

THE SCIENCE OF

PSYCHOLOGY⁴

AN APPRECIATIVE VIEW

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LAURA A. KING

THE SCIENCE OF

PSYCHOLOGY⁴

AN APPRECIATIVE VIEW

LAURA A. KING

University of Missouri, Columbia





THE SCIENCE OF PSYCHOLOGY: AN APPRECIATIVE VIEW, FOURTH EDITION

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for

Sam



LAURA KING

Laura King did her undergraduate work at Kenyon College, where, already an English major, she declared a second major in psychology during the second semester of her junior year. She completed her AB in English with high honors and distinction and in psychology with distinction in 1986. Laura then did graduate work at Michigan State University and the University of California, Davis, receiving her PhD in personality psychology in 1991.

Laura began her career at Southern Methodist University in Dallas, moving to the University of Missouri in 2001, where she is now a Curators' Professor of Psychological Science. In addition to seminars in the development of character, social psychology, and personality psychology, she has taught undergraduate lecture courses in introductory psychology, introduction to personality psychology, and social psychology. At SMU, she received six different teaching awards, including the "M" award for "sustained excellence" in 1999. At the University of Missouri, she received the Chancellor's Award for Outstanding Research and Creative Activity in 2004.

Her research, which has been funded by the National Institute of Mental Health and the National Science Foundation, has focused on a variety of topics relevant to the question of what it is that makes for a good life. She has studied goals, life stories, happiness, well-being, and meaning in life. In general, her work reflects an enduring interest in studying what is good and healthy in people. In 2001, she earned recognition for her research accomplishments with a Templeton Prize in Positive Psychology. In 2011, she received the Ed and Carol Diener Award for Distinguished Contributions to Personality Psychology. In 2015, she received the Society for Personality and Social Psychology Award for service to the field, in part for her efforts in bringing the science of psychology to students. Laura's research (often in collaboration with undergraduate and graduate students) has been published in *American Psychologist*, the *Journal of Personality and Social Psychology*, *Psychological Bulletin*, and *Psychological Science*.

Laura has held numerous editorial positions. Most recently she was editor-in-chief of the Personality and Individual Differences section of the *Journal of Research in Personality and Social Psychology*. She also served as editor-in-chief of the *Journal of Research in Personality* and associate editor for the *Journal of Personality and Social Psychology* and *Personality and Social Psychology Bulletin*, as well as on numerous grant panels. She has edited or coedited special sections of the *Journal of Personality* and *American Psychologist*.

In "real life," Laura is an accomplished cook and enjoys hosting lavish dinner parties, listening to music (mostly jazz vocalists and singer-songwriters), running with her faithful dog Bill, and swimming and debating with her son Sam.

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PREFACE



When Things Go Right for Students... Things Go Right for Instructors

Focusing on why things go right, *The Science of Psychology: An Appreciative View*, Fourth Edition, helps students understand and appreciate psychology as a science and as an integrated whole. Informed by student data, the fourth edition's program extends these themes and enhances their pedagogical value by guiding students toward topics they find the most challenging and then offering new learning resources to help students master them.

Appreciating Student Learning

Students today are as different from the learners of the last generation as the current discipline of psychology is from the field 35 years ago. Students now learn in multiple modalities; rather than sitting down and reading traditional printed chapters from beginning to end, their work preferences tend to be more visual and interactive. They like to access information in multiple ways and expect their course material to be engaging and personalized. *The Science of Psychology: An Appreciative View* supports learning by presenting content clearly with engaging examples, showing students what they know and do not know through the SmartBook[®] adaptive reading experience, providing assignable assessments through Connect Psychology[®], and by presenting key concepts in various ways.

Better Data, Smarter Revision, Improved Results


Students study more effectively with SmartBook.

- **Make It Effective.** 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 the tens of thousands of students who used Connect Psychology’s SmartBook.
- **Make It Accessible.** The information is graphically represented in a “heat map” showing specific concepts with which students have the most difficulty. By reviewing and revising these concepts, we can make them more accessible for students.

 McGraw-Hill Education Connect is a digital assignment and assessment platform that strengthens the link between faculty, students, and coursework, helping everyone accomplish more in less time. Connect Psychology includes assignable and assessable videos, quizzes, exercises, and interactivities, all associated with learning objectives for *The Science of Psychology: An Appreciative View*. Interactive assignments and videos allow students to experience and apply their understanding of psychology to the world with fun and stimulating activities.

Informing and Engaging Students on Psychological Concepts

Using Connect Psychology, students can learn the course material more deeply and study more effectively than ever before.

At the Remember and Understand levels of Bloom’s taxonomy, **Concept Clips**, now with audio, help students break down key themes and difficult concepts in psychology. Using easy-to-understand analogies, visual cues, and colorful animation, Concept Clips make psychology meaningful to everyday life.

New Concept Clips in the fourth edition include: Hypothesis and Theories; Forgetting; The Meaning of Dreams; The Four Phases of the Human Sexual Response; Sensation and Perception of Touch; Sex and Gender; Aggression, Conformity, and Obedience; Routes of Persuasion; Stereotypes/Prejudice/Discrimination; and Social Facilitation.

At the Understand and Apply levels of Bloom’s taxonomy, **Interactivities**, assignable through Connect, engage students with content through experiential activities. New activities include: 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.

At the Understand and Apply levels of Bloom’s taxonomy, **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 HEAT MAP STORY

APPRECIATING THE POWER OF STUDENT DATA

STEP 1. Over the course of three years, data points showing concepts that caused students the most difficulty were anonymously collected from Connect Psychology’s SmartBook for *The Science of Psychology*, 3e.



STEP 2. The data from **SmartBook** was provided to the author in the form of a **Heat Map**, which graphically illustrated “hot spots” in the text that impacted student learning.



STEP 3. Laura King used the **Heat Map** data to refine the content and reinforce student comprehension in the new edition. Additional quiz questions and assignable activities were created for use in Connect Psychology to further support student success.



RESULT: With empirically-based feedback at the paragraph and even sentence level, Laura King developed the new edition using precise student data to pinpoint concepts that caused students to struggle.



Naturalistic Observation

Open Coding Task

Watch the video clip of young Jasmine and keep a record of what you observe by typing brief statements in your research notebook to the right of the video. Feel free to replay the clip as many times as you need in order to get a good sense of what sort of behaviors you are seeing. We have included some sample observations to get you started. Once you are finished, click the Next button.

Sample statements

- At 33 months, Jasmine plays with toys in a group setting.
- J. crawls on the floor.
- J. returns a book to the shelf when asked by an adult.

NARRATION: On Replay Transcript

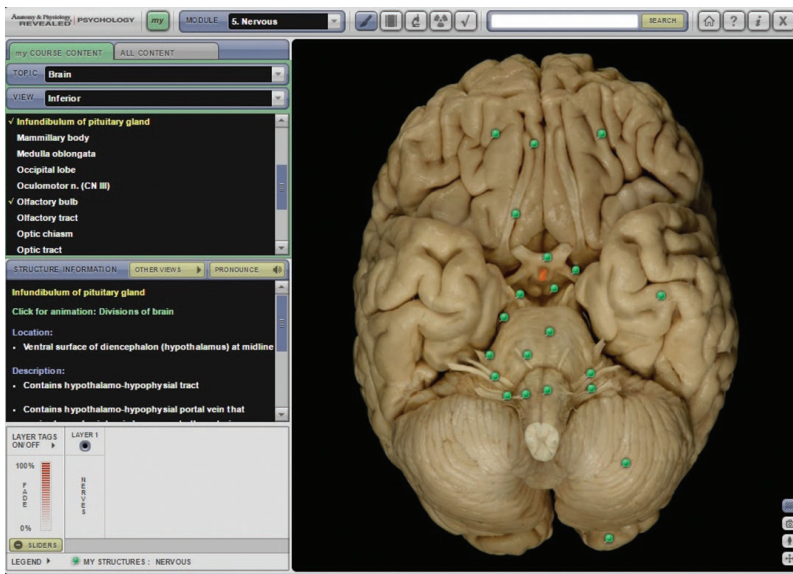
PREV NEXT

At the Apply and Analyze levels of Bloom's taxonomy, **Critical Thinking** exercises offer in-depth arguments to sharpen students' critical thinking skills and prepare them to be more discerning consumers of psychology in their everyday lives. For each chapter, there are multiple sets of arguments accompanied by auto-graded assessments requiring students to think critically about claims presented as facts. These exercises can also be used in Connect as group activities or for discussion.

Connecting Anatomy and Physiology to the Science of Psychology

Two interactive tools allow for the exploration of the human anatomy most directly related to the study of psychology.

Anatomy and Physiology REVEALED® for Psychology McGraw-Hill Education presents an interactive tool that encourages the exploration of biological structures related to psychology. Assignments in Connect Psychology walk students through virtual nervous system and cell dissection experiences, include views of CT scans and x-ray imaging and histology, and link the biology of behavior to anatomy through illustrated animations.



Touring the Brain and Touring the Senses Two digital components, **Touring the Brain and Nervous System** and **Touring the Senses**, offer detailed digital overlays of key structures. These tours provide students with practice in grasping key biological structures and processes that are essential to an appreciation of the role of science in psychology and success in the course.

Providing Powerful Reporting

Whether a class is face-to-face, hybrid, or entirely online, Connect Psychology provides the tools needed to reduce the amount of time and energy instructors require 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 their 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.

Expand each category to see scores.

	Questions	Students submitted	Category score (Best assignment attempt)
Bloom's	38	30/35	78%
+ Analyze	214	32/35	87%
+ Apply	8	29/35	86%
+ Create	24	31/35	92%
+ Evaluate	257	35/35	93%
+ Remember	238	34/35	89%
+ Understand			

Expand each category to see scores.

	Questions	Students submitted	Category score (Best assignment attempt)
APA Outcome			
+ 1.1: Describe key concepts, principles, and overarching themes in psychology	315	34/35	89.15%
+ 1.2: Develop a working knowledge of psychology's content domains	459	33/35	88.75%
+ 1.3: Describe applications of psychology	132	35/35	90.5%
+ 2.1: Use scientific reasoning to interpret psychological phenomena	299	28/35	78.9%
+ 2.2: Demonstrate psychology information literacy	304	34/35	83.5%
+ 2.3: Engage in innovative and integrative thinking and problem solving	1	35/35	85.5%
+ 2.4: Interpret, design, and conduct basic psychological research	16	34/35	81.7%
+ 3.1: Apply ethical standards to evaluate psychological science and practice	6	33/35	92.5%
+ 3.2: Apply psychological content and skills to career goals	35	29/35	73.8%
+ 5.2: Exhibit self-efficacy and self-regulation	24	33/35	81.6%

Appreciating Why Things Go Right

The Science of Psychology: An Appreciative View continues to emphasize function before dysfunction. Rather than focusing on why things go wrong, the focus is first on *why things go right*.

One of the challenges of this alternative focus is that it goes against human nature. Research in psychology itself tells us that the negative captures our attention more readily than the positive. There is no question that bad news makes headlines. A terrorist attack, a global recession, disturbing climate changes, political scandals, and

the everyday demands of juggling work, family, and finances—these and other issues loom large for us all. We strive and struggle to find balance and to sculpt a happy life. The science of psychology has much to offer in terms of helping us understand the choices we make and the implications of these choices for ourselves and for others around the world.

The Science of Psychology: An Appreciative View communicates the nature and breadth of psychology—and its value as a science—with an appreciative perspective. Its primary goal is to help students to think like psychological scientists.

Appreciating Psychology as an Integrated Whole

As with the previous editions, the continuing goal of *The Science of Psychology: An Appreciative View* is to present psychology as an integrated field in which the whole is greater than the sum of its parts, but the parts are essential to the whole. Accordingly, this fourth edition illuminates many areas where specialized subfields overlap and where research findings in one subfield support important studies and exciting discoveries in another. Students come to appreciate, for example, how neuroscientific findings inform social psychology and how discoveries in personality psychology relate to leadership in organizational settings. **Intersection** features showcase research at the crossroads of at least two areas and shed light on these intriguing connections.

The fourth edition includes many new Intersections showing the influence of work in one field of psychology on another. For example, the Intersection in the chapter “What Is Psychology?” links work in personality psychology with developmental psychology and cross-cultural psychology to explore the topic “Why Do We Grow Up, Psychologically?”

Appreciating Psychology as a Science

The Science of Psychology: An Appreciative View communicates the nature and breadth of psychology and its value as a science from an appreciative perspective. Its primary goal is to help students think like psychological scientists, which includes asking them questions about their own life experiences. Throughout, students’ curiosity is nurtured through timely, applied examples and a focus on what psychological science means for people going about daily life.

INTERSECTION

Personality, Developmental, and Cross-Cultural Psychology: Why Do We Grow Up, Psychologically?

Early adulthood can be a time of great change. Consider all the choices that are made and all the events that occur: leaving home, going to college, graduating, starting a career, finding a life partner, perhaps starting a family. These many events, experiences, and life changes, often clustered in a person’s 20s and 30s, have important ramifications throughout the rest of life.

Another type of change that occurs during this same time period is personality change. Specifically, between the ages of 18 and 40, people are likely to become more conscientious (responsible, reliable, and hardworking), more agreeable (kind and compassionate), and more emotionally stable (less worrying and prone to distress). That’s right: Research shows that over time, people tend to become more mature (Specht & others, 2014). This pattern of personality trait change has been termed the *maturity principle* because it appears that, on average, people are growing up, psychologically (Roberts, Wood, & Caspi, 2008).

It would seem to be great news that young slackers can grow up to be conscientious members of society. But what drives these changes? And why do many people show this pattern of personality change? Answering these questions requires scientific evidence from a diverse array of sources, including personality psychology, life-span development, and cross-cultural psychology (Bleidorn, 2015).

Like all psychological characteristics, becoming mature in early adulthood is likely the product of both genetics and the environment (Bleidorn, Kandler, & Caspi, 2014). Which matters more to personality development is a topic of debate.

A first approach, suggested by the leading trait theorists, is that these changes are largely controlled by biological or genetic processes (McCrae & Costa, 2008). These scholars believe that, regardless of experience, growing up psychologically is just what people do. Support for this idea comes from the fact that many studies show that genes have a substantial influence on personality characteristics throughout life (Bleidorn, 2015).

An alternative perspective suggests that these trait changes are a response to the roles people occupy in young adulthood (Roberts, Wood, & Smith, 2005). When a person becomes a spouse, an employee, or a parent, social expectations for their behavior change drastically. From this perspective, we grow up psychologically because life demands it. Support for this idea comes from the fact that social environments become more stable and exert more influence on personality beginning in young adulthood, just when maturation is taking place (Bleidorn, Kandler, & Caspi, 2014).



(first) © undepodger/Stock/Getty Images; (second) © Naborahtalima/Stock/Getty Images

Which perspective is correct? A fascinating way to resolve this issue is to examine personality maturation across different cultures. The strong genetic argument would predict little to no cultural variation in changes in personality traits over time. If maturation is driven by an unfolding biological process, it should not be affected by cultural differences. In contrast, if social roles trigger maturation, we might expect greater cultural variability in the timing of trait changes.

A study of over 880,000 young adults from 62 different countries (Bleidorn & others, 2013) showed that, across cultures, age was associated with higher levels of conscientiousness, agreeableness, and emotional stability. This means that regardless of country, young adults tended to show maturation, providing strong support for the genetic argument. However, and interestingly, experience *did* matter to the timing of these changes. Strikingly, the most important experience precipitating personality changes was employment. And in nations where young adults take on the role of full-time employee sooner (for example, Pakistan and Malaysia), changes in personality happened faster. In nations such as the United States and the Netherlands, where young adults delay full-time employment, the trait of conscientiousness, in particular, changed more gradually.

So, why do we grow up, psychologically? This research suggests that maturation can be thought of as an unfolding of biological process that occurs in and is affected by social demands. Many of us may have the capacity to become more responsible, considerate, and emotionally stable, but we may need the roles we occupy to push us toward that better, more mature self.

How have you grown up, psychologically?

The fourth edition's attention to function before dysfunction, up-to-date coverage, and broad scope reflect the field of psychology *today*. These qualities underscore psychology's vital and ongoing role as a *science that ever advances knowledge* about ourselves and our interactions in the world. Psychology is a vigorous young science and one that changes quickly. The text narrative interweaves the most current research with classic findings to give students an appreciation of this vitality. In the chapter "Social Psychology", for instance, the treatment of Milgram's classic study on obedience is complemented by an analysis of Burger's more recent attempts to recreate the study.

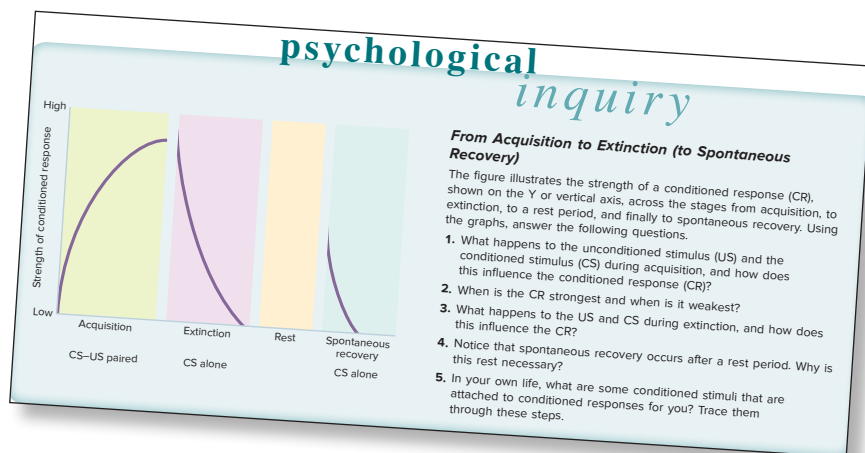
The **Psychological Inquiry** feature stimulates students' analytical thinking about psychology's practical applications. The selections reinforce student understanding of central aspects of research design, such as the difference between correlational and experimental studies and the concepts of independent and dependent variables. The selections in each chapter guide students' analysis of a figure, graph, or other illustration and include a set of critical thinking questions. For example, one of the Psychological Inquiry features in the chapter "Learning" prompts students to analyze graphical schedules of reinforcement and different patterns of responding to them.

In conjunction with creating current and contemporary course materials, *The Science of Psychology: An Appreciative View* includes citations that bring the most important recent and ongoing research into the text. These updated references give students and instructors the very latest that psychology has to offer on each topic.

Appreciating science also means appreciating disagreements in the field. Each chapter contains a **Critical Controversy** feature highlighting current psychological debates and posing thought-provoking questions that encourage students to examine the evidence on both sides. For example, the Critical Controversy in the chapter "Biological Foundations of Behavior" looks at whether oxytocin makes people more trusting, and this feature in the chapter "Memory" explores whether the pen is superior to the keyboard for taking notes in class.

Appreciating Psychology in the Workplace

Because *The Science of Psychology: An Appreciative View* is dedicated to connecting the science of psychology to students' everyday lives and their aspirations, it is only natural to include a chapter on the psychology of work. Nearly all students—some 95 percent—will one day hold a job. Sharing what psychologists have learned about practical matters—such as where employers find new hires, how employees can be fairly evaluated, and the place of work in the good life—is an opportunity that should not be missed. In this fourth edition, the chapter "Industrial and Organizational Psychology" has been updated with new features, including a Critical Controversy on the challenge of work–life balance.



CRITICAL CONTROVERSY

Does Oxytocin Make People More Trusting?

Unsurprisingly, oxytocin has been one of the most studied chemicals in all of the behavioral sciences. Imagine: a neurotransmitter that appears to be a kind of natural love potion. Some have called it "liquid trust"! Even better, oxytocin can be administered to people in a simple nasal spray.

Some of the earliest experiments involving administering oxytocin produced fascinating results. For instance, a team of investigators led by Moira Mikolajczak set out to examine whether oxytocin would lead people to be more trusting of another with personal information (Mikolajczak & others, 2010). Participants were randomly assigned to receive a nasal spray containing oxytocin or a placebo. The dependent variable, trust, was operationalized using "the envelope task." For this task, participants completed a ques-

... treated the envelope at all: Those who received oxytocin were just as protective of their personal information as those in the placebo group. What could explain the difference?

Comparing the earlier study to the newer ones, a key difference emerged: The original study was only "single blind." This means that, although participants did not know what they received in the nasal spray, the experimenter interacting with them did. Mikolajczak and colleagues rea-

Appreciating Psychology's Role in Health and Wellness

This fourth edition of *The Science of Psychology: An Appreciative View* continues to emphasize the relevance of psychology to the health and well-being of students and the people in their lives. As in prior editions, substantial discussion and examples focus on the scientific understanding of human strengths and capacities, health, and wellness in order to cultivate students' appreciation for how extensively psychology applies to their lives. These sections are crafted around the idea that although we sometimes think of "health behaviors" as a separate category of activities associated with physical and psychological wellness, the truth is that our bodies and minds are always entwined, and all of our behaviors are relevant to our capacity to function.

Appreciating Our Dynamic Field: Chapter-by-Chapter Changes

The fourth edition was revised in response to student "heat map" data that pinpointed the topics and concepts where students struggled the most. Based on this information, feedback from instructors, and changes in the field, we have made the following content revisions.

CHAPTER 1: WHAT IS PSYCHOLOGY?

- Revised the discussion of the scientific approach
- New Critical Controversy: "Can Facebook Make You Miserable?"
- Updated findings on the capacity for forgiveness, including research on racially motivated offenses and the role of religious faith in forgiveness
- Revised coverage on the evolutionary approach
- Expanded coverage of the sociocultural approach
- New Intersection: "Personality, Developmental, and Cross-Cultural Psychology: Why Do We Grow Up, Psychologically?"
- Expanded coverage of cross-cultural psychology

CHAPTER 2: PSYCHOLOGY'S SCIENTIFIC METHOD

- Clarified the definition of a theory and its application to human behavior
- Expanded coverage of empirical research
- Introduced a new analysis on the effects of procrastination
- New Intersection: "Motivation and Social Psychology: Can a Sense of Purpose Buffer Distress in the Face of Diversity?"
- Revised coverage of conducting ethical research
- New Critical Controversy: "Is It Ethical to use Deception in Research?"

CHAPTER 3: BIOLOGICAL FOUNDATIONS OF BEHAVIOR

- Expanded coverage of adaptability
- Updated findings on serotonin
- Updated findings on oxytocin

- New Critical Controversy: “Does Oxytocin Make People More Trusting?” that highlights the importance of rigorous methods and replicability
- Expanded coverage on how researchers’ look inside the brain
- Updated research on brain lesioning
- New Intersection: “Environmental Psychology and Neuroscience: How Does Spending Time in Nature Affect the Brain?”
- Added new study on the limbic system
- Expanded coverage on genome-wide association method

CHAPTER 4: SENSATION AND PERCEPTION

- New chapter opening on how our perception of foods, such as color and crunchiness, contributes to their flavor
- Expanded coverage on sensory receptors and the brain
- Clarified discussion of the principles of gestalt
- Expanded coverage on sense of touch
- New Intersection: “Sensation and Social Psychology: Why Do Some People *Literally* Feel What Others Feel?” describing mirror-touch synaesthesia
- New tip on how to aid our ears in recovery from loud music

CHAPTER 5: STATES OF CONSCIOUSNESS

- Expanded research on consciousness and awareness
- New coverage on the influence of incubation on problem solving
- New material on Freud’s unconscious mind and impulses
- New Critical Controversy: “Is Human Kindness Automatic?”
- Revised coverage on circadian rhythms and sleep/wake disorders
- Fully updated coverage of stages of sleep and wakefulness
- Expanded coverage on resetting the biological clock
- Clarified discussion of the effects of sleep deprivation on memory and task completion
- Expanded findings on sleep throughout the life span
- Introduced new material on the studies of sleep disorders
- Current studies on substance abuse and addictions to prescription medication
- Introduced new research on meditative practices
- New Intersection: “Consciousness and Social Psychology: Can Lovingkindness Meditation Reduce Prejudice?”

CHAPTER 6: LEARNING

- Expanded discussion on Pavlov’s dogs and contiguity
- New material on the processes of acquisition, extinction, spontaneous recovery, and renewal
- Expanded coverage on classical conditioning
- New Intersection: “Learning and Health Psychology: Can Classical Conditioning Be Used to Combat Obesity?”

CHAPTER 7: MEMORY

- Expanded discussion on memory encoding and the levels of processing
- New Critical Controversy: “Why Is the Pen Superior to the Keyboard?”
- Updated research on elaboration
- Added new research on working memory capacity
- Added new research on episodic memory
- Revised coverage on priming and how it influences people’s behavior, with an eye toward replicability
- Revised coverage of neurons and memory storage
- Clarified differences between primacy and recency in memory retrieval

- Added new material on false memories
- New Intersection: “Consciousness and Cognitive Psychology: Can Mindfulness Meditation Increase Susceptibility to False Memories?”
- Updated explanation on flashbulb memory
- Clarified meaning of retrieval failure
- New discussion questions on keeping memory sharp

CHAPTER 8: THINKING, INTELLIGENCE, AND LANGUAGE

- Added new material on following steps in problem solving
- Added new material on inductive and deductive reasoning
- Revised coverage on the two systems of reasoning and decision making
- Expanded coverage on biases and heuristics in decision making
- New Intersection: “Cognitive Psychology and Developmental Psychology: Do Children Engage in Wishful Thinking?”
- Updated coverage on measuring intelligence and IQ tests
- Expanded coverage on genetic and environmental influences on intelligence
- Expanded coverage on giftedness
- New Critical Controversy: “Do Teachers Have Stereotypes About Gifted Children?”
- Revised coverage on enhancing cognitive abilities
- Current research on the role of language in cognition
- Expanded research on the role of cognition in language
- Expanded discussion on biological and environmental influences on language

CHAPTER 9: HUMAN DEVELOPMENT

- Extensively expanded coverage on motor and perceptual skills, especially reaching
- New Critical Controversy: “Do ‘Sticky Mittens’ Foster Reaching in Infants?” highlighting replication issues and the importance of rigorous research methods
 - Revised coverage of Piaget’s theory of cognitive development
 - Updated material on the nativist approach to infant cognition
 - Revised coverage on information-processing theory
 - Updated coverage of temperament
 - Expanded coverage on Kohlberg’s theory and moral issues
 - Revised material on pubertal changes
 - Updated findings on parent and peer influences during adolescence
 - Updated research on emerging adulthood, development, and aging
 - New Intersection: “Developmental Psychology and Emotion: How Does the Emotional Work of Parenting Influence Well-Being?”

CHAPTER 10: MOTIVATION AND EMOTION

- Expanded discussion on self-regulation and the successful pursuit of goals
- New Critical Controversy: “Do Superstars Inspire or Discourage?”
- New Intersection: “Motivation and Behavior Genetics: Why Do We Procrastinate?”
- Expanded coverage on the adaptive functions of emotions



CHAPTER 11: GENDER, SEX, AND SEXUALITY

- Clarified coverage of hormones in defining sex and gender
- Expanded coverage of gender
- Revised coverage on disorders of sexual development
- Extensively expanded coverage on genetic sex, gender conflict, and transgender experience
- Clarified research on the biological approaches to identifying gender in babies
- New material on social cognitive approaches of gender development
- Expanded coverage on gender stereotypes
- New Critical Controversy: “Are Men Better Negotiators Than Women?”
- Updated research on sex differences in cognitive abilities
- Revised coverage of aggression
- Updated material on sexual orientation
- Revised coverage of gay and lesbian families
- Revised coverage of sex education
- New Intersection: “Developmental Psychology and Health Psychology: When Is a Person Psychologically ‘Ready’ for Sex?”
- Updated coverage of treatments of sexual disorders
- Added new study on sexual behavior and psychological well-being

CHAPTER 12: PERSONALITY

- Expanded coverage of Adler’s individual psychology
- New Critical Controversy: “Does Birth Order Affect Personality?”
- New discussion of information on Maslow’s approach
- Expanded discussion of the five-factor model of personality
- Added new content on traits and personality development
- New Intersection: “Personality Psychology and Comparative Psychology: Do Life Experiences Influence Personality?”
- Updated content on personality and the brain
- Discussion of new information on self-report tests
- Expanded discussion of projective tests, specifically Picture Story Exercises (Thematic Apperception Tests)
- Added new content on conscientiousness

CHAPTER 13: SOCIAL PSYCHOLOGY

- Reorganized chapter to move from society to the individual
- Revised the definition of social psychology
- Extensively expanded coverage on the features of social psychology
- New content on physical attractiveness and other perceptual cues
- Discussion of new information on stereotype threat
- Expanded coverage on social comparison
- Expanded discussion of whether attitudes can predict behavior
- New Intersection: “Social Psychology and Personality Psychology: Do Some People Just Hate Everything?”
- Discussion of new information on altruism
- Added new content on biological and sociocultural factors in prosocial behavior
- Updated research on the psychological and sociocultural influences in aggression
- Expanded discussion on conformity and obedience, specifically the psychological factors
- Added new content on Milgram’s experiment
- New introduction to discussion of group influence
- Expanded content on deindividuation, group performance, and group decision making
- Expanded coverage on groupthink
- Added new content on prejudice



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- New Critical Controversy: “Why Does a Cell Phone Look Like a Gun?”
- New introduction on ways to improve intergroup relations
- New content on training people to break the prejudice habit

CHAPTER 14: INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

- Expanded coverage on the human relations approach to improving the workplace
- Updated Psychological Inquiry: “The Fastest-Growing Jobs in the United States”
- Updated coverage on employee testing and assessments
- New Intersection: “I-O Psychology and Cognitive Neuroscience: Can Neuroscience Help Identify the Right Brain for the Job?”
- New content on interviews
- New content on job crafting
- Updated coverage of positive organizational culture
- Expanded coverage of stress at work
- New Critical Controversy: “Why Is Work–Life Balance So Difficult?”

CHAPTER 15: PSYCHOLOGICAL DISORDERS

- New content on somatic symptom disorder
- Expanded discussion on specific phobia
- Expanded coverage on social anxiety disorder
- New Intersection: “Clinical Psychology and Social Psychology: Can Authentic Interactions Help Those with Social Anxiety?”
- New content on the biological and psychological factors of depression
- Updated research on thought disorder
- Updated Critical Controversy: “Does *Everyone* Have ADHD?”
- Revised coverage of genes and schizophrenia

CHAPTER 16: THERAPIES

- Revised material on the factors involved in effective psychotherapy
- New content on psychodynamic therapy
- Revised introduction to behavior therapies
- Updated coverage of cognitive therapies
- Expanded coverage of cognitive-behavior therapy
- New Intersection: “Clinical Psychology and Developmental Psychology: Can CBT Be Applied More Effectively to Children?”
- Discussion of recent study on antianxiety drugs
- Extensively expanded coverage of antidepressant drugs
- New Critical Controversy: “Are Antidepressants Better Than Placebos?”
- Added new content on lithium
- Added new content on group therapy
- Expanded coverage of ethnicity and psychotherapy

CHAPTER 17: HEALTH PSYCHOLOGY

- Updated content on the biopsychosocial model
- Revised material on the theoretical models of change
- Expanded coverage on religious faith
- Added new content on stress and cancer
- New Intersection: “Health Psychology and Cognition: Can Mindless Processing Enhance Healthy Eating?”
- Updated content on quitting smoking

Appreciating Course Materials and Instructor Support

With McGraw-Hill Education, you can develop and tailor the course you want to teach.

Instructor's Manual The instructor's manual provides a wide variety of tools and resources for presenting the course, including learning objectives, ideas for lectures and discussions, and handouts.

Test Bank By increasing the rigor of the test bank development process, McGraw-Hill Education has raised the bar for student assessment. A coordinated team of subject-matter experts prepared over 3,000 questions. The team methodically vetted each question and set of possible answers for accuracy, clarity, effectiveness, and accessibility; each question has been annotated for level of difficulty, Bloom's taxonomy, APA learning outcomes, and corresponding coverage in the text. Organized by chapter, the questions are designed to test factual, conceptual, and applied understanding. All test questions are available within TestGen™ software.

PowerPoint Presentations The PowerPoint presentations, now WCAG compliant, highlight the key points of the chapter and include supporting visuals. All of the slides can be modified to meet individual needs.

Image Gallery The Image Gallery features the complete set of downloadable figures and tables from the text. These can be easily embedded by instructors into their own PowerPoint slides.

Tegrity With Tegrity, you can capture lessons and lectures in a searchable format and use them in traditional, hybrid, “flipped classes,” and online courses. With Tegrity's personalized learning features, you can make study time efficient. Its ability to affordably scale brings this benefit to every student on campus. Patented search technology and real-time learning management system (LMS) integrations make Tegrity the market-leading solution and service.



Create Easily rearrange chapters, combine material from other content sources, and quickly upload content you have written, such as your course syllabus or teaching notes, using McGraw-Hill Education's Create. Find the content you need by searching through thousands of leading McGraw-Hill Education textbooks. Arrange your book to fit your teaching style. Create even allows you to personalize your book's appearance by selecting the cover and adding your name, school, and course information. Order a Create book, and you will receive a complimentary print review copy in three to five business days or a complimentary electronic review copy via e-mail in about an hour. Experience how McGraw-Hill Education empowers you to teach *your* students *your* way. <http://create.mheducation.com>



McGraw-Hill Campus McGraw-Hill Campus (www.mhcampus.com) provides faculty with true single sign-on access to all of McGraw-Hill's course content, digital tools, and other high-quality learning resources from any learning management system. This innovative offering allows for secure and deep integration enabling seamless access for faculty and students to any of McGraw-Hill's course solutions such as McGraw-Hill Connect (all-digital teaching and learning platform), McGraw-Hill Create (state-of-the-art custom-publishing platform), McGraw-Hill LearnSmart (online adaptive study tool), and Tegrity (a fully searchable lecture-capture service).



McGraw-Hill Campus includes access to McGraw-Hill's entire content library, including eBooks, assessment tools, presentation slides, and multimedia content, among other resources, providing faculty open, unlimited access to prepare for class, create tests/quizzes, develop lecture material, integrate interactive content, and more.

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Mary McMackin, *Butler Community College*
Tammy Mahan, *College of the Canyons*

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Eric Miller, *Kent State University*
Tonya Nascimento, *University of West Florida*
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Cari Paterno, *Harper College*
Michael Pinney, *Blinn College*
Anna Pullara, *Triton College*
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Tony Tinsley, *Western Washington University*
Amy Williamson, *Moraine Valley Community College*

Since the publication of the first edition, I have met hundreds of faculty members across the country, and I continue to be awestruck by the hard work, dedication, and enthusiasm of introductory psychology instructors. So, I wanted to say thank you. You all continue to inspire me—to be a better teacher myself, to develop the best learning solutions for the introductory psychology course, and to make our field relevant, accessible, and fun to today's students. I appreciate you!

I would also extend a special thanks to Dr. Tim Brown at Trident Tech for taking time out to chat with me about some difficult but important issues. I won't soon forget your wisdom and courage.

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Readers of this fourth edition will benefit from the conscientious efforts of senior product developer Cara Labell, who added her personal energies and gifts to make this edition a special and exciting new introduction to psychology. Cara was extraordinarily helpful in navigating the data from the LearnSmart heat maps, identifying places where the students needed more or different material. It allowed me to “hear” students’ needs in a way that was truly invaluable. A very special thanks to copyeditor Jennifer Gordon for her indefatigable sensibility and attention to detail. Her thoughtfulness, her “ear” for the written word, and her willingness to take on responsibilities have been incredible. This fourth edition is better for her efforts. And I am grateful to Content Project Manager Sandy Wille for her deep well of professionalism and skill. Thanks also to Designer Matt Backhaus, Content Licensing Specialists Shannon Manderscheid and Shawntel Schmitt, and Buyer Laura Fuller for their hard work on this project.

I wrote this edition of *The Science of Psychology* while teaching a new section of honors Intro Psychology. Those students pushed me to think about psychology in ways that I never had before, and I thank them all. Thanks as well to my graduate students, Sarah Ward and Jake Womick. I appreciate how they have patiently managed to build scholarly careers while their advisor has juggled her writing, editing, and teaching.

Finally, I thank my family for their love, support, patience, and encouragement. The last few years have not been easy, but I have been fortunate beyond words to have you on my side.



CHAPTER 1

CHAPTER OUTLINE

- 1 Defining Psychology
- 2 Psychology in Historical Perspective
- 3 Contemporary Approaches to Psychology
- 4 What Psychologists Do
- 5 The Science of Psychology and Health and Wellness

What Is Psychology?

Unlocking the Secrets of Heroism

On a train to Paris in the summer of 2015, three young Americans went from vacationing tourists to international heroes in a matter of seconds. Childhood

friends—Anthony Sadler (a college student) and Alek Skarlatos and Spencer Stone (both in the U.S. armed forces)—had decided to travel Europe together. The trip, full of great food and sightseeing, turned into an unexpected opportunity for heroism (Southall, 2015). Hearing gunfire and seeing a struggle, the young men immediately jumped into action, subduing and disarming the gunman with the help of another passenger. Miraculously, no one was killed or gravely injured. The men, who received medals from the French government for their bravery, were not even supposed to be on the train that day. Luckily for all aboard, they changed their plans at the last minute.

Reflecting on this incident, many questions pop to mind. How can we understand such courageous behavior? How did the presence of two close friends influence the behavior of each of the men? Why did other riders not intervene? What motivated the gunman to begin with? How does realizing how close the men were to not being on that train influence how we feel about the story of what they did? These are the kinds of questions psychologists might ask about this remarkable heroism.

Although psychologists are interested in extraordinary moments like this one, they are also interested in everyday experiences. The science of psychology is about *all* of human behavior. In fact, ordinary human behavior can become extraordinary when viewed in the right light, with a close lens. Scientists, including psychologists, look at the world with just such a lens. Right now, dedicated scientists are studying things about you that you might have never considered, like how your eyes adjust to a sunny day. There is not a single thing about you that is not fascinating to some psychologist somewhere. Psychologists are passionate about what they study—and what they study is you. ●

PREVIEW



This introductory chapter begins by formally defining psychology and then gives context to that definition by reviewing the history and the intellectual underpinnings of the field. We next examine a number of contemporary approaches to the subject. We explore what psychologists do—including research, teaching, and therapeutic practice—and consider the areas of specialization within psychology. Our introduction to this dynamic field closes with a look at how understanding and applying psychological findings can positively influence human health and wellness.

1. DEFINING PSYCHOLOGY

● **psychology** The scientific study of behavior and mental processes.

● **science** The use of systematic methods to observe the natural world and to draw conclusions.

● **behavior** Everything we do that can be directly observed.

● **mental processes** The thoughts, feelings, and motives that each of us experiences privately but that cannot be observed directly.

● **critical thinking** The process of reflecting deeply and actively, asking questions, and evaluating the evidence.

When you think of the word *psychology*, what first comes to mind? Formally defined, **psychology** is the scientific study of behavior and mental processes. Let's consider the three key terms in this definition: *science*, *behavior*, and *mental processes*.

As a **science**, psychology uses systematic methods to observe human behavior and draw conclusions. The goals of psychological science are to describe, predict, and explain behavior. In addition, psychologists are often interested in controlling or changing behavior, and they use scientific methods to examine interventions that might help—for example, techniques that might reduce violence or promote happiness.

Researchers might be interested in knowing whether individuals will help a stranger who has fallen down. The investigators could devise a study in which they observe people walking past a person who needs help. Through many observations, the researchers could come to *describe* helping behavior by counting how many times it occurs in particular circumstances. They may also try to *predict* who will help, and when, by examining characteristics of the individuals studied. Are happy people more likely to help? Are women or men more likely to help? After psychologists have analyzed their data, they also will want to *explain* why helping behavior occurred when it did. Finally, these investigators might be interested in changing helping behavior by devising strategies to increase helping.

Behavior is everything we do that can be directly observed—two people kissing, a baby crying, a college student riding a motorcycle to campus. **Mental processes** are the thoughts, feelings, and motives that each of us experiences privately but that cannot be observed directly. Although we cannot see thoughts and feelings, they are nonetheless real. They include *thinking* about kissing someone, a baby's *feelings* when its mother leaves the room, and a student's *memory* of a motorcycle trip.

The Psychological Frame of Mind

What makes for a good job, a good marriage, or a good life? Although there are a variety of ways to answer the big questions of life, psychologists approach these questions as scientists. This scientific approach means that psychologists test assumptions and rely on objective evidence to answer these puzzles. Psychologists conduct research and rely on that research to provide the bases for their conclusions. They examine the available evidence about some aspect of mind and behavior, evaluate how strongly the data (information) support their hunches, analyze disconfirming evidence, and carefully consider whether they have explored all of the possible factors and explanations. At the core of this scientific approach are four attitudes: critical thinking, skepticism, objectivity, and curiosity.

Like all scientists, psychologists are critical thinkers. **Critical thinking** is the process of reflecting deeply and actively, asking questions, and evaluating the evidence (Facione & Gittens, 2016). Thinking critically means asking ourselves *how* we know something. Critical thinkers question and test what some people say are facts. They examine research to see if it soundly supports an idea (Szenes, Tilakaratna, & Maton, 2015). Critical

thinking reduces the likelihood that conclusions will be based on unreliable personal beliefs, opinions, and emotions. Thinking critically will be very important as you read *The Science of Psychology*. Some of the things you read will fit with your current beliefs, and some will challenge you to reconsider your assumptions. Actively engaging in critical thinking is vital to making the most of psychology. As you read, think about how what you are learning relates to your life experiences and to your assumptions about others.

In addition, scientists are characterized by *skepticism* (Stanovich, 2013). Skeptical people challenge whether a supposed fact is really true. Being skeptical can mean questioning what “everybody knows.” There was a time when “everybody knew” that women were morally inferior to men, that race could influence a person’s IQ, and that the earth was flat. Psychologists, like all scientists, look at such assumptions in new and questioning ways and with a skeptical eye. You might use scientific skepticism the next time you encounter an infomercial about the latest diet craze that promises to help you lose weight “without diet or exercise.” A skeptic knows that if something sounds too good to be true, it probably is.

Related to critical thinking and skepticism is the distinction between science and pseudoscience. *Pseudo* means “fake,” and *pseudoscience* refers to information that is couched in scientific terminology but is not supported by sound scientific research. Astrology is an example of a pseudoscience. Although astrologers may present detailed information about an individual, supposedly based on when that person was born, no scientific evidence supports these assumptions and predictions. One way to tell that an explanation is pseudoscientific rather than scientific is to look at how readily proponents of the explanation will accept evidence to the contrary.

Being open to the evidence means thinking *objectively*. To achieve this goal, scientists apply the empirical method to learn about the world. Using the **empirical method** means gaining knowledge through the observation of events, the collection of data, and logical reasoning. Being objective involves seeing things as they really are, *not as we would like them to be*. Objectivity means waiting to see what the evidence tells us rather than going with our hunches. Does the latest herbal supplement truly help relieve depression? An objective thinker knows that we must have sound evidence before answering that question.

Last, scientists are *curious*. Scientists notice things in the world (a star in the sky, an insect, three heroes on a train) and want to know what it is and why it is that way. Science involves asking questions, even very big questions, such as where did the earth come from, and how does love between two people endure for 50 years? Thinking like a psychologist means opening your mind and imagination to wondering why things are the way they are. Once you begin to think like a psychologist, you might notice that the world looks like a different place. Easy answers and simple assumptions will not do.

As you can probably imagine, psychologists have many different opinions about many different things, and psychology, like any science, is filled with debate and controversy. Throughout this book, we will survey areas of debate in psychology in a feature called Critical Controversy. As the first example, check out this chapter’s Critical Controversy concerning whether Facebook use can take a toll on well-being.

Debate and controversy are a natural part of thinking like a psychologist. Psychology has advanced as a field *because* psychologists do not always agree with one another about why the mind and behavior work as they do. Psychologists have reached a more accurate understanding of human behavior *because* psychology fosters controversies and *because* psychologists think deeply and reflectively and examine the evidence on all sides. A good place to try out your critical thinking skills is by revisiting the definition of psychology.

Psychology as the Science of All Human Behavior

As you consider the definition of psychology as the science of human behavior, you might be thinking, okay, where’s the couch? Where’s the mental illness? Psychology



A baby’s interactions with its mother and the infant’s crying are examples of behavior because they are observable. The feelings underlying the baby’s crying are an example of a mental process that is not observable.

(first) © GlowImages/Alamy; (second) © Brand X Pictures/PunchStock

● **empirical method** Gaining knowledge through the observation of events, the collection of data, and logical reasoning.

certainly does include the study of therapy and psychological disorders. *Clinical psychologists* in particular specialize in studying and treating psychological disorders. By definition, though, psychology is a much more *general* science (Fuchs & Evans, 2013). Surely, psychological disorders are very interesting, and the media often portray psychologists as therapists. Yet the view of psychology as the science of what is wrong with people started long before television was invented. So how did we end up with the idea that psychology is only about mental illness?

When they think about psychology, many people think of Sigmund Freud (1856–1939). Freud believed that most of human behavior is caused by dark, unpleasant, unconscious impulses clamoring for expression. For Freud, even the average person on the street is a mysterious well of unconscious desires. Certainly, Freud has had a lasting impact on psychology and on society; as recently as March 2006, on the occasion of his 150th birthday, Freud was featured on the cover of *Newsweek*. Consider, though, that Freud based his ideas about human nature on the patients whom he saw in his clinical practice—individuals who were struggling with psychological problems. His experiences with these clients, as well as his analysis of himself, colored his outlook on all of humanity. Freud once wrote, “I have found little that is ‘good’ about human beings on the whole. In my experience most of them are trash” (Freud, [1918] 1963).

Freud’s view of human nature has crept into general perceptions of what psychology is all about. Imagine, for example, that you are seated on a plane, having a pleasant conversation with the woman (a stranger) sitting next to you. At some point you ask your seatmate what she does for a living, and she informs you she is a psychologist. You might think to yourself, “Uh oh. What have I already told this person? What secrets does she know about me that I don’t know about myself? Has she been analyzing me this whole time?” Would you be surprised to discover that this psychologist studies happiness? Or intelligence? Or the processes related to the experience of vision? The study of psychological disorders is a very important aspect of psychology, but it represents only one part of the science of psychology.

Psychology seeks to understand the truths of human life in *all* its dimensions, including people’s best and worst experiences. Psychologists acknowledge that sometimes an individual’s best moments emerge amid the most difficult circumstances. Research on the human capacity for forgiveness demonstrates this point (Flanagan & others, 2012). Forgiveness is the act of letting go of our anger and resentment toward someone who has harmed us. Through forgiveness we cease seeking revenge or avoiding the person who did us harm, and we might even wish that person well.

One such example is a tragic event from October 2006. Charles Carl Roberts held 10 young Amish girls hostage in a one-room schoolhouse in Pennsylvania, eventually murdering 5 of them and wounding 5 others before killing himself. The grief-stricken Amish community focused not on hatred and revenge but on forgiveness. In addition to raising money for the victims’ families, the Amish insisted on establishing a fund for the murderer’s family. As they prepared simple funerals for the dead girls, the community invited the killer’s wife to attend. The science of psychology has much to offer to our understanding of not only the perpetrator’s violence but also the victims’ capacity for forgiveness.

The willingness of the Amish community to forgive this horrible crime is both remarkable and puzzling. Can we scientifically understand the human ability to forgive even what might seem to be unforgivable? Psychologists have taken up the topic of forgiveness in research and clinical practice (Fatfouta, 2015; McCullough, Kurzban, & Tabak, 2013; Peets, Hodges, & Salmivalli, 2013; Sandage & others, 2015). Researchers have explored the relationship between religious commitment and forgiveness (McCullough, Bono, & Root, 2007), the cognitive skills required for forgiveness (Pronk & others, 2010), and the potential dark side of forgiveness, which might emerge, for example, when forgiveness leads an abusive spouse to feel free to continue a harmful behavior (McNulty, 2011). Recent research has even examined how individuals can come to forgive racially motivated offenses (Davis & others, 2015).



CRITICAL CONTROVERSY

Can Facebook Make You Miserable?

Participating in social media is a chance for self-expression and a way to share with family and friends, reignite old friendships, and forge new social connections. Facebook can provide a place for people to seek support after distressing life events such as romantic breakups (Tran & Joormann, 2015) and health crises (Davis, Anthony, & Pauls, 2015). Certainly, maintaining close social relationships and garnering support during difficult times would seem to be very positive things. Does it matter if these experiences occur online instead of in person? Evidence suggests that it just might. For instance, one study showed that the social sharing and support that occurred on Facebook did not translate to feeling supported in “real” life (Li, Chen, & Popiel, 2015). Indeed, one study of young adults showed that time spent on Facebook during a two-week period predicted drops in psychological well-being later (Kross & others, 2013). Yet, clearly people enjoy engaging in social media, and Facebook is wildly popular.

Psychologists have come to understand that well-being depends a great deal on how Facebook is used. Active Facebook use means engaging in exchanges that invite interactions with others—for example, posting a status update or commenting on another post. Passive usage refers to things like scrolling through one’s newsfeed or looking at others’ pages, without direct exchanges. Passive use involves consuming information but not interacting.

To understand why this distinction is important think about the kinds of things people post online. Research shows that people tend to post extremely positive things about themselves and their lives (Kross & others, 2013; Mehdizadeh, 2010). Passively scrolling through those many positive portrayals of other people’s lives can foster feelings of envy, inferiority, shame, and anxiety (Krasnova & others, 2013; Shaw & others, 2015). Not surprisingly, a particularly distressing type of passive Facebook use is scrolling through the profile of one’s ex-boyfriend or girlfriend (Tran & Joormann, 2015). Do such experiences lead to declines in well-being?

A team of researchers recently conducted two studies to find out (Verduyn & others, 2015). In the first study, the researchers brought college students into the lab and asked them to log onto Facebook. Half of the students were told to engage actively (and refrain from passive use), and the other half were told to remain passive (and refrain from active use). Later that evening,

participants completed a follow-up questionnaire online, rating how they were feeling emotionally. Those who had engaged in 10 minutes of passive use of Facebook reported lower emotional well-being some 9 hours later. In the second study, researchers found that this decrease in well-being was due to the feelings of envy that ensued following passive Facebook use (Verduyn & others, 2015). Interestingly, other research suggests that responses to Facebook use may depend on gender. For instance, among adolescents, girls are especially likely to benefit from active Facebook use but also to be vulnerable to the emotional toll of passive Facebook usage (Frison & Eggermont, 2015).

This research indicates that people’s responses to Facebook and other social media are not that different from our reactions to other aspects of life, in that our adjustment depends on how the media are used and by whom. Making the most of social media means using these new ways of connecting to engage actively with others.

WHAT DO YOU THINK?

- How might this research influence the way you and your friends use social media?
- Why do you think people are likely to post about highly positive aspects of their lives?



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Some argue that psychology has focused too much on the negative while neglecting qualities that reflect the best of humanity (Seligman & Csikszentmihalyi, 2000). From these criticisms positive psychology has emerged. **Positive psychology** is a branch of psychology that emphasizes human strengths. Research in positive psychology centers on topics such as hope, optimism, happiness, and gratitude (Diener, 2012b; Lopez & others, 2013). One goal of positive psychology is to bring a greater balance to the field by moving beyond focusing on how and why things go wrong in life to understanding how and why

- **positive psychology** A branch of psychology that emphasizes human strengths.

test yourself

1. What makes psychology a science? What are the goals of psychological scientists?
2. What four attitudes are at the core of the scientific approach?
3. Which particular Freudian views of human nature have influenced general perceptions of what psychology is all about?

things go right (Lopez & Gallagher, 2012). Positive psychology is not without its own critics, though. Indeed, some psychologists insist that human weaknesses are the most important topics to study (Lazarus, 2003).

To be a truly general science of human behavior, psychology must address *all* sides of human experience. Surely, controversy—such as that concerning positive psychology—is a part of any science. The healthy debate that characterizes the field of psychology can give rise to new psychological perspectives, and this is a sign of a lively discipline.

2. PSYCHOLOGY IN HISTORICAL PERSPECTIVE

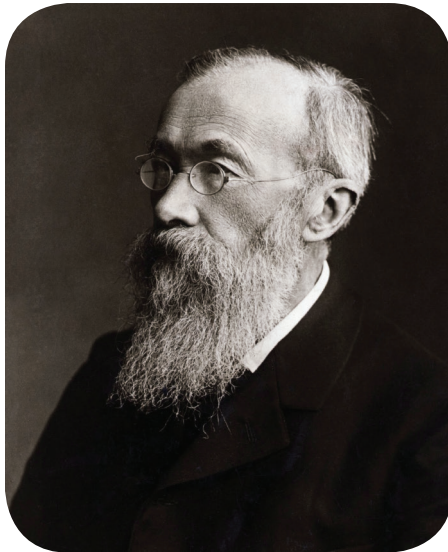
Psychology seeks to answer questions that people have been asking for thousands of years—for example:

- How do we learn?
- What is memory?
- Why does one person grow and flourish while another struggles?

It is a relatively new idea that such questions might be answered through scientific inquiry. From the time human language included the word *why* and became rich enough to enable people to talk about the past, people have created folklore to explain why things are the way they are. Ancient myths attributed most important events to the pleasure or displeasure of the gods. When a volcano erupted, the gods were angry; if two people fell in love, they had been struck by Cupid's arrows. Gradually, myths gave way to *philosophy*—the rational investigation of the underlying principles of being and knowledge—and people began trying to explain events in terms of natural rather than supernatural causes.

Western philosophy came of age in ancient Greece in the fifth and fourth centuries B.C.E. Socrates, Plato, Aristotle, and others debated the nature of thought and behavior, including the possible link between the mind and the body. Later philosophers, especially René Descartes, argued that the mind and body were completely separate, and they focused their attention on the mind. Psychology grew out of this tradition of thinking about the mind and body. The influence of philosophy on contemporary psychology persists today, as researchers who study emotion still talk about Descartes, and scientists who study happiness often refer to Aristotle (Crespo & Mesurado, 2015; Disabato & others, 2015).

In addition to philosophy, psychology also has roots in the natural sciences of biology and physiology. Read on to trace how the modern field of psychology developed.



William Wundt (1832–1920) Wundt founded the first psychology laboratory (with his coworkers) in 1879 at the University of Leipzig.

© Bettmann/Corbis

Wundt's Structuralism and James's Functionalism

Wilhelm Wundt (1832–1920), a German philosopher-physician, integrated philosophy and the natural sciences to create the academic discipline of psychology. Some historians say that modern psychology was born in December 1879 at the University of Leipzig, when Wundt and his students performed an experiment to measure the time lag between the instant a person heard a sound and the moment he or she pressed a telegraph key to signal having heard it. What was so special about this experiment? Wundt's study was about the workings of the brain: He was trying to measure the time it took the human brain and nervous system to translate information into action. At the heart of this experiment was the idea that mental processes could be measured. This notion ushered in the new science of psychology.

Wundt and his collaborators concentrated on discovering the basic elements, or “structures,” of mental processes. Their approach was thus called **structuralism** because

● **structuralism** Wundt's approach to discovering the basic elements, or structures, of mental processes; so called because of its focus on identifying the structures of the human mind.

of its focus on identifying the structures of the human mind, and their method of study was *introspection*. Introspection means looking inside our own minds, by focusing on our own thoughts (literally, “looking inside”). For this type of research, a person in Wundt’s lab would be asked to think (introspect) about what was going on mentally as various events took place. For example, the individual might be subjected to a sharp, repetitive clicking sound and then might have to report whatever conscious thoughts and feelings the clicking produced. Introspection relies entirely on the person’s conscious reflection. What made this method scientific was the systematic, detailed self-report required of the person in the controlled laboratory setting.

Although Wundt is most often regarded as the founding father of modern psychology, it was psychologist and philosopher William James (1842–1910), perhaps more than anyone else, who gave the field an American stamp. From James’s perspective, the key question for psychology is not so much what the mind *is* (that is, its structures) as what it *is for* (its purposes or functions). James’s view was eventually named *functionalism*.

In contrast to structuralism, which emphasized the components of the mind, **functionalism** probed the functions and purposes of the mind and behavior in the individual’s adaptation to the environment. Whereas structuralists were looking inside the mind and searching for its structures, functionalists focused on human interactions with the outside world and the purpose of thoughts. If structuralism is about the “what” of the mind, functionalism is about the “why.” Unlike Wundt, James did not believe in the existence of rigid structures in the mind. Instead, James saw the mind as flexible and fluid, characterized by constant change in response to a continuous flow of information from the world. James called this natural flow of thought a “stream of consciousness.”

A core question in functionalism is, why is human thought *adaptive*—that is, why are people better off because they can think than they would be otherwise? When we talk about whether a characteristic is adaptive, we are focusing on how it makes an organism better able to survive. As we will see next, functionalism fit well with the theory of evolution through natural selection proposed by British naturalist Charles Darwin (1809–1882).

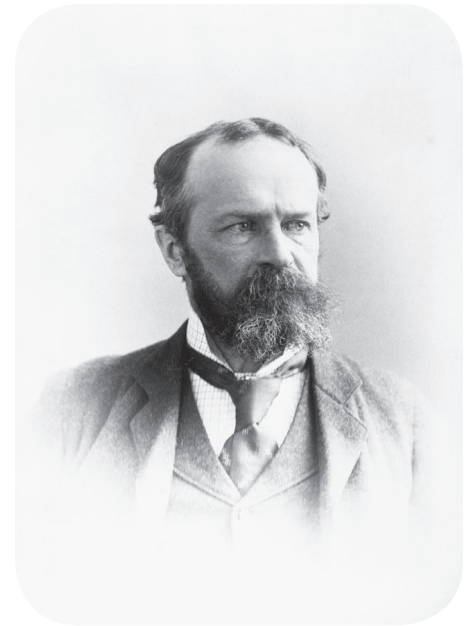
Darwin’s Natural Selection

In 1859, Darwin published his ideas in *On the Origin of Species* (1859). A centerpiece of his theory was the principle of **natural selection**, an evolutionary process in which organisms that are better adapted to their environment will survive and, importantly, produce more offspring.

Darwin noted that the members of any species are often locked in competition for scarce resources such as food and shelter. Natural selection is the process by which the environment determines who wins that competition. Darwin asserted that organisms with biological features that led to survival and reproduction would be better represented in subsequent generations. Over many generations, organisms with these characteristics would constitute a larger percentage of the population. Eventually, this process could change an entire species.

Importantly, a characteristic cannot be passed from one generation to the next unless it is recorded in the *genes*, those collections of molecules that are responsible for heredity. Genetic characteristics that are associated with survival and reproduction are passed down over generations. According to evolutionary theory, species change through random genetic mutation. That means that, essentially by accident, some members of a species are born with genetic characteristics that make them different from other members. If these changes are adaptive (if they help those members compete for food, survive, and reproduce), they become more common in the species. If environmental conditions were to change, however, other characteristics might become favored by natural selection, moving the process in a different direction.

Evolutionary theory implies that the way we are, at least in part, is the way that is best suited to survival in our environment. The Psychological Inquiry feature lets you critically apply the principles of Darwin’s theory of evolution.



William James (1842–1910) James’s approach became known as functionalism.

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- **functionalism** James’s approach to mental processes, emphasizing the functions and purposes of the mind and behavior in the individual’s adaptation to the environment.

- **natural selection** Darwin’s principle of an evolutionary process in which organisms that are better adapted to their environment will survive and produce more offspring.