The History and Scope of Psychology

Psychology’s Roots

1-1: What are some important milestones in the development of the science of psychology?¹

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?”

Psychological Science Is Born

To be human is to be curious about ourselves and the world around us. Before 300 B.C.E., the Greek naturalist and philosopher Aristotle (384–322 B.C.E.) theorized about learning and memory, motivation and emotion, perception and personality. Today we chuckle at some of his guesses, like his suggestion that a meal makes us sleepy by causing gas and heat to collect around the source of our personality, the heart. But credit Aristotle with asking the right questions.

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. Thus began what many consider psychology’s first experiment, launching the first psychological laboratory, staffed by Wundt and psychology’s first graduate students.

This young science of psychology developed from the more established fields of philosophy and biology. Wundt was both a philosopher and a physiologist. Ivan Pavlov, who pioneered the study of learning, was a Russian physiologist. Sigmund Freud, who developed an influential theory of personality, was an Austrian physician. Jean Piaget, the last century’s most influential observer of children, was a Swiss biologist. William James, author of an important 1890 textbook, was an American philosopher. This list of pioneering psychologists—“Magellans of the mind,” as Morton Hunt (1993) has called them—illustrates psychology’s origins in many disciplines and countries.

As these names illustrate, the early pioneers of most fields, including psychology, were predominantly men. When James’ student Mary Calkins completed all the requirements for a Harvard Ph.D., outscoring all the male students on their exams, Harvard denied her the degree she had earned, offering her instead a degree from Radcliffe College, its undergraduate sister school for women. Although Calkins resisted the unequal treatment and refused the degree, she went on to become the American Psychological Association’s (APA’s) first female president in 1905. Margaret Floy Washburn became the first woman to receive a psychology Ph.D. and, in 1921, the second to be elected an APA president.

¹ A Preview Question appears at the beginning of major sections. Search actively for the answer to the question as you read through the section. Later, you can check your understanding by reading the numbered Module Review and taking a Rehearse It! quiz at the end of the module.
The rest of the story of psychology—the subject of this book—develops at many levels. With activities ranging from the study of nerve cell activity to the study of international conflicts, psychology is not easily defined.

In psychology’s early days, introspection—focusing on inner sensations, images, and feelings—was common. Wundt used this approach, as did James in his examination of the stream of consciousness and of emotion. 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.”
From the 1920s into the 1960s, American psychologists, initially led by flamboyant and provocative John B. Watson and later by the equally provocative B. F. Skinner, dismissed introspection and redefined psychology as “the scientific study of observable behavior.” After all, said these behaviorists, 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.

Humanistic psychology rebelled against both behaviorism and Freudian psychology. Pioneers Carl Rogers and Abraham Maslow found behaviorism’s focus on learned behaviors too mechanistic. And rather than focusing on the meaning of early childhood memories, as a psychoanalyst might, the humanistic psychologists emphasized the importance of current environmental influences on our growth potential, and the importance of having our needs for love and acceptance satisfied.

In the 1960s, another movement emerged as psychology began to recapture its initial interest in mental processes. This cognitive revolution supported ideas developed by earlier psychologists, such as the importance of how our mind processes and retains information. Cognitive psychology and more recently cognitive neuroscience (the study of brain activity linked with mental activity) have also suggested new ways to understand and treat psychological disorders.

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 subjective experiences: 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.

John B. Watson and Rosalie Rayner Working with Rayner, Watson championed psychology as the science of behavior. Together, they demonstrated conditioned responses on a baby who became famous as “Little Albert.”

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

Throughout the text, important concepts are boldfaced. As you study, you can find these terms with their definitions in a nearby margin and in the Glossary at the end of the book.
Contemporary Psychology

Like its pioneers, today’s psychologists are citizens of many lands. The International Union of Psychological Science has 69 member nations, from Albania to Zimbabwe. Across the world, psychologists have wrestled with many issues, viewing behavior from the differing perspectives offered by the subfields in which they teach, work, and do research.

Global psychology

Psychology is growing and it is globalizing. Today’s psychologists are citizens of many lands—69 lands, according to the International Union of Psychological Science. Their number is mushrooming. In China, for example, 5 universities had psychology departments in 1985; by the last century’s end, there were 40 (Zhang & Xu, 2006). And worldwide, ideas are working their way across borders now more than ever, as happened in 2007 at this international psychology conference in India. “We are moving rapidly toward a single world of psychological science,” reported Robert Bjork (2000).

Psychology’s Biggest Question

1-2: What is psychology’s historic big issue?

Psychology’s biggest and most persistent issue has been the nature-nurture issue—the controversy over the relative contributions of biology and experience to the development of our traits and behaviors: Do our human traits develop through experience, or are we born with them?

The nature-nurture debate weaves a thread from the ancient Greeks’ time to our own. Philosopher Plato (428–348 B.C.E.) assumed that character and intelligence are largely inherited and that certain ideas are inborn. Aristotle countered that there is nothing in the mind that does not first come in from the external world through the senses. Today’s psychologists explore the issue by asking, for example:

- Are gender differences (the characteristics people associate with male and female) biologically predisposed or socially constructed?
- Is children’s grammar mostly innate or formed by experience?
- How are differences in intelligence and personality influenced by heredity and by environment?
- Are sexual behaviors more “pushed” by inner biology or “pulled” by external incentives?
- Should we treat psychological disorders—depression, for example—as disorders of the brain, disorders of thought, or both?

A nature-made nature-nurture experiment

Identical twins (left) share the same genes and, usually, the same environment. Fraternal twins (right) usually share the same environment but not the same genes. These differences make twins ideal participants in studies of hereditary and environmental influences on intelligence, personality, and other traits. Twin studies provide a rich array of findings—described throughout this book—that underscore the importance of both nature and nurture.
Such debates continue. Yet over and over again we will see that in contemporary science the nature-nurture tension dissolves: Nurture works on what nature endows. Our species is biologically endowed with an enormous capacity to learn and adapt. Moreover, every psychological event (every thought, every emotion) is simultaneously a biological event. Thus, depression can be both a brain disorder and a thought disorder.

**Psychology’s Three Main Levels of Analysis**

1-3: What are psychology’s levels of analysis and related perspectives?

Each of us is a complex system that is part of a larger social system. But each of us is also composed of smaller systems, such as our nervous system and body organs, which are composed of still smaller systems—cells, molecules, and atoms.

These tiered systems suggest different levels of analysis, which offer complementary outlooks. It’s like explaining why grizzly bears hibernate. Is it because hibernation helped their ancestors to survive and reproduce? Because their inner physiology drives them to do so? Because cold environments hinder food gathering during winter? Such perspectives are complementary because “everything is related to everything else” (Brewer, 1996). Together, different levels of analysis form an integrated biopsychosocial approach, which considers the influences of biological, psychological, and social-cultural factors (FIGURE 1.1).

Each level provides a valuable vantage point for looking at behavior, yet each by itself is incomplete. Like different academic disciplines, psychology’s varied perspectives ask different questions and have their own limits. One perspective may stress the biological, psychological, or social-cultural level more than another, but the different perspectives described in TABLE 1.1 on the next page complement one another. Consider, for example, how they shed light on anger.

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**FIGURE 1.1 Biopsychosocial approach**

This integrated viewpoint incorporates various levels of analysis and offers a more complete picture of any given behavior or mental process.
Someone working from a neuroscience perspective might study brain circuits that cause us to be “red in the face” and “hot under the collar.”

Someone working from the evolutionary perspective might analyze how anger facilitated the survival of our ancestors’ genes.

Someone working from the behavior genetics perspective might study how heredity and experience influence our individual differences in temperament.

Someone working from the psychodynamic perspective might view an outburst as an outlet for unconscious hostility.

Someone working from the behavioral perspective might attempt to determine which external stimuli trigger angry responses or aggressive acts.

Someone working from the cognitive perspective might study how our interpretation of a situation affects our anger and how our anger affects our thinking.

Someone working from the social-cultural perspective might explore how expressions of anger vary across cultural contexts.

The point to remember: Like two-dimensional views of a three-dimensional object, each of psychology’s perspectives is helpful. But each by itself fails to reveal the whole picture.

So bear in mind psychology’s limits. Don’t expect it to answer the ultimate questions, such as those posed by Russian novelist Leo Tolstoy (1904): “Why should I live? Why should I do anything? Is there in life any purpose which the inevitable death that awaits me does not undo and destroy?” Instead, expect that psychology will help you understand why people think, feel, and act as they do. Then you should find the study of psychology fascinating and useful.

### Psychology’s Subfields

**1-4:** What are some of psychology’s subfields?

Picturing a chemist at work, you probably envision a white-coated scientist surrounded by glassware and high-tech equipment. Picture a psychologist at work, and you would be right to envision

- a white-coated scientist probing a rat’s brain.
- an intelligence researcher measuring how quickly an infant shows boredom by looking away from a familiar picture.
- an executive evaluating a new “healthy life-styles” training program for employees.
someone at a computer keyboard analyzing data on whether adopted teens’ temperaments more closely resemble those of their adoptive parents or their biological parents.

▶ a therapist listening carefully to a client’s depressed thoughts.
▶ a traveler visiting another culture and collecting data on variations in human values and behaviors.
▶ a teacher or writer sharing the joy of psychology with others.

The cluster of subfields we call psychology is a meeting ground for different disciplines. Thus, it’s a perfect home for those with wide-ranging interests. In their diverse activities, from biological experimentation to cultural comparisons, the tribe of psychology is united by a common quest: describing and explaining behavior and the mind underlying it.

Some psychologists conduct **basic research** that builds psychology’s knowledge base. In the pages that follow we will meet a wide variety of such researchers, including **biological psychologists** exploring the links between brain and mind; **developmental psychologists** studying our changing abilities from womb to tomb; **cognitive psychologists** experimenting with how we perceive, think, and solve problems; and **social psychologists** exploring how we view and affect one another.

These and other psychologists also may conduct **applied research** that tackles practical problems. **Industrial-organizational psychologists**, for example, use psychology’s concepts and methods in the workplace to help organizations and companies select and train employees, boost morale and productivity, design products, and implement systems.

Although most psychology textbooks focus on psychological science, psychology is also a helping profession devoted to such practical issues as how to have a happy marriage, how to overcome anxiety or depression, and how to raise thriving children. As a science, psychology at its best bases such interventions on **evidence of effectiveness**. **Counseling psychologists** help people to cope with challenges and crises (including academic, vocational, and marital issues) and to improve their

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**basic research** pure science that aims to increase the scientific knowledge base.

**applied research** scientific study that aims to solve practical problems.

**counseling psychology** a branch of psychology that assists people with problems in living (often related to school, work, or marriage) and in achieving greater well-being.
personal and social functioning. **Clinical psychologists** assess and treat mental, emotional, and behavior disorders (APA, 2003). Both counseling and clinical psychologists administer and interpret tests, provide counseling and therapy, and sometimes conduct basic and applied research. By contrast, **psychiatrists**, who also often provide psychotherapy, are medical doctors licensed to prescribe drugs and otherwise treat physical causes of psychological disorders. (Some clinical psychologists have lobbied for a similar right to prescribe mental-health–related drugs, and in 2002 and 2004 New Mexico and Louisiana became the first states to grant that right to specially trained and licensed psychologists.)

With perspectives ranging from the biological to the social, and with settings from the laboratory to the clinic, psychologists teach in medical schools, law schools, and theological seminaries, and they work in hospitals, factories, and corporate offices. They engage in interdisciplinary studies, such as psychohistory (the psychological analysis of historical characters), psycholinguistics (the study of language and thinking), and psychoceramics (the study of crackpots).²

Psychology also influences modern culture. Knowledge transforms us. Learning about the solar system and the germ theory of disease alters the way people think and act. Learning psychology’s findings also changes people: They less often judge psychological disorders as moral failings, treatable by punishment and ostracism. They less often regard and treat women as men’s mental inferiors. They less often view and rear children as ignorant, willful beasts in need of taming. “In each case,” noted Morton Hunt (1990, p. 206), “knowledge has modified attitudes, and, through them, behavior.” Once aware of psychology’s well-researched ideas—about how body and mind connect, how a child’s mind grows, how we construct our perceptions, how we remember (and misremember) our experiences, how people across the world differ (and are alike)—your mind may never again be quite the same.

**Tips for Studying Psychology**

1–5: How can psychological principles help you as a student?

The investment you are making in studying psychology should enrich your life and enlarge your vision. Although many of life’s significant questions are beyond psychology, some very important ones are illuminated by even a first psychology course. Through painstaking research, psychologists have gained insights into brain and mind, dreams and memories, depression and joy. Even the unanswered questions can enrich us, by renewing our sense of mystery about “things too wonderful” for us yet to understand. Your study of psychology can also help teach you how to ask and answer important questions—how to think critically as you evaluate competing ideas and claims.

Having your life enriched and your vision enlarged (and getting a decent grade) requires effective study. To master information, you must actively process it. Your mind is not like your stomach, something to be filled passively; it is more like a muscle that grows stronger with exercise. Countless experiments reveal that people learn and remember best when they put material in their own words, rehearse it, and then review and rehearse it again.

The SQ3R study method incorporates these principles (Robinson, 1970). SQ3R is an acronym for its five steps: Survey, Question, Read, Rehearse, Review.

> To study a module, first survey, taking a bird’s-eye view. Scan its headings, and notice how the module is organized.

> As you prepare to read each section, use its heading or numbered Preview Question to form your own question to answer as you read. For this section, you might have asked, “How can I most effectively and efficiently master the information in this book?”

² Confession: I wrote the last part of this sentence on April Fools’ Day.
Then read, actively searching for the answer to your question. At each sitting, read only as much as you can absorb without tiring. Usually a single module will do. Read actively and critically. Ask questions. Take notes. Consider implications: How does what you’ve read relate to your own life? Does it support or challenge your assumptions? How convincing is the evidence?

Having read a section, rehearse in your own words what you have read. Test yourself by trying to answer your question, rehearsing what you can recall, then glancing back over what you can’t recall.

Finally, review: Read over any notes you have taken, again with an eye on the module’s organization, and quickly review the whole module.

Survey, question, read, rehearse, review. I have organized this book to facilitate your use of the SQ3R study system. Each module begins with an outline that aids your survey. Headings and numbered Preview Questions suggest issues and concepts you should consider as you read. The material is organized into sections of readable length. At the end of each module, there are Rehearse It! questions and Test for Success exercises that help you test and rehearse what you’ve learned before moving on. The answers to these questions help you review the module’s essentials, and the list of key terms helps you check your mastery of important concepts. Survey, question, read . . .

Five additional study tips may further boost your learning:

Distribute your study time. One of psychology’s oldest findings is that spaced practice—perhaps one hour a day, six days a week—promotes better retention than massed practice—cramming it into one long study blitz. For example, rather than trying to read several modules in a single sitting, read just one and then turn to something else.

Spacing your study sessions requires a disciplined approach to managing your time. (Richard O. Straub explains time management in the helpful Study Guide that accompanies this text.)

Learn to think critically. Whether you are reading or in class, note people’s assumptions and values. What perspective or bias underlies an argument? Evaluate evidence. Is it anecdotal or based on scientific experiment? Assess conclusions. Are there alternative explanations? (Use the Test for Success: Critical Thinking Exercises at the end of each module to build your critical thinking skills as you check your understanding of the module’s main concepts.)

In class, listen actively. Listen for the main ideas and subideas of a lecture. Write them down. Ask questions during and after class. In class, as in your private study, process the information actively and you will understand and retain it better. As psychologist William James urged a century ago, “No reception without reaction, no impression without expression.”

Overlearn. We are prone to overestimating how much we know. You may understand a module as you read it, but by devoting extra study time to testing yourself and reviewing what you think you know, you will retain your new knowledge long into the future.

Be a smart test-taker. If a test contains both multiple-choice questions and an essay question, turn first to the essay. Read the question carefully, noting exactly what the instructor is asking. On the back of a page, pencil in a list of points you’d like to make and then organize them. Before writing, put aside the essay and work through the multiple-choice questions. (As you do so, your mind may continue to mull over the essay question. Sometimes the objective questions will bring pertinent thoughts to mind.) Then reread the essay question, rethink your answer, and start writing. When you finish, proofread your answer to eliminate spelling and grammatical errors that make you look less competent than you are. When reading multiple-choice questions, don’t confuse yourself by trying to imagine how each choice might be the right one. Instead, try to answer each question as if it were a fill-in-the-blank question. First cover the answers and form a sentence in your mind, recalling what you know to complete the sentence. Then read the answers on the test and find the alternative that best matches your own answer.
While exploring psychology, you will learn much more than effective study techniques. Psychology deepens our appreciation for how we humans perceive, think, feel, and act. By so doing it can indeed enrich our lives and enlarge our vision. Through this book I hope to help guide you toward that end. As educator Charles Eliot said a century ago: “Books are the quietest and most constant of friends, and the most patient of teachers.”

The History and Scope of Psychology

Module Review

1-1: What are some important milestones in the development of the science of psychology? Psychological science’s first laboratory appeared in 1879, launched by Wilhelm Wundt and his students. The field’s early scholars came from several disciplines and many countries.

Psychology began as a “science of mental life.” In the 1920s, under the influence of the behaviorists, it evolved into the “scientific study of observable behavior.” Since the cognitive revolution in the 1960s, psychology has been widely defined as the “science of behavior and mental processes.”

1-2: What is psychology’s historic big issue? Psychology’s biggest and most enduring concern has been the nature-nurture issue, the controversy over the relative contributions of the influences of genes and experience. Today’s science emphasizes the interaction of genes and experiences in specific environments.

1-3: What are psychology’s levels of analysis and related perspectives? The biopsychosocial approach integrates information from the biological, psychological, and social-cultural levels of analysis. Psychologists study human behaviors and mental processes from many different perspectives (including the neuroscience, evolutionary, behavior genetics, psychodynamic, behavioral, cognitive, and social-cultural).

1-4: What are some of psychology’s subfields? Some psychologists specialize in basic research (often in the subfields of biological, developmental, cognitive, personality, and social psychology). Others, for example, industrial-organizational psychologists, do applied research. Counseling psychologists and clinical psychologists practice psychology as a helping profession. Clinical psychologists study, assess, and treat (with psychotherapy) people with psychological disorders. Psychiatrists also study, assess, and treat people with disorders, but as medical doctors, they may prescribe drugs in addition to psychotherapy.

1-5: How can psychological principles help you as a student? Research has shown that learning and memory are enhanced by active study. The SQ3R study method—survey, question, read, rehearse, and review—applies the principles derived from this research.

Rehearse It!

You can use these Rehearse It! questions to gauge whether you are ready for the next module.

1. In 1879, in psychology’s first experiment, _______ and his students measured the time lag between hearing a ball hit a platform and pressing a key.
   a. Jean Piaget
   b. William James
   c. Sigmund Freud
   d. Wilhelm Wundt

2. A prominent psychology text was published in 1890. Its author was
   a. Wilhelm Wundt
   b. Mary Whiton Calkins
   c. Carl Rogers
   d. William James

3. In the early twentieth century, _______ redefined psychology as “the science of observable behavior.”
   a. John B. Watson
   b. Abraham Maslow
   c. William James
   d. Sigmund Freud

4. In the history of psychology, a major topic has been the relative influence of nature and nurture. Nature is to nurture as
   a. personality is to intelligence.
   b. biology is to experience.
   c. intelligence is to biology.
   d. psychological traits are to behaviors.

5. The perspective in psychology that focuses on how behavior and thought differ from situation to situation and from culture to culture is the _______ perspective.
   a. cognitive
   b. behavioral
   c. social-cultural
   d. neuroscience

6. A psychologist using the behavioral perspective would be most likely to study
   a. the effect of school uniforms on classroom behaviors.
   b. the hidden meaning in children’s themes and drawings.
   c. the age at which children can learn algebra.
   d. whether certain mathematical abilities appear to be inherited.
7. A psychologist treating emotionally troubled adolescents at a local mental health agency is most likely to be a(n)  
   a. research psychologist.  
   b. psychiatrist.  
   c. industrial-organizational psychologist.  
   d. clinical psychologist.  

8. A psychologist conducting basic research to expand psychology’s knowledge base would be most likely to  
   a. design a computer screen with limited glare and assess the effect on computer operators’ eyes after a day’s work.  
   b. treat older people who are overcome by depression.  
   c. observe 3- and 6-year-olds solving puzzles and analyze differences in their abilities.  
   d. interview children with behavioral problems and suggest treatments.  

### Terms and Concepts to Remember

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### Test For Success: Critical Thinking Exercise

1. “Nurture works on what nature endows.” Describe what this means, using your own words.

The Test for Success exercises offer you a chance to apply your critical thinking skills to aspects of the material you have just read. Suggestions for answering these questions can be found in Appendix D at the back of the book.

Multiple-choice self-tests and more may be found at www.worthpublishers.com/myers.