g* factor and cognitive abilities predicting later accomplishments.
- New research links emotional intelligence to unconscious processing and updates discussion of neurological measurements of intelligence.
- Research updates clarify discussion of twin studies and heritability and the variability of intelligence in gender, racial, ethnic, and socioeconomic groups.
- New research offers ideas for culturally less-biased intelligence tests and new examples support the effect of expectations on test performance.

#### Unit XII: Abnormal Behavior

- Fully updated to reflect DSM-5 changes.
- Updated PTSD coverage and related discussion of resilience and posttraumatic growth.
- New research on depression (including high school student population statistics); suicide box expanded to include nonsuicidal self-injury.
- New neuroscience research updates schizophrenia section; includes new risk factors and more research support for risk of maternal virus during midpregnancy.
- New cross-cultural research and art updates eating disorders coverage; antisocial personality disorder coverage updated.

#### Unit XIII: Treatment of Abnormal Behavior

- Fully updated to reflect DSM-5 changes.
- New case study demonstrates transference in therapy; now covers Ellis' *rational-emotive behavior therapy (REBT)*, with new key term and case study.
- Cognitive-behavioral therapy discussion expanded.
- Discussion of aims and benefits of group and family therapy clarified.
- Includes new research on certain psychotherapies working best on specific disorders, with *therapeutic alliance* a new key term.
- Improved antidepressants coverage for anxiety and other disorders.
- New research explores placebo effect in ECT treatment and alternative stimulation procedures.

#### Unit XIV: Social Psychology

- New research on persuasion uses climate change as central example; Milgram discussion includes cross-cultural, modern-day research replications.
- New coverage of online group polarization.
- New figure tracks prejudice over time in various age groups.
- Updated ingroup and outgroup discussion; new research on categorizing mixed-race people by their minority identity.
- New research on contributors to aggression; new research on prosocial effects of playing positive video games and on violent video games increasing aggression and decreasing compassion and altruism.

#### Enrichment Modules

- Engaging bonus material that teachers may choose to assign after the AP<sup>®</sup> exam: influences on drug use, psychology at work, experienced emotions, human flourishing, and animal thinking and language.

## New Features

### A Flexible Modular Approach

The second edition has been restructured with a modular approach. As in the first edition, the units still correspond to the College Board® AP® Topic Outline. For the second edition, the units have been divided into 3 to 10 modules each. Each module breaks the course material into a pedagogically appropriate “chunk” that is designed to be presented in one or two class periods, with additional class periods for activities, demonstrations, and reinforcement, as needed. The modular approach also makes it easier for you to remember what to study and read for homework.

In addition, the **Numbered Learning Objectives** have been improved and are now used more effectively to promote retention. They appear in statement form at the beginning of each module to help orient you to the material you are about to read. These clear and measurable Learning Objectives provide you with a snapshot preview of the section material, while allowing you to “check off” each objective as you master it. The objectives are repeated in an engaging question form in context within the module, and then used at the end of each module for review.

### More AP®-Focused Elements and Study Aids

- **AP® Exam Tips**, found in the margin throughout the text, provide invaluable advice on where to focus and how to avoid pitfalls so that you may be successful in the course and on the exam. These tips also appear compiled in an appendix at the end of the book.
- More **AP® exam practice** is provided in the numerous, high-quality multiple-choice and free-response questions (FRQs) found at the end of each module and unit. These assessments not only test the material learned, but they also mimic AP® questions to train you for what you will see on the exam. The open-ended, conceptual FRQs familiarize you with the kind of synthesis skills you’ll need to master the exam.
- A **full-length AP®-style practice exam** is included at the end of the text to ensure you have nailed down the content and are ready to tackle the real test in May.
- A **Key Contributors list** appears at the end of each unit to highlight the most important people you should know in psychology. You can access the **Key Contributors Appendix** at the end of the text, and the *Key Contributors Study Guide* on the Book Companion Site (BCS) to be sure you are familiar with these core contributions to psychology. Access the BCS at [www.worthpublishers.com/MyersAP2e](http://www.worthpublishers.com/MyersAP2e).

## What Continues?

### Alignment With the College Board® Topic Outline

With help from my sharp-eyed editors and Content Advisory Board, I have worked to create an organization that matches up with the College Board’s® 2013 topic outline, so that teachers can be sure they are providing their students with the best possible preparation for the AP® exam. This means my text offers the same 14 units, in order, and the same distribution of content coverage among those 14 units. Where the outline has recommended coverage within specific units, you can be sure that you will find that coverage (sometimes with references to more, related coverage elsewhere).

Although the College Board® topic outline is not intended to be an exhaustive list of topics, it represents an excellent starting point—to which I have added coverage based on my own knowledge of what is needed to succeed in other college courses, what’s new and important in the world of psychology research, and perhaps most important, what an educated person needs to know. See the opening book pages for a table aligning each College Board® course description topic to the corresponding coverage in this text.

### Thoughtful Study Aids

- **Numbered Learning Objective Questions**, as noted earlier, establish reading objectives for each significant section of text and direct your learning.

- **Before You Move On** features, found at the end of major sections of text, include **Ask Yourself questions**, which encourage you to apply new concepts to your own experiences, and **Test Yourself questions** (with answers in Appendix E) that assess mastery and encourage big-picture thinking.
- **Module Review Sections** repeat the numbered objective questions and address them with a bulleted summary. **Unit Review Sections** include page-referenced Terms and Concepts to Remember as well as a list of Key Contributors discussed in the unit.

### Cultural and Gender Diversity Coverage

This text presents a thoroughly cross-cultural perspective on psychology (Table 1)—reflected in research findings, and text and photo examples. Coverage of the psychology of women and men is also thoroughly integrated (Table 2). Discussion of the relevance of cultural and gender diversity begins on the first page of the first unit and continues throughout the text.

### Strong Critical Thinking Coverage and Research Emphasis

I aim to introduce you to critical thinking throughout the book. The text includes the following opportunities for you to learn or practice critical thinking skills and to work toward a better understanding of research design principles—both of which are essential to success on the AP<sup>®</sup> exam.

- Unit II, Research Methods: Thinking Critically With Psychological Science, introduces you to psychology's **research methods**, emphasizing the fallacies of our everyday intuition and common sense and, thus, the need for psychological science. Critical thinking is introduced as a key term in this unit (page 35). The Statistical Reasoning discussion encourages you to focus on thinking smarter by applying simple statistical principles to everyday reasoning.
- Throughout the text, additional opportunities may be found for you to test your understanding of **research design**, with narrative and marginal self-test review questions (with answers following in the narrative, or upside down in a nearby margin).
- **Critical examinations of key issues in psychology** appear throughout the narrative to spark interest and provide important lessons in thinking critically about everyday topics and pop psychology. (Consider, for example, the critical analysis of ESP on page 238.) See Table 3 for a summary of this text's coverage of critical thinking and research-related topics, and for a list of the Thinking Critically About boxes.

**Table 1** Culture and Multicultural Experience

In Units I–XIV and the Enrichment Modules, coverage of culture and multicultural experience can be found on the following pages:

Aggression, p. 791	Behavioral effects of culture, p. 130	definition, pp. 776–777 and the self, pp. 598–600	use of, p. 824
AIDS, p. 450	Body ideal, pp. 697–698	shock, pp. 44, 777	Eating disorders: Western culture and, p. 698
Anger, p. 846	Categorization, pp. 256–257	Deaf culture, pp. 869, 117, 111, 374, 376, 377	Emotion:
Animal research ethics, pp. 66–67	Complementary/alternative medicine, p. 863	Development:	emotion-detecting ability, p. 432
Attraction:	Conformity, p. 765	attachment, pp. 492, 495	experiencing, p. 846
love and marriage, p. 803	Corporal punishment practices, pp. 281–282	child-rearing, p. 497	expressing, pp. 435–437, 435–437
speed-dating, p. 799	Cultural norms, pp. 140, 777, 503–504	cognitive development, p. 484	Enemy perceptions, p. 812
Attractiveness, pp. 138, 798–799, 801	Culture:	social development, p. 492	Fear, p. 367
Attribution, social and economic effects of, p. 755	context effects, p. 165	Drugs:	Flow, pp. 827–828
		psychological effects of, p. 247	Flynn effect, pp. 621–622

Fundamental attribution error, p. 755	Leaving the nest, p. 523	Participative management, p. 839	suicide, pp. 676–677
Gender:	Life satisfaction, p. 394	Peacemaking:	<i>susto</i> , p. 653
roles, pp. 503–504	Loop systems, p. 841	conciliation, p. 815	<i>taijin-kyofusho</i> , p. 653
social power, pp. 501–502	Management styles, p. 839	contact, pp. 812–813	Psychotherapy:
Grief, expressing, pp. 547–548	Marriage, pp. 544–545	cooperation, p. 814	culture and values in, p. 735
Happiness, pp. 851–852	Mating preferences, p. 138	Peer influence, p. 510	EMDR training, p. 733
Hindsight bias, p. 31	Meditation, p. 862	Personality, p. 588	Puberty and adult independence, p. 523
History of psychology, pp. 2–7	Memory encoding, p. 323	Prejudice, pp. 69, 52–53, 780–787	Self-esteem, p. 394
Human diversity/kinship, pp. 66, 776–777	Menopause, p. 540	Prejudice prototypes, pp. 356–357	Self-serving bias, pp. 596, 597
Identity, forming a social, p. 519	Mental illness rate, pp. 657–658	Psychological disorders:	Sex drive, p. 138
Individualism/collectivism, pp. 598–600	Molecular genetics: “missing women,” p. 129	antisocial personality disorder, pp. 700–701	Similarities, pp. 136–137
Intelligence, pp. 607, 617, 619, 614, 621–622	Motivation: hierarchy of needs, p. 394	cultural norms, p. 651	Social loafing, p. 773
bias, pp. 642–643	Need to belong, pp. 599–600	depression, pp. 671, 674, 675, 680	Social-cultural perspective, p. 11
nutrition and, pp. 640–641	Neurotransmitters: curare, p. 83	dissociative identity disorder, p. 695	Spirituality: Israeli kibbutz communities, p. 862
Language, pp. 376, 372–375, 377, 379–380, 776	Obesity, pp. 401, 402–403	eating disorders, pp. 698, 697–698	Stress:
monolingual/bilingual, p. 380	Observational learning: television and aggression, p. 309	rates of, pp. 657, 650	racism and, p. 444
	Optimism and health, p. 857	schizophrenia, pp. 653, 687–688	adjusting to a new culture, p. 443
	Organ donation, p. 368	somatoform, p. 693	Taste preferences, p. 400
	Pace of life, pp. 41, 777		Testing bias, pp. 642–643
	Pain, perception of, p. 203		Weight control, p. 401
	Parapsychology, p. 167		
	Parent and peer relationships, pp. 521–522		

## Table 2 The Psychology of Men and Women

In Units I–XIV and the Enrichment Modules, coverage of the psychology of men and women can be found on the following pages:

ADHD, p. 652	Autism, pp. 481–482	methamphetamines, p. 253	and child-raising, pp. 504–505, 697
Adulthood: physical changes, p. 540	Behavioral effects of gender, p. 66	psychological/social-cultural influences, p. 824	development, pp. 500–505
Aggression, pp. 790–794	Biological predispositions: and the color red, p. 294	Eating disorders, pp. 697–698	prejudice, pp. 780–783
pornography, pp. 793–794	Biological sex/gender, pp. 526–527	Emotion-detecting ability, pp. 434–435, 638	roles, pp. 503–504
rape, pp. 793, 793–794	Bipolar disorder, p. 674	Empty nest, p. 545	similarities/differences, pp. 500–503
Alcohol:	Body image, p. 698	Father care, pp. 531, 491–492	Gendered brain, pp. 410, 533–534, 536, 527
addiction and, p. 249	Color vision, p. 178	Freud’s views:	Generic pronoun “he,” p. 379
sexual aggression and, p. 249	Conformity: obedience, pp. 765–766	evaluating, p. 561	Grief, p. 547
use, pp. 249–250	Dating, p. 800	identification/gender identity, p. 559	Group polarization, pp. 773–774
Altruism: help-receiving, p. 808	Depression, pp. 671, 674, 679	penis envy, p. 565	Happiness, p. 852
Antisocial personality disorder, p. 699	Dream content, p. 240	Oedipus/Electra complexes, p. 559	Hormones and:
Attraction, pp. 798–802	Drug use:	Gender:	aggression, p. 790
	biological influences, p. 823	and anxiety, p. 662	

(continued on the next page)



**Table 2 (continued)**

sexual behavior, pp. 407–408	Menopause, p. 540	Rape, p. 787	Sleep, p. 235
sexual development, pp. 513–514, 526–527	Midlife crisis, p. 544	Religiosity and: life expectancy, p. 864	Stereotyping, p. 164
testosterone-replacement therapy, pp. 407–408	Molecular genetics: “missing women,” pp. 781–783,	REM sleep, arousal in, p. 229	Stress: and depression, p. 453 and health and sexual abuse, p. 859 and heart disease, p. 452 and HIV, p. 450 and the immune system, p. 448 response, pp. 445–446
Intelligence, pp. 638–639	Obesity: health risks, p. 401	Romantic love, pp. 803–804	Suicide, pp. 676–677
bias, p. 642	Observational learning: sexually violent media, p. 309	Savant syndrome, p. 609	Women in psychology, pp. 4–5
Leadership: transformational, p. 839	TV’s influence, p. 309	Schizophrenia, pp. 685–686	
Losing weight, p. 403	Pornography, p. 408	Sense of smell, pp. 206–207	
Marriage, pp. 545, 857	Posttraumatic stress disorder: development of, pp. 664–665	Sexual attraction, p. 138	
Maturation, pp. 513–514	Prejudice, pp. 357, 780–783	Sexual fantasies, p. 410	
Menarche, p. 513	Psychological disorders, rates of, p. 658	Sexuality, pp. 406–410 adolescent, pp. 527–531 evolutionary explanation, pp. 138–139 external stimuli, p. 409	

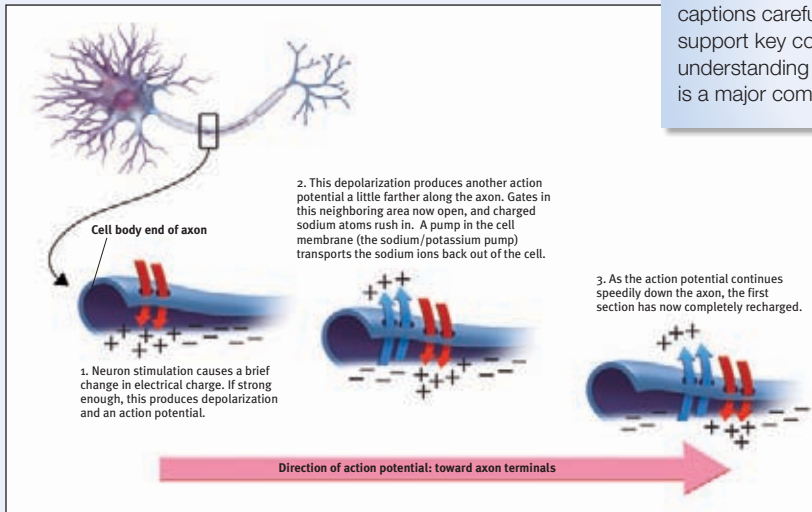
**Table 3 Critical Thinking and Research Emphasis**

Critical Thinking boxes and emphasis on research can be found on the following pages:

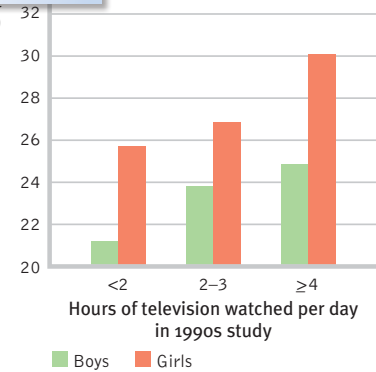
<b>Thinking Critically</b> <b>About . . . boxes:</b> The Fear Factor—Why We Fear the Wrong Things, pp. 366–367 Lie Detection, p. 428 How to Be a “Successful” Astrologer or Palm Reader, pp. 579–580 ADHD—Normal High Energy or Genuine Disorder?, p. 652 Insanity and Responsibility, p. 656 “Regressing” from Unusual to Usual, p. 730 Complementary and Alternative Medicine, p. 863 <b>Critical Examinations of Pop Psychology:</b> The need for psychological science, p. 30 Perceiving order in random events, pp. 33–34 Do we use only 10 percent of our brains?, p. 109 Critiquing the evolutionary perspective, p. 139	Is there extrasensory perception?, pp. 167–169 Can hypnosis enhance recall? Coerce action? Be therapeutic? Alleviate pain?, pp. 220–221 Has the concept of “addiction” been stretched too far?, p. 248 Near-death experiences, p. 255 How much credit (or blame) do parents deserve?, p. 510 How valid is the Rorschach test?, p. 567 Is repression a myth?, pp. 562–563 Is Freud credible?, pp. 562–563 Is psychotherapy effective?, pp. 728–732 Evaluating alternative therapies, pp. 733–734 Do video games teach or release violence?, pp. 794–795 <b>Thinking Critically With Psychological Science:</b> The limits of intuition and common sense, pp. 30–34 The scientific attitude, pp. 34–35 “Critical thinking” introduced as a key term, pp. 35–36 The scientific method, pp. 38–39	Correlation and causation, pp. 48–49 Illusory correlation, p. 50 Exploring cause and effect, pp. 50–51 Random assignment, p. 51 Independent and dependent variables, pp. 52–53 Statistical reasoning, pp. 56–60 Descriptive statistics, pp. 57–59 Making inferences, pp. 60–61 <b>Scientific Detective Stories:</b> Is breast milk better than formula?, pp. 51–52 Our divided brains, pp. 114–117 Twin and adoption studies, pp. 125–128 Parallel processing, pp. 176–178 How do we see in color?, pp. 178–179 What affects our sleep patterns?, pp. 229–231 Why do we dream?, pp. 241–243 Is hypnosis an extension of normal consciousness or an altered state?, pp. 221–222 How do we store memories in our brains?, pp. 329–334 How are memories constructed?, pp. 347–352	Why do we feel hunger?, pp. 396–399 The pursuit of happiness: Who is happy, and why?, pp. 847–853 Why—and in whom—does stress contribute to heart disease?, pp. 451–453 How a child’s mind develops, pp. 476–484 Aging and intelligence, pp. 625–627 Self-esteem versus self-serving bias, pp. 596–598 What causes mood disorders?, pp. 674–681 Do prenatal viral infections increase risk of schizophrenia?, p. 688 Is psychotherapy effective?, pp. 728–731 Why do people fail to help in emergencies?, pp. 807–809 How and why is social support linked with health?, pp. 857–859 Do animals exhibit language?, pp. 868–870
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Study the **figures** and **graphs**, and read the captions carefully. Illustrations help clarify and support key concepts from the narrative, and understanding how to read and interpret graphs is a major component of this course.



measure (mm)



## Features

### AP® Exam Tip

Be prepared for at least a multiple-choice question that tests your ability to tell the difference between the James-Lange theory and the Cannon-Bard theory.

Pay attention to the **AP® Exam Tip** boxes, written by longtime AP® teacher Charlie Blair-Broeker. They provide helpful advice on what to pay close attention to and what common pitfalls to avoid so you can succeed on the AP® exam.

### FYI

The people who first dissected and labeled the brain used the language of scholars—Latin and Greek. Their words are actually attempts at graphic description: For example, *cortex* means “bark,” *cerebellum* is “little brain,” and *thalamus* is “inner chamber.”

**FYI** boxes are interesting tidbits of information that help connect the content you’re reading with real-life examples and research studies.

### Try This

Most of us would be unable to name the order of the songs on our favorite album or playlist. Yet, hearing the end of one piece cues (by association) an anticipation of the next. Likewise, when singing your national anthem, you associate the end of each line with the beginning of the next. (Pick a line out of the middle and notice how much harder it is to recall the *previous* line.)

Connect more deeply with the concepts you’re learning by putting them into real-life practice with **Try This** boxes.

## Close-up

### Improve Your Retention—and Your Grades!

2-4

How can psychological principles help you learn and remember, and do better on the AP® exam?

Do you, like most students, assume that the way to cement your new learning is to reread? What helps even more—and what this book therefore encourages—is repeated self-testing and rehearsal of previously studied material. Memory researchers Henry Roediger and Jeffrey Karpicke (2006) call this phenomenon the **testing effect**. They note that “testing is a powerful means of improving learning, not just assessing it.” In one of their studies, students recalled the meaning of 40

in the *Before You Move On* sections. After answering *Yourself* questions there, you can check your answers in appendix E at the end of this text and reread as needed.

Finally, *review*: Read over any notes you have taken with an eye on the module’s organization, and quickly review the whole module. Write or say what a concept is to check your understanding.

Survey, question, read, retrieve, review. I have organized this book’s modules to facilitate your use of the SQ3R study system. Each module begins with a list of objectives that aid your *survey*. Headings and the numbered Learning Objective Questions at the beginning of main sections suggest issues

Apply psychological findings to your life with **Close-up** boxes. This feature encourages application of new concepts by providing high-interest, real-life examples.

## Thinking Critically About

### Does Viewing Media Violence Trigger Violent Behavior?

Was the judge who, in 1993, tried two British 10-year-olds for the murder of a 2-year-old right to suspect that the pair had been influenced by “violent video films”? Were the American media right to wonder if Adam Lanza, the 2012 mass killer of 20 children and their teachers at Connecticut’s Sandy Hook school, was influenced by his playing of the video games found stockpiled in his home? To understand how violence viewing leads to violent behavior, researchers have done some 600 correlational and experimental studies (Gentile, 2008; Comstock, 2008; Murray, 2008). Correlational studies do support this link:

In the United States and Canada, homicide rates doubled between 1957 and 1974, just when TV was introduced and spreading. Moreover, census regions with later dates

people, when irritated, to react more cruelly? To some extent, it does. This is especially so when an attractive person commits seemingly justified, realistic violence that goes unpunished and causes no visible pain or harm (Donnerstein, 1998, 2011).

The violence-viewing effect seems to stem from at least two factors. One is *imitation* (Geen & Thomas, 1986). Children as young as 14 months will imitate acts they observe on TV (Meltzoff & Moore, 1989, 1997). As they watch, their brains simulate the behavior, and after this inner rehearsal they become more likely to act it out. Thus, in one experiment, violent play increased sevenfold immediately after children viewed *Power Rangers* episodes (Boyatzis et al., 1995). As happened in the Bobo doll experiment, children often precisely imitated the models’ violent acts—in this case, flying karate kicks.

Prolonged exposure to violence also *desensitizes* viewers.

Exercise your brain with the **Thinking Critically About** boxes. These boxes sharpen your analytical skills by modeling a critical thinking approach to key issues in psychology, and encourage you to apply psychological research to current topics. Before you know it, you’ll be thinking like a psychological scientist!

## Each module concludes with a unique review.

Test yourself using the **Module Review**, organized by that module’s learning objectives, so you can be sure you’ve mastered all of the key concepts.

### Module 9 Review

#### 9-1 Why are psychologists concerned with human biology?

- Psychologists working from a *biological* perspective study the links between biology and behavior.
- We are biopsychosocial systems, in which biological, psychological, and social-cultural factors interact to influence behavior.

#### 9-2 What are neurons and neural impulses?

- *Neurons* are the basic units of the nervous system, the body’s communication system.
- A neuron receives information and sends signals to other neurons.
- Some axons are myelinated, which allows for faster transmission of signals.

#### 9-3 How do nerve cells communicate with other nerve cells?

- When action potentials reach the end of an axon (the axon terminals), they stimulate the release of *neurotransmitters*.
- These chemical messengers carry a message from the sending neuron across a *synapse* to receptor sites on a receiving neuron.

### Multiple-Choice Questions

- Multiple sclerosis is a result of degeneration in the
  - dendrite.
  - axon.
  - myelin sheath.
  - terminal button.
  - neuron.
- Junita does not feel like getting out of bed, has lost her appetite, and feels tired for most of the day. Which of the following neurotransmitters likely is in short supply for Junita?
  - Dopamine
  - Acetylcholine
  - GABA
  - Serotonin
- Which neurotransmitter inhibits CNS activity in order to calm a person down during stressful situations?
  - GABA
  - Norepinephrine
  - Acetylcholine
  - Dopamine
  - Serotonin
- Phrenology has been discredited, but which of the following ideas has its origins in phrenology?
  - Brain lateralization
  - Brain cavities contributing to sense of humor
  - Bumps in the left hemisphere leading to emotional responses
  - Brain lateralization

### Practice FRQs

- While hiking, Ken stumbled and fell down a 10-foot drop-off. Upon landing, he sprained his ankle badly. Ken was surprised that he felt very little pain for the first half hour. Explain how the following helped Ken feel little pain in the moments after the injury.
  - Endorphins
  - The synapse
- Explain the role each of the following plays in sending a message through a neuron.
  - Dendrites
  - Axon
  - Myelin sheath

(3 points)

Improve your retention by testing yourself at the end of each module with **Multiple-Choice Questions** and skill-building **Practice FRQs**.

#### Answer

**1 point:** Endorphins are natural, opiate-like neurotransmitters linked to controlling pain.

and vitality into

Each unit ends with a comprehensive AP<sup>®</sup>-style review.

## Unit I Review

### Key Terms and Concepts to Remember

empiricism, p. 3  
 structuralism, p. 4  
 functionalism, p. 4  
 experimental psychology, p. 5

behavioral psychology, p. 12  
 biological psychology, p. 12  
 applied research, p. 14  
 industrial-organizational (I/O)

### Key Contributors to Remember

Wilhelm Wundt, p. 3	Sigmund Freud, p. 5	Jean Piaget, p. 9
G. Stanley Hall, p. 3	John B. Watson, p. 6	Charles Darwin, p. 10
William James, p. 4	B. F. Skinner, p. 6	Dorothea Dix, p. 14
Mary Whiton Calkins, p. 4	Carl Rogers, p. 6	

At the end of each unit, make sure you know all the **Key Terms and Concepts** and can explain the importance of each **Key Contributor** before moving on to the **AP<sup>®</sup> Exam Practice Questions**.

## AP<sup>®</sup> Exam Practice Questions

### Multiple-Choice Questions

- Which perspective would be most useful when explaining how people from different countries express anger?
  - Social-cultural
  - Psychodynamic
  - Behavioral
- Which of the following professionals is required to have a medical degree?

### Free-Response Questions

- Sam Greene noticed an ad for an Internet dating service that claimed more people who used its service are in long-term relationships than people who didn't. Sam, a good critical thinker, knows this isn't enough to claim that the service causes people to find long-term love and wants to create an experiment to investigate. Use the following terms to describe an experiment that would support or dispute the ad's claim.
  - Hypothesis
  - Random sample

**1 point:** Sam would need to operationally define what is meant by use of the Internet service, possibly including a precise number of visits to the website or time spent on the website. The phrase *long-term relationship* would also need an operational definition, possibly by the number of months together or a formal commitment (like engagement or marriage). [↪ Page 39](#)

**1 point:** In Sam's study, the use of the online dating service is the independent variable. [↪ Page 52](#)

**1 point:** The number of long-term relationships is the dependent variable. [↪ Page 52](#)

**1 point:** Sam will need to calculate statistical significance for the experimental findings. In order to claim support for the hypothesis, the results need to show that there is no more than a 5 percent chance the findings are due to chance. [↪ Page 60](#)

The **AP<sup>®</sup>-Style Multiple Choice Questions** and **Free-Response Questions** cover material from the unit to help you check your mastery of everything you've just learned. Once you get everything right, you're ready to move to the next unit!

#### Rubric for Free-Response Question 1

**1 point:** The hypothesis in this context is that the Internet dating service causes (or leads to) long-term relationships. [↪ Page 38](#)

**1 point:** Since the population of interest for this study should be people who are looking for long-term relationships, selecting a random sample of adults seeking relationships would help assure that the conclusions could be fairly generalized to the dating public. [↪ Page 43](#)

**1 point:** In this case, participants should be randomly assigned to use of the Internet service (the experimental group) or not (the control group). [↪ Page 51](#)

The end-of-book **Practice AP<sup>®</sup>-Style Exam** covers material learned through the entire course, simulating the real exam. This comprehensive test ensures that you get enough practice so you can strive for a 5 on the day of the exam.

## Enrichment Modules

Learning about psychology doesn't stop after you take the exam in May. Continue your exploration with Enrichment Modules 81–85, to help round out your course and prepare you for further psychology study in college and beyond.



## Innovative Multimedia Supplements Package

### For Students

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#### **STRIVE FOR A 5: PREPARING FOR THE AP<sup>®</sup> PSYCHOLOGY EXAMINATION**

Prepared by longtime AP<sup>®</sup> teachers Allison Herzig, Nathaniel Naughton, Laura Brandt, and Tina Athanasopoulos, this supplement serves as a complete study guide and as the optimal preparation resource for the AP<sup>®</sup> exam. The unit-by-unit study guide reinforces the topics and key concepts covered in the text and on the AP<sup>®</sup> exam, and the two AP<sup>®</sup>-style practice tests at the end provide you with the opportunity to tackle the most important piece of the course.

*Strive for a 5* begins with a context-setting, big-picture overview of each unit, along with a practical study tip. Next, there is a detailed, module-by-module review, which is organized as follows:

##### **Before You Read**

- Module summary, list of key terms and names in the module

##### **While You Read**

- Essential questions to answer for each module, organized by the numbered learning objectives

##### **After You Read**

- Application and vocabulary questions for you to practice what you've learned without looking at the book

##### **Check Yourself**

- High-level, open-ended questions that require you to synthesize what you've learned throughout the unit

The test preparation section of *Strive for a 5* is a comprehensive test review resource. To help you focus your efforts, the guide offers detailed test preparation tips, suggestions for setting a test preparation schedule, and advice on how to study effectively and efficiently. The guide includes two sample practice tests simulating the AP<sup>®</sup> exam, with solutions and sample grading rubrics found on the teacher's website and on the Teacher's Resource CD. Information about purchasing the *Strive for a 5* guide may be found on the catalog page (<http://highschool.bfwpub.com/MyersAP2e>).

#### **BOOK COMPANION SITE**

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Teacher's Edition (*Amy Fineburg, A+ College Ready*)

TE-Book (e-Book version of the Teacher's Edition with integrated supplements)

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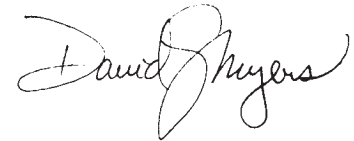
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\* \* \*

What an amazing success story AP® Psychology has become since 1992, when 3916 students took the first exam. As of 2013, 1.8 million students had sat for AP® Psychology exams, and more than 2 million had taken the course. For me, it has been an honor to support the teaching of our humanly significant discipline to so many of those students, and a great pleasure to have met or corresponded with so many AP® teachers and their students. It is also a keenly felt responsibility. So please do feel free to be in touch with your feedback and suggestions.

With every good wish,

A handwritten signature in black ink that reads "David Myers". The signature is fluid and cursive, with the first letters of "David" and "Myers" being capitalized and prominent.

[www.davidmyers.org](http://www.davidmyers.org)

# Myers' Psychology for AP<sup>®</sup>

# Unit 1

## Psychology's History and Approaches

### Modules

- 1 Psychology's History
- 2 Psychology's Big Issues and Approaches
- 3 Careers in Psychology

For people whose exposure to psychology comes from news stories and TV, psychologists seem to analyze personality, offer counseling, dispense child-raising advice, examine crime scenes, and testify in court. Do they? *Yes*, and much more. Consider some of psychology's research questions, which you will be learning more about in this text.

- Have you ever found yourself reacting to something as one of your biological parents would—perhaps in a way you vowed you never would—and then wondered how much of your personality you inherited? *To what extent do genes predispose our person-to-person differences in personality? To what extent do home and community environments shape us?*
- Have you ever worried about how to act among people of a different culture, race, gender, or sexual orientation? *In what ways are we alike as members of the human family? How do we differ?*
- Have you ever awakened from a nightmare and, with a wave of relief, wondered why you had such a crazy dream? *How often, and why, do we dream?*
- Have you ever played peekaboo with a 6-month-old and wondered why the baby finds the game so delightful? The infant reacts as though, when you momentarily move behind a door, you actually disappear—only to reappear out of thin air. *What do babies actually perceive and think?*



- Have you ever wondered what fosters school and work success? *Are some people just born smarter? And does sheer intelligence explain why some people get richer, think more creatively, or relate more sensitively?*
- Have you ever become depressed or anxious and wondered whether you'll ever feel "normal"? *What triggers our bad moods—and our good ones? Where is the line between a normal mood swing and a psychological disorder for which someone should seek help?*
- Have you ever wondered how the Internet, video games, and electronic social networks affect people? *How do today's electronic media influence how we think and how we relate?*

Psychology is a science that seeks to answer such questions about us all—how and why we think, feel, and act as we do.



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Ariadne Van Zandt/Alamy



Jim Craigmyler/Corbis

**A smile is a smile the world around** Throughout this book, you will see examples not only of our cultural and gender diversity but also of the similarities that define our shared human nature. People in different cultures vary in when and how often they smile, but a naturally happy smile *means* the same thing anywhere in the world.

# Module 1

## Psychology's History

### Module Learning Objectives

1-1

Describe how psychology developed from its prescientific roots in early understandings of mind and body to the beginnings of modern science.

1-2

Describe some important milestones in psychology's early development.

1-3

Describe how psychology continued to develop from the 1920s through today.



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## Psychology's Roots

Once upon a time, on a planet in this neighborhood of the universe, there came to be people. Soon thereafter, these creatures became intensely interested in themselves and in one another: *“Who are we? What produces our thoughts? Our feelings? Our actions? And how are we to understand and manage those around us?”*

### AP® Exam Tip

To assist your active learning of psychology, Learning Objectives are grouped together at the start of each module, and then framed as questions that appear at the beginning of major sections.

### Prescientific Psychology

1-1

How did psychology develop from its prescientific roots in early understandings of mind and body to the beginnings of modern science?

We can trace many of psychology's current questions back through human history. These early thinkers wondered: How does our mind work? How does our body relate to our mind? How much of what we know comes built in? How much is acquired through experience? In India, Buddha pondered how sensations and perceptions combine to form ideas. In China, Confucius stressed the power of ideas and of an educated mind. In ancient Israel, Hebrew scholars anticipated today's psychology by linking mind and emotion to the body; people were said to think with their heart and feel with their bowels.

In ancient Greece, the philosopher-teacher Socrates (469–399 B.C.E.) and his student Plato (428–348 B.C.E.) concluded that mind is separable from body and continues after the body dies, and that knowledge is innate—born within us. Unlike Socrates and Plato, who derived principles by logic, Plato's student Aristotle (384–322 B.C.E.) had a love of data. An intellectual ancestor of today's scientists, Aristotle derived principles from careful observations. Moreover, he said knowledge is *not* preexisting (sorry, Socrates and Plato); instead it grows from the experiences stored in our memories.

The next 2000 years brought few enduring new insights into human nature, but that changed in the 1600s, when modern science began to flourish. With it came new theories of human behavior, and new versions of the ancient debates. A frail but brilliant Frenchman named René Descartes (1595–1650) agreed with Socrates and Plato about the existence of innate ideas and mind's being “entirely distinct from body” and able to survive its death. Descartes' concept of mind forced him to conjecture, as people have ever since, how the immaterial mind and physical body communicate. A scientist as well as a philosopher, Descartes dissected animals and concluded that the fluid in the brain's cavities contained “animal spirits.” These spirits, he surmised, flowed from the brain through what we call the nerves (which he thought were hollow) to the muscles, provoking movement. Memories formed as experiences opened pores in the brain into which the animal spirits also flowed.

Descartes was right that nerve paths are important and that they enable reflexes. Yet, genius though he was, and standing upon the knowledge accumulated from 99+ percent of our human history, he hardly had a clue of what today's average 12-year-old knows. Indeed, most of the scientific story of our self-exploration—the story told in this book—has been written in but the last historical eye-blink of human time.

Meanwhile, across the English Channel in Britain, science was taking a more down-to-earth form, centered on experiment, experience, and common-sense judgment. Francis Bacon (1561–1626) became one of the founders of modern science, and his influence lingers in the experiments of today's psychological science. Bacon also was fascinated by the human mind and its failings. Anticipating what we have come to appreciate about our mind's hunger to perceive patterns even in random events, he wrote that “the human

understanding, from its peculiar nature, easily supposes a greater degree of order and equality in things than it really finds" (*Novum Organum*, 1620). He also foresaw research findings on our noticing and remembering events that confirm our beliefs: "All superstition is much the same whether it be that of astrology, dreams, omens . . . in all of which the deluded believers observe events which are fulfilled, but neglect and pass over their failure, though it be much more common."

Some 50 years after Bacon's death, John Locke (1632–1704), a British political philosopher, sat down to write a one-page essay on "our own abilities" for an upcoming discussion with friends. After 20 years and hundreds of pages, Locke had completed one of history's greatest late papers (*An Essay Concerning Human Understanding*), in which he famously argued that the mind at birth is a *tabula rasa*—a "blank slate"—on which experience writes. This idea, adding to Bacon's ideas, helped form modern **empiricism**, the idea that what we know comes from experience, and that observation and experimentation enable scientific knowledge.

**empiricism** the view that knowledge originates in experience and that science should, therefore, rely on observation and experimentation.

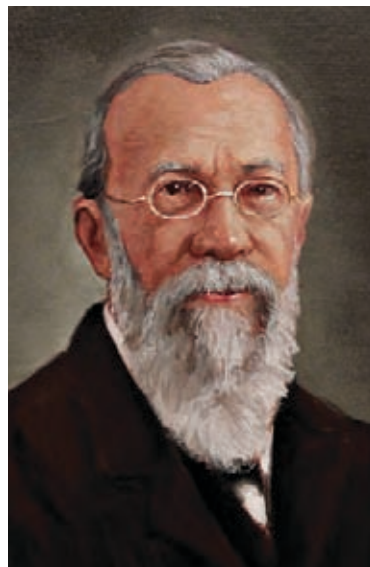
## Psychological Science Is Born

1-2

What are some important milestones in psychology's early development?

Philosophers' thinking about thinking continued until the birth of psychology as we know it, on a December day in 1879, in a small, third-floor room at Germany's University of Leipzig. There, two young men were helping an austere, middle-aged professor, Wilhelm Wundt, create an experimental apparatus. Their machine measured the time lag between people's hearing a ball hit a platform and their pressing a telegraph key (Hunt, 1993). Curiously, people responded in about one-tenth of a second when asked to press the key as soon as the sound occurred—and in about two-tenths of a second when asked to press the key as soon as they were consciously aware of perceiving the sound. (To be aware of one's awareness takes a little longer.) Wundt was seeking to measure "atoms of the mind"—the fastest and simplest mental processes. So began the first psychological laboratory, staffed by Wundt and by psychology's first graduate students. (In 1883, Wundt's American student G. Stanley Hall went on to establish the first formal U.S. psychology laboratory, at Johns Hopkins University.)

Before long, this new science of psychology became organized into different branches, or schools of thought, each promoted by pioneering thinkers. These early schools included *structuralism*, *functionalism*, and *behaviorism*, described here (with more on behaviorism in Modules 26–30), and two schools described in later modules: Gestalt psychology (Module 19) and psychoanalysis (Module 55).



**Wilhelm Wundt** Wundt established the first psychology laboratory at the University of Leipzig, Germany.

### FYI

Information sources are cited in parentheses, with name and date. Every citation can be found in the end-of-book References, with complete documentation that follows American Psychological Association (APA) style.

### AP® Exam Tip

Every question on the AP® Psychology exam will reflect the fact that psychology is a science built on the tradition of Wundt and his laboratory. Correct answers on the test are based on what research has revealed; not on "common sense"!

### Edward Bradford Titchener

Titchener used introspection to search for the mind's structural elements.



## Thinking About the Mind's Structure

Soon after receiving his Ph.D. in 1892, Wundt's student Edward Bradford Titchener joined the Cornell University faculty and introduced **structuralism**. As physicists and chemists discerned the structure of matter, so Titchener aimed to discover the structural elements of mind. His method was to engage people in self-reflective *introspection* (looking inward), training them to report elements of their experience as they looked at a rose, listened to a metronome, smelled a scent, or tasted a substance. What were their immediate sensations, their images, their feelings? And how did these relate to one another? Titchener shared with the English essayist C. S. Lewis the view that "there is one thing, and only one in the whole universe which

we know more about than we could learn from external observation." That one thing, Lewis said, is ourselves. "We have, so to speak, inside information" (1960, pp. 18–19).

Alas, introspection required smart, verbal people. It also proved somewhat unreliable, its results varying from person to person and experience to experience. Moreover, we often just don't know why we feel what we feel and do what we do. Recent studies indicate that people's recollections frequently err. So do their self-reports about what, for example, has caused them to help or hurt another (Myers, 2002). As introspection waned, so did structuralism.

"You don't know your own mind." -JONATHAN SWIFT, *POLITE CONVERSATION*, 1738

## Thinking About the Mind's Functions

Hoping to assemble the mind's structure from simple elements was rather like trying to understand a car by examining its disconnected parts. Philosopher-psychologist William James thought it would be more fruitful to consider the evolved functions of our thoughts and feelings. Smelling is what the nose does; thinking is what the brain does. But *why* do the nose and brain do these things? Under the influence of evolutionary theorist Charles Darwin, James assumed that thinking, like smelling, developed because it was *adaptive*—it contributed to our ancestors' survival. Consciousness serves a function. It enables us to consider our past, adjust to our present, and plan our future. As a **functionalist**, James encouraged explorations of down-to-earth emotions, memories, willpower, habits, and moment-to-moment streams of consciousness.

James' greatest legacy, however, came less from his laboratory than from his Harvard teaching and his writing. When not plagued by ill health and depression, James was an impish, outgoing, and joyous man, who once recalled that "the first lecture on psychology I ever heard was the first I ever gave." During one of his wise-cracking lectures, a student interrupted and asked him to get serious (Hunt, 1993). He loved his students, his family, and the world of ideas, but he tired of painstaking chores such as proofreading. "Send me no proofs!" he once told an editor. "I will return them unopened and never speak to you again" (Hunt, 1993, p. 145).

James displayed the same spunk in 1890, when—over the objections of Harvard's president—he admitted Mary Whiton Calkins into his graduate seminar (Scarborough & Furumoto, 1987). (In those years women lacked even the right to vote.) When Calkins joined, the other students (all men) dropped out. So James tutored her alone. Later, she finished all the requirements for a Harvard Ph.D., outscoring all the male students on the qualifying exams. Alas, Harvard denied her the degree she had earned, offering her instead a degree from Radcliffe College, its undergraduate sister school for women. Calkins resisted the unequal treatment and refused the degree. (More than a century

**structuralism** early school of thought promoted by Wundt and Titchener; used introspection to reveal the structure of the human mind.

**functionalism** early school of thought promoted by James and influenced by Darwin; explored how mental and behavioral processes function—how they enable the organism to adapt, survive, and flourish.



**William James and Mary Whiton Calkins** James was a legendary teacher-writer who authored an important 1890 psychology text. He mentored Calkins, who became a pioneering memory researcher and the first woman to be president of the American Psychological Association (APA).

**Margaret Floy Washburn** The first woman to receive a psychology Ph.D., Washburn synthesized animal behavior research in *The Animal Mind*.

later, psychologists and psychology students were lobbying Harvard to posthumously award Calkins the Ph.D. she earned [*Feminist Psychologist*, 2002].) Calkins nevertheless went on to become a distinguished memory researcher and the APA's first female president in 1905.

When Harvard denied Calkins the claim to being psychology's first female psychology Ph.D., that honor fell to Margaret Floy Washburn, who later wrote an influential book, *The Animal Mind*, and became the second female APA president in 1921. Although Washburn's thesis was the first foreign study Wundt published in his journal, her gender meant she was barred from joining the organization of **experimental psychologists** (who explore behavior and thinking with experiments), despite its being founded by Titchener, her own graduate adviser (Johnson, 1997). What a different world from the recent past—1996 to 2013—when women claimed two-thirds or more of new U.S. psychology Ph.D.s and were 9 of the 18 elected presidents of the science-oriented Association for Psychological Science. In Canada and Europe, too, most recent psychology doctorates have been earned by women.

James' influence reached even further through his dozens of well-received articles, which moved the publisher Henry Holt to offer a contract for a textbook of the new science of psychology. James agreed and began work in 1878, with an apology for requesting two years to finish his writing. The text proved an unexpected chore and actually took him 12 years. (Why am I not surprised?) More than a century later, people still read the resulting *Principles of Psychology* and marvel at the brilliance and elegance with which James introduced psychology to the educated public.

## Psychological Science Develops

1-3

How did psychology continue to develop from the 1920s through today?

In psychology's early days, Wundt and Titchener focused on inner sensations, images, and feelings. James, too, engaged in introspective examination of the stream of consciousness and of emotion. Sigmund Freud emphasized the ways emotional responses to childhood experiences and our unconscious thought processes affect our behavior. Thus, until the 1920s, *psychology* was defined as "the science of mental life."

**experimental psychology** the study of behavior and thinking using the experimental method.

### AP® Exam Tip

There are lots of important people in psychology. As you study, focus on the significance of their accomplishments. You are more likely to be tested on what a finding means than who discovered it.



**John B. Watson and Rosalie Rayner**

Working with Rayner, Watson championed psychology as the science of behavior and demonstrated conditioned responses on a baby who became famous as “Little Albert.” (More about Watson’s controversial study in Module 26.)



**behaviorism** the view that psychology (1) should be an objective science that (2) studies behavior without reference to mental processes. Most research psychologists today agree with (1) but not with (2).

**humanistic psychology** a historically significant perspective that emphasized the growth potential of healthy people.

And so it continued until the 1920s, when the first of two larger-than-life American psychologists appeared on the scene. Flamboyant and provocative John B. Watson, and later the equally provocative B. F. Skinner, dismissed introspection and redefined *psychology* as “the scientific study of observable behavior.” After all, they said, science is rooted in observation. You cannot observe a sensation, a feeling, or a thought, but you *can* observe and record people’s *behavior* as they respond to different situations. They further suggested that our behavior is influenced by learned associations, through a process called *conditioning*. Many agreed, and the **behaviorists** were one of two major forces in psychology well into the 1960s. (More on these psychologists in Modules 26–30.)

The other major force was *Freudian psychology*, which emphasized the ways our unconscious thought processes and our emotional responses to childhood experiences affect our behavior. (In modules to come, we’ll look more closely at Sigmund Freud’s teachings, including his theory of personality and his views on unconscious sexual conflicts and the mind’s defenses against its own wishes and impulses. We will also study the *psychodynamic approach*, which is the updated, modern-day version of Freud’s ideas.)

As the behaviorists had done in the early 1900s, two other groups rejected the definition of psychology that was current in the 1960s. The first, the **humanistic psychologists**, led by Carl Rogers and Abraham Maslow, found both Freudian psychology and behaviorism too limiting. Rather than focusing on the meaning of early childhood memories or the learning of conditioned responses, the humanistic psychologists drew attention to ways that current environmental influences can nurture or limit our growth potential, and to the importance of having our needs for love and acceptance satisfied. (More on this in Module 57.)



**B. F. Skinner** A leading behaviorist, Skinner rejected introspection and studied how consequences shape behavior.

**Sigmund Freud** The controversial ideas of this famed personality theorist and therapist have influenced humanity’s self-understanding.





The rebellion of a second group of psychologists during the 1960s is now known as the *cognitive revolution*, and it led the field back to its early interest in mental processes, such as the importance of how our mind processes and retains information. Cognitive psychology scientifically explores the ways we perceive, process, and remember information. **Cognitive neuroscience**, an interdisciplinary study, has enriched our understanding of the brain activity underlying mental activity. The cognitive approach has given us new ways to understand ourselves and to treat disorders such as depression, as we shall see in Module 71.

To encompass psychology's concern with observable behavior *and* with inner thoughts and feelings, today we define **psychology** as the *science of behavior and mental processes*. Let's unpack this definition. *Behavior* is anything an organism *does*—any action we can observe and record. Yelling, smiling, blinking, sweating, talking, and questionnaire marking are all observable behaviors. *Mental processes* are the internal, subjective experiences we infer from behavior—sensations, perceptions, dreams, thoughts, beliefs, and feelings.

The key word in psychology's definition is *science*. Psychology, as I will emphasize throughout this book, is less a set of findings than a way of asking and answering questions. My aim, then, is not merely to report results but also to show you how psychologists play their game. You will see how researchers evaluate conflicting opinions and ideas. And you will learn how all of us, whether scientists or simply curious people, can think smarter when describing and explaining the events of our lives.

**cognitive neuroscience** the interdisciplinary study of the brain activity linked with cognition (including perception, thinking, memory, and language).

**psychology** the science of behavior and mental processes.

### AP® Exam Tip

Memory research reveals a *testing effect*: We retain information much better if we actively retrieve it by self-testing and rehearsing. (More on this in the Close-up box at the end of Module 2.) To bolster your learning and memory, take advantage of all the self-testing opportunities you'll find throughout this text. These "Before You Move On" sections will appear at the end of each main section of text. The *Ask Yourself* questions will help you make the material more meaningful to your own life (and therefore more memorable). You can check your answers to the *Test Yourself* review questions in Appendix E at the end of the book.

## Before You Move On

### ▶ ASK YOURSELF

How do you think psychology might change as more and more women contribute their ideas to the field?

### ▶ TEST YOURSELF

What event defined the founding of modern scientific psychology?

*Answers to the Test Yourself questions can be found in Appendix E at the end of the book.*

## Module 1 Review

1-1

How did psychology develop from its prescientific roots in early understandings of mind and body to the beginnings of modern science?

- Psychology traces its roots back through recorded history to India, China, the Middle East, and Europe. Buddha and Confucius focused on the power and origin of ideas. The ancient Hebrews, Socrates, Plato, and Aristotle pondered whether mind and body are connected or distinct, and whether human ideas are innate or result from experience.
- Descartes and Locke reengaged those ancient debates, with Locke offering his famous description of the mind as a "blank slate" on which experience writes. The ideas of Bacon and Locke contributed to the development of modern *empiricism*.

1-2

What are some important milestones in psychology's early development?

- Wilhelm Wundt established the first psychological laboratory in 1879 in Germany.
- Two early schools of psychology were *structuralism* and *functionalism*.
- Structuralism, promoted by Wundt and Titchener, used self-reflection to learn about the mind's structure. Functionalism, promoted by James, explored how behavior and thinking function.

1-3

How did psychology continue to develop from the 1920s through today?

- Early researchers defined *psychology* as a "science of mental life."

- In the 1920s, under the influence of John B. Watson and the *behaviorists*, the field's focus changed to the "scientific study of observable behavior."
- In the 1960s, the *humanistic psychologists* and the *cognitive psychologists* revived interest in the study of mental processes.
- Psychology is now defined as the science of behavior and mental processes.

## Multiple-Choice Questions\*

- By seeking to measure "atoms of the mind," who established the first psychology laboratory?
  - Sigmund Freud
  - John B. Watson
  - Wilhelm Wundt
  - G. Stanley Hall
  - William James
- Which philosopher proposed that nerve pathways allowed for reflexes?
  - Socrates
  - René Descartes
  - John Locke
  - Aristotle
  - Plato
- Who coined the term "tabula rasa" (blank slate) to help explain the impact experience has on shaping an individual?
  - Francis Bacon
  - René Descartes
  - John B. Watson
  - Sigmund Freud
  - John Locke
- Which of the following best describes research typical of Wilhelm Wundt's first psychology laboratory?
  - Examining the unconscious to determine behavior motivation
  - Using a brain-scanning device to determine the impact events have on brain function
  - Measuring the reaction time between hearing a sound and pressing a button
  - Studying helping behavior, based on the premise that people are good
  - Examining how collective life experiences combine to create individuality
- With which of the following statements would John B. Watson most likely agree?
  - Psychology should study the growth potential in all people.
  - Psychology should study the unconscious.
  - Psychology should focus on observable behavior.
  - Psychology should study mental thought processes.
  - Psychology should study how culture and beliefs impact an individual.

## Practice FRQs\*\*

- The definition of psychology changed as the field evolved during the early years. Why did John B. Watson object to the definition preferred by Wundt, Titchener, and James? What group of psychologists did Watson's ideas influence? How did Watson redefine psychology?

### Answer

**1 point:** Watson objected to the "science of mental life" because he felt it was impossible to be scientific without observation.

**1 point:** Watson's ideas influenced the behaviorists.

**1 point:** Watson preferred limiting psychology to behavior, because behavior could be observed and scientifically analyzed.

- Identify the founder of structuralism, and explain structuralism's four foundational concepts.

**(6 points)**

\*Note: If you are a student using these Multiple-Choice Questions for self-testing, please consult with your teacher to check your answers.

\*\* "FRQ" stands for "Free-Response Question." The AP® exam contains two of these essay-style questions, which count for one-third of your final score. The actual FRQs will be complex, requiring you to integrate knowledge from across multiple modules, like the practice questions you will find at the end of each *unit* in this text. These simpler "Practice FRQs" that appear at the end of each *module*, along with a sample grading rubric, will help you get started practicing this skill.

# Module 2

## Psychology's Big Issues and Approaches

### Module Learning Objectives

- 2-1** Summarize the nature–nurture debate in psychology.
- 2-2** Describe psychology's three main levels of analysis and related perspectives.
- 2-3** Identify psychology's main subfields.
- 2-4** Explain how psychological principles can help you learn and remember, and do better on the AP® exam.



The young science of psychology developed from the more established fields of philosophy and biology. Wundt was both a philosopher and a physiologist. James was an American philosopher. Freud was an Austrian physician. Ivan Pavlov, who pioneered the study of learning (Module 26), was a Russian physiologist. Jean Piaget, the last century's most influential observer of children (Module 47), was a Swiss biologist. These “Magellans of the mind,” as Morton Hunt (1993) has called them, illustrate psychology's origins in many disciplines and many countries.

Like those early pioneers, today's psychologists are citizens of many lands. The International Union of Psychological Science has 71 member nations, from Albania to Zimbabwe. In China, the first university psychology department began in 1978; by 2008 there were nearly 200 (Han, 2008; Tversky, 2008). Moreover, thanks to international publications, joint meetings, and the Internet, collaboration and communication now cross borders. Psychology is *growing* and it is *globalizing*. The story of psychology—the subject of this book—continues to develop in many places, at many levels, with interests ranging from the study of nerve cell activity to the study of international conflicts.

Across the world, psychologists are debating enduring issues, viewing behavior from the differing perspectives offered by the subfields in which they teach, work, and do research.

### Psychology's Biggest Question

- 2-1** What is psychology's historic big issue?

Are our human traits present at birth, or do they develop through experience? This has been psychology's biggest and most persistent issue. As we have seen, the debate over the **nature–nurture issue** is ancient. The ancient Greeks debated this, with Plato assuming that we

#### AP® Exam Tip

Pay close attention to what David Myers, your author, is emphasizing as he tells the story of psychology. When he says the nature–nurture issue is the *biggest* question in psychology, that's a sign. It's a safe bet that this concept will be covered on the AP® exam.

**nature–nurture issue** the longstanding controversy over the relative contributions that genes and experience make to the development of psychological traits and behaviors. Today's science sees traits and behaviors arising from the interaction of nature and nurture.