1 What Is Psychology?
Ask questions. . .
be willing to wonder

How does “pop psych” on the Internet and TV differ from the psychology in this book?

If you want to think critically, must you always be critical?

If you call yourself a psychotherapist, will you be breaking the law?

What’s the difference between a psychologist, a clinical psychologist, and a psychiatrist?

Every April Fools’ Day, the James Randi Educational Foundation announces its “Pigasus” Awards for the year’s worst “charlatans, swindlers, psychics, pseudo-scientists, and faith healers.” James Randi is a professional magician who, years ago, became outraged to see charlatans and scammers use plain old magic tricks as evidence of their “psychic powers” and to prey on unsuspecting victims to make money. Randi made it his cause to educate the public by exposing their fraudulent methods. (The awards are named for the mythical flying horse Pegasus and for Randi’s habit of saying “such and such a belief will come true when pigs fly.”) The awards and their 2011 “winners” include:

• The Funder Pigasus Award: CVS pharmacy, for supporting the manufacturers of “homeopathic” remedies, which contain none of the active ingredient they claim and have been shown to be useless in randomized clinical trials. Although other pharmacies sell these products too, CVS offers their own store brand of the popular homeopathic product oscillococcinum. Oscillococcinum is made by grinding up the liver of a duck, putting less than a single atom of it into sugar pills (the equivalent of adding a drop of water to the ocean), and then advertising the result as an effective treatment for flu.

• The Performer Pigasus Award: Televangelist Peter Popoff, who made millions in the 1980s by pretending to heal the sick and receive information about audience members directly from God. He went bankrupt in 1987, after Randi exposed his trick: He had a secret earpiece, through which his wife fed him information about those audience members. Now, in infomercials on BET, Popoff offers “supernatural debt relief” in exchange for offerings of hundreds or even thousands of dollars. IRS documents show that Popoff has taken in $23.5 million with this scheme.

• The Refusal to Face Reality Award: Andrew Wakefield, the researcher who launched the modern anti-vaccine panic by claiming that the measles, mumps, and rubella (MMR) vaccine was linked to autism. In 2010, the medical journal that had published his article officially retracted it, and the British medical journal BMJ called Wakefield’s paper an outright fraud, finding “clear evidence of falsification of data,” and that “he sought to exploit the ensuing MMR scare for financial gain,” taking more than $674,000 from lawyers who intended to sue vaccine manufacturers. Repeated studies have found no link between vaccines
Psychologists use scientific methods to study many puzzles of human behavior. Why do people dress up in funny outfits? Why do some people commit horrific acts of brutality? And what enables some people to become accomplished athletes in spite of having physical disabilities?

and autism. Yet Wakefield continues to ask the public to believe he is the victim of a conspiracy that is out to get him, and many worried parents are not vaccinating their children. As a result, measles, once nearly eradicated, is back with a vengeance, and children’s deaths from measles and whooping cough are rising for the first time in decades.

How in the world can you protect yourself from false claims and scammers? How can you tell the difference between medicines that work and save lives (such as vaccines) from those that are useless (such as homeopathic products)? How are you supposed to distinguish useful information on the Internet from worthless opinions, marketing ploys, and downright rubbish? Wait—here is a website that promises to blast printed information into your brain at a page a second. You can “mentally photograph the page at 25,000 words a minute.” Cool! Sign us up!

If only it were true. Fortunately for you, you are taking an introductory psychology course, and by the time you finish it, you will have some good answers about how you can sift through information overload and decide what to ignore and what’s important. Psychology can be defined generally as the discipline concerned with behavior and mental processes and how they are affected by an organism’s physical state, mental state, and external environment. This definition, however, is like defining a car as a vehicle for transporting people, without explaining how a car differs from a train or a bus or how a Ford differs from a Ferrari. To get a clear picture of this field, you need to know about its methods, its findings, and its ways of interpreting information. But first, let’s look more closely at what psychology is not.

You are about to learn. . .

- how “psychobabble” differs from serious psychology.
- what’s wrong with psychologists’ nonscientific competitors, such as astrologers and psychics.
Psychology, Pseudoscience, and Popular Opinion

In recent decades, the public’s appetite for psychological and medical information has created a huge market for the kind of outlandish advice and products we just described to you: pseudoscience and quackery covered by a veneer of scientific-sounding language. Pseudoscience promises easy fixes to life’s problems and challenges, such as resolving your unhappiness as an adult by “reliving” the supposed trauma of your birth, or becoming more creative on the job by “reprogramming” your brain. It often plays on the appeal of technology. All sorts of gizmos have been marketed with the promise that they will get both halves of your brain working at their peak: the Graham Potentializer, the Tranquilite, the Floatarium, the Transcutaneous Electro-Neural Stimulator, the Brain Supercharger, and the Whole Brain Wave Form Synchro-Energizer. (We are not making these up.)

The psychology you are about to study—real psychology—bears little relation to the popular psychology (“pop psych”) and its pseudoscientific relatives (jokingly called “psychobabble”) found on the Web, on television, and in thousands of self-help books. It is more complex, more informative, and, we think, far more helpful because it is based on scientific research and empirical evidence, which was gathered by careful observation, experimentation, and measurement. Scientific psychology also addresses a far broader range of issues than does popular psychology. When people think of psychology, they usually think of mental and emotional disorders, personal problems, and psychotherapy. But psychologists take as their subject the entire spectrum of brave and cowardly, intelligent and foolish, beautiful and brutish things that people do. They want to know how ordinary human beings (and other animals as well) learn, remember, solve problems, perceive, feel, and get along or fail to get along with others. They are therefore as likely to study commonplace experiences—rear- ing children, gossiping, remembering a shopping list, daydreaming, making love, and making a living—as exceptional ones.

Because so many pop-psych ideas have filtered into the media, education, and even the law, we all need to develop an ability to distinguish between psychobabble and serious psychology, and between unsupported popular opinion and findings based on research evidence. Are unhappy memories “repressed” and then accurately recalled years later, as if they had been recorded in perfect detail in the brain? Do most women suffer from emotional symptoms of premenstrual syndrome (PMS)? Do policies of abstinence from alcohol reduce rates of alcoholism? If you play Beethoven tapes to your infant, will your child become smarter? These beliefs are widely held, but as you will learn, they are wrong.

At the start of an introductory psychology course, many students hold beliefs that have been promoted in the popular culture, or are based on personal experience or “common sense,” but that are not scientifically supported. When two instructors gave their 90 introductory psychology students a true/false “Psychological Information” questionnaire on the first day of class—a questionnaire consisting entirely of false statements—the students were accurate only 38.5 percent of the time, which is actually worse than chance (Taylor & Kowalski, 2004). By the last week of class, however, when the students took a test containing all of the earlier items, their overall accuracy was much better: 66.3 percent. (See Figure 1.1.) Although there was still room for improvement, the students had lost confidence in their remaining misconceptions, suggesting that they were on the way to giving them up. If so, they had learned one of the most important lessons in science: Uncertainty about untested assumptions and beliefs can be a good thing.
Some people are influenced by psychology’s many nonscientific competitors: palm reading, graphology, fortune-telling, numerology, and the most popular, astrology. Like psychologists, promoters of these systems try to explain people’s problems and predict their behavior. If you are having romantic difficulties, an astrologer may advise you to choose an Aries instead of an Aquarius as your next love, and a “past-lives channeler” may say it’s because you were jilted in a former life. Belief in these unscientific approaches is widespread, even in scientifically advanced countries.

Yet, whenever the claims of psychics and astrologers are put to the test, those claims turn out to be so vague as to be meaningless (“Spirituality will increase next year”) or just plain wrong—as in the case of all the doomsday predictions that have occurred for centuries, especially during times of great social change and anxiety (Radford, 2010; Shaffer & Jadwiszczok, 2010). In 2008, one woman who calls herself the “psychic to the stars” predicted that George Clooney would marry and have a child, Sean Penn would be wounded in the Middle East, and John Edwards would win the U.S. presidency. Obviously, she was wrong on all counts. Moreover, contrary to what you might think from watching TV shows that feature lead characters with psychic abilities or from reading claims on psychic websites, no psychic has ever found a missing child, identified a serial killer, or helped police solve any other crime by using “psychic powers” (Radford, 2011). Their “help” merely adds to the heartbreak the victim’s family feels.

So why does belief in psychic abilities and other forms of pseudoscience persist? For one thing, it gives people a sense of control and predictability in a confusing world; indeed, our brains are probably wired to look for patterns in events, even when no patterns exist (Hood, 2009). Pseudoscience also confirms our existing beliefs and prejudices, whereas scientific psychology often challenges them. You do not have to be a psychologist to know that people do not always take kindly to having their beliefs challenged. You rarely hear someone cheerfully say, “Oh, thank you for explaining to me why my irrational beliefs are mistaken!” The person is more likely to say, “Oh, buzz off, and take your stupid ideas with you.”

Psychological findings need not be surprising or counterintuitive, however, to be important. Sometimes they validate common beliefs and then explain or extend them. Like scientists in other fields, psychological researchers strive not only to discover new phenomena and correct mistaken ideas but also to deepen our understanding of an already familiar world—by identifying the varieties of love, the origins of violence, or the reasons that a great song can lift our hearts.

You are about to learn . . .

- what it means to think critically.
- why not all opinions are created equal.
- eight guidelines for evaluating psychological claims.

Thinking Critically and Creatively about Psychology

In this book, you will gain practice in distinguishing scientific psychology from pseudoscience by thinking critically. Critical thinking is the ability and willingness to assess claims and make objective judgments on the basis of well-supported reasons and evidence rather than emotion or anecdote. Critical thinkers are able to look for
flaws in arguments and to resist claims that have no support. They realize that criticizing an argument is not the same as criticizing the person making it. Critical thinking, however, is not merely negative thinking. It includes the ability to be creative and constructive—the ability to come up with alternative explanations for events, think of implications of research findings, and apply new knowledge to social and personal problems. Critical thinking is indispensable in ordinary life. Without it, people cannot formulate a rational argument or see through misleading ads that play on their emotions. They may have trouble assessing a political proposal or candidate, deciding whether or when to have children, or making medical decisions.

Most people know that you have to exercise the body to keep it in shape, but they may not realize that clear thinking also requires effort and practice. All around us, we can see examples of flabby thinking. Sometimes people justify their mental laziness by proudly telling you they are open-minded. Many scientists have observed that it’s good to be open-minded, but not so open-minded that your brains fall out! Open-mindedness does not mean that all opinions are created equal and that everybody’s beliefs are as good as anyone else’s (Hare, 2009). On matters of personal preference, that is true; if you prefer the look of a Chevy truck to the look of a Honda Accord, no one can argue with you. But if you say, “The Chevy truck is more reliable than a Honda and gets better mileage besides” you have uttered more than mere opinion. Now you have to support your belief with evidence of the car’s reliability, mileage, and safety record (Ruggiero, 2004). And if you say, “Chevy trucks are the best in the world and Hondas do not exist; they are a conspiracy of the Japanese government,” you forfeit the right to have your opinion taken seriously. Your opinion, if it ignores reality, is not equal to any other.

Critical thinking is fundamental to all science, including psychological science. It will also improve your life in countless ways, including helping you learn better: In the study of introductory students’ misconceptions described earlier, students who did well on a critical-thinking test early in the course showed the greatest improvement over the semester. It will help you use the Internet better, too. You may pride yourself on being skilled at getting info with your favorite search engine, but a team of researchers found that most college students are easily tricked (Pan et al., 2007; Thompson, 2011). They tend to rely on the material that comes up at the top of the results list, without assessing its credibility: Was that profile of Martin Luther King Jr. written by a scholar or by white supremacists? Is that article really a paid advertisement for some product? The researchers found that the average high school and college student is unable to detect hidden agendas in what they read; they need, in the words of Internet pioneer and critic Howard Rheingold, a course in “crap detection 101”.

Critical thinking requires logical skills, but other skills and dispositions are also important (Anderson, 2005; Halpern, 2002; Levy, 2010; Stanovich, 2010). Here are eight essential critical-thinking guidelines that we will be emphasizing throughout this book.

**Ask Questions; Be Willing to Wonder.** What is the one kind of question that most exasperates parents of young children? “Why is the sky blue, Mommy?” “Why doesn’t the plane fall?” “Why don’t pigs have wings?” Unfortunately, as children grow up, they tend to stop asking “why” questions. (Why do you think this is?)

“The trigger mechanism for creative thinking is the disposition to be curious, to wonder, to inquire,”
observed Vincent Ruggiero (1988). “Asking ‘What’s wrong here?’ and/or ‘Why is this the way it is, and how did it come to be that way?’ leads to the identification of problems and challenges.” This educational program isn’t working; why not? I want to stop smoking and improve my grades; why can’t I seem to do it? Is my way of doing things the best way, or just the most familiar way? Critical thinkers are willing to question received wisdom—“We do it this way because this is the way we have always done things around here”—and ask, in essence, “Oh, yeah? Why?”

In psychological science, knowledge advances by asking questions. What is the biological basis of consciousness? How are memories stored and retrieved? Why do we sleep and dream? What causes schizophrenia? Critical thinkers are not discouraged by the fact that questions like these have not yet been fully answered; they see them as an exciting challenge. And they even enjoy thinking critically about poorly phrased questions, which can lead us to wrong answers. Consider the matter of homework. The questions have usually been: “Are American children doing too much homework or too little?” But as one observer wrote, “The question should be ‘how effectively do children’s after-school assignments advance learning?’” (Paul, 2011). As you probably know from experience, spending hours studying won’t help you learn if you are not studying effectively—as you will see at the end of this chapter.

**Define Your Terms.** Once you have raised a general question, the next step is to frame it in clear and concrete terms. “What makes people happy?” is a fine question

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**THINKING CRITICALLY AND CREATIVELY ABOUT PSYCHOLOGICAL ISSUES**

These eight critical-thinking guidelines will help you evaluate psychological findings, claims in the media, and problems that you encounter in your own life.

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**DEFINE YOUR TERMS**

People refer to intelligence all the time, but what is it exactly? Does the musical genius of a world-class violinist like Anne-Sophie Mutter count as intelligence? Is intelligence captured by an IQ score, or does it also include wisdom and practical “smarts”? We will consider some answers in Chapter 9.

**ASK QUESTIONS; BE WILLING TO WONDER**

Why do some people bravely come to the aid of their fellow human beings, even when it’s not their official job? And, on the other hand, why do people often behave in ways that are selfish, cruel, or violent? Social psychologists explore ways of explaining both sides of “human nature,” as we will see in Chapter 8.
for midnight reveries, but it will not lead to answers until you have defined what you mean by “happy.” Do you mean being in a state of euphoria most of the time? Do you mean feeling pleasantly contented with life? Do you mean being free of serious problems or pain?

Vague or poorly defined terms in a question can lead to misleading or incomplete answers, or cause terrible misunderstandings. For example, are people becoming less prejudiced against other groups? The answer may depend in part on how you define “prejudice.” Everyone might agree that a conscious dislike of another group qualifies as a prejudice. But what if a person feels uncomfortable with another group because he or she is unfamiliar with its rules and beliefs; is that person bigoted or just uninformed? What if a person blurts out an insulting remark while drunk; is that person prejudiced or just drunk? What if a person is unaware of having any prejudiced beliefs or feelings, yet a test suggests that he or she has an unconscious prejudice; what does that mean? In Chapter 8, we will examine the different ways that psychologists have defined and measured this phenomenon, and the different results they have obtained depending on how they define prejudice.

**Examine the Evidence.** Have you ever heard someone in the heat of an argument exclaim, “I just know it’s true, no matter what you say”? Have you ever made such a statement yourself? Accepting a claim or conclusion without evidence is a sure sign of lazy thinking. A critical thinker asks, “What evidence supports or

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**EXAMINE THE EVIDENCE**

When demonstrating “levitation” and other supposedly magical phenomena, illusionists exploit people’s tendency to trust the evidence of their own eyes even when such evidence is misleading, as discussed in Chapter 6.

**ANALYZE ASSUMPTIONS AND BIASES**

People often assume that drug effects are purely biological, and many Americans also share a cultural bias that all psychoactive drugs are inevitably harmful. The Rastafarian church, however, regards marijuana as a “wisdom weed.” Will these young Jamaican members react to the drug in the same way as someone who buys it on the street and smokes it alone or at a party? We will find out in Chapters 5 and 15.
Chapter 1  What Is Psychology?

refutes this argument and its opposition? How reliable is the evidence?” Have you ever received some dire warning or funny “I swear it’s true!” story from a friend, and then posted it on your Facebook page, only to learn later that it was a hoax or an urban legend? A critical thinker would ask, “Is this story something I’d better check out on snopes.com before I tell my closest 90,000 friends?”

Sometimes, of course, checking the reliability of the evidence for a claim is not practical. In those cases, critical thinkers consider whether the evidence comes from a reliable source (Lipps, 2004). Sources who are reliable exercise critical thinking themselves. They have education or experience in the field in which they claim expertise. They do not pressure people to agree with them. They are trusted by other experts in the field. They share their evidence openly. In psychology, they draw on research conducted according to certain rules and procedures, which you will be learning about in the next chapter.

**Analyse Assumptions and Biases.** Assumptions are beliefs that are taken for granted. Critical thinkers try to identify and evaluate the unspoken assumptions on which claims and arguments may rest—in the books they read, the political

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**DON'T OVERSIMPLIFY**

When you’re feeling angry, is it better to “let it out” or keep it “bottled up”? Either answer oversimplifies. Depending on the circumstances, sometimes it is helpful to express your feelings, but sometimes venting your anger makes everything worse, as we discuss in Chapter 11.

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**AVOID EMOTIONAL REASONING**

Intense feelings about controversial issues such as gay marriage can keep us from considering other viewpoints. The resolution of differences requires that we move beyond emotional reasoning and instead weigh point and counterpoint, as discussed in Chapter 9.
speeches they hear, and the ads that bombard them daily. The assumption might be “All Democrats (or Republicans) are idiots,” or “You need the product we are selling,” or “People have free will and are entirely responsible for any crimes they commit” (or, conversely, “People’s criminal behavior is a result of their biology or horrible childhood, so they aren’t responsible for their acts”). Everyone, of course, makes assumptions about how the world works; we could not function otherwise. But if we do not recognize our own assumptions and those of other people, our ability to judge an argument’s merits may be impaired.

When an assumption or belief keeps us from considering the evidence fairly, it becomes a bias. A bias often remains hidden until someone challenges our belief and we get defensive and angry. For instance, most people, psychologists included, believe that parents are the most important influence in shaping a child’s personality. It’s obvious, isn’t it? In her book *The Nurture Assumption*, Judith Rich Harris (2009) dared to question that assumption. Genes and peers, she argued, are more important influences on a child’s personality and behavior than how the parents raise the child. Because this idea challenged a widespread bias, it immediately provoked a storm of disbelief, outrage, and scorn. Some critics focused on Harris’s lack of credentials instead of her facts or her logic (although she wrote a successful developmental psychology text, she does not have a PhD), and many attacked the book without even bothering to read it. That is the nature of a bias: It creates intellectual blinders. (In Chapter 14, we will look more closely at Harris’s argument, and see that many of her once-infuriating ideas are now the “common wisdom.”)

**CONSIDER OTHER INTERPRETATIONS**

Hypnosis has traditionally been considered a trance state in which people involuntarily do things they ordinarily could not or would not do. But might there be another interpretation of the surprising things that hypnotized people often do? We’ll look at competing explanations in Chapter 5.

**TOLERATE UNCERTAINTY**

Many parents, because they naturally want their children to turn out well, have trouble accepting uncertainty about how to raise them. For example, should they let their baby sleep with them, or will that make the baby too dependent and clingy? In Chapter 13, we will look at why there is often no single right answer to what parents “should” do.
Avoid Emotional Reasoning. Emotion has a place in critical thinking. Passionate commitment to a belief motivates people to think boldly, defend unpopular ideas, and seek evidence for creative new theories. But when gut feelings replace clear thinking, the results can be dangerous. “Persecutions and wars and lynchings,” observed Edward de Bono (1985), “are all a result of gut feeling.”

Because our emotional reactions and cherished beliefs feel so right, so natural, we may not realize that people who hold an opposing viewpoint feel just as strongly as we do. But they usually do, which means that emotional conviction alone cannot settle arguments; in fact, it often makes them worse. The fact that you really, really feel strongly that something is true—or want it to be—doesn’t make it so.

All of us are apt to feel threatened and get defensive whenever our most cherished beliefs, or commitment to a course of action, are challenged by empirical evidence (Tavris & Aronson, 2007). At such times, it is especially important to separate the data from emotional reasoning. In a 2011 judicial ruling that vaccines do not cause autism, one of the judges expressed sympathy for parents coping with their children’s disorder, but added, “I must decide this case not on sentiment, but by analyzing the evidence.” You probably hold strong feelings about many topics of psychological interest, such as drug use, racism, sexual orientation, the origins of intelligence, and what makes people fat or thin. As you read this book, you may find yourself quarreling with findings that you dislike. Disagreement is fine; it means that you are reading actively and are engaged with the material. All we ask is that you think about why you are disagreeing: Is it because the evidence is unpersuasive or because the results make you feel anxious or annoyed?

Don’t Oversimplify. Critical thinkers look beyond the obvious, resist easy generalizations, and reject either—or thinking. For instance, is it better to feel you have control over everything that happens to you or to accept with tranquility whatever life serves up? Either position oversimplifies. As we will see in Chapter 11, a sense of control has many important benefits, but sometimes it is best to go with the flow.

A common form of oversimplification is argument by anecdote—generalizing from a personal experience or from a few examples to everyone: One crime committed by a paroled ex-convict means that parole should be abolished; one friend who hates her school means that everybody who goes there hates it. Anecdotes are often the source of stereotyping as well: One dishonest mother on public assistance means everyone on welfare is dishonest; one encounter with an unconventional Californian means they are all flaky. Critical thinkers want more evidence than one or two stories before drawing such sweeping conclusions.

Consider Other Interpretations. Critical thinkers creatively generate as many reasonable explanations of the topic at hand as possible before settling on the most likely one. Suppose a news magazine reports that people with chronic depression are more likely than nondepressed people to develop cancer. Before concluding that depression causes cancer, you would need to consider some other possibilities. Perhaps depressed people are more likely to smoke and to drink excessively, and those unhealthful habits increase their cancer risk. Or perhaps early, as yet undetected cancers produce biochemical changes that create the physical and emotional symptoms of depression. Alternative explanations such as these must be ruled out by further investigation before we can conclude that depression is a direct cause of cancer. (It’s not, by the way.)

Once several explanations of a phenomenon have been generated, a critical thinker chooses the one that accounts for the most evidence while making the fewest
unverified assumptions. This principle is known as Occam’s razor, after the fourteenth-century philosopher who first formulated it. Thus, if a fortune-teller reads your palm and predicts that you will meet the love of your life on a subway in London, that you will make a fortune with an Internet enterprise, and that you will have red-haired twins, then one of two things must be true (Steiner, 1989):

• The fortune-teller can actually sort out the infinite number of interactions among people, animals, events, objects, and circumstances that could affect your life and can know for sure the outcome. Moreover, this fortune-teller is able to alter all the known laws of physics and defy the hundreds of studies showing that no one, under proper procedures for validating psychic predictions, has been able to predict the future for any given individual.

OR

• The fortune-teller is faking it.

A critical thinker would prefer the second alternative because it requires fewer assumptions and has the most supporting evidence.

Tolerate Uncertainty. Ultimately, learning to think critically teaches us one of the hardest lessons of life: how to live with uncertainty. Sometimes there is little or no evidence available to examine. Sometimes the evidence permits only tentative conclusions. Sometimes the evidence seems strong enough to permit conclusions until, exasperatingly, new evidence throws our beliefs into disarray. Critical thinkers are willing to accept this state of uncertainty. They are not afraid to say, “I don’t know” or “I’m not sure.” This admission is not an evasion but a spur to further creative inquiry. Critical thinkers know that the more important the question, the less likely it is to have a single simple answer. The need to accept a certain amount of uncertainty does not mean that we must abandon all of the beliefs and convictions that motivate and inspire us. It means only that we must hold them lightly enough to change our minds when we need to.

Critical thinking is a process, not a once-and-for-all accomplishment. No one ever becomes a perfect critical thinker, entirely unaffected by emotional reasoning and wishful thinking. We are all less open-minded than we think; it is always easier to poke holes in another person’s argument than to critically examine our own position. Yet we think the journey is well worth the mental effort, because the ability to think critically can help people in countless ways, from saving them money to improving their relationships.

As you read this book, keep in mind the eight guidelines we have described, which are summarized in Review 1.1 on the next page. Because practice in critical thinking can help you bulk up your “thinking muscles” and understand psychological concepts better, we will be giving you many opportunities to apply these guidelines. Look for questions in the margin, accompanied by a critical-thinking icon, which will draw your attention to a discussion where one of the guidelines is especially relevant. In the quizzes and with some photos, the icon will identify questions that give you practice in applying the guidelines yourself. (However, critical thinking is important throughout every chapter, not just where the icon appears.) Each chapter will also end with a discussion called “Taking Psychology with You,” which we hope will help you apply critical thinking to a topic in the chapter and take its message with you.
Chapter 1  What Is Psychology?

You are about to learn.

• the lesson of phrenology for modern psychology.
• how and when psychology became a formal discipline.
• three early schools of psychology.

Quick Quiz

Amelia and Harold are arguing about the death penalty. “Look, I just feel strongly that it’s barbaric, ineffective, and wrong,” says Harold. “You’re nuts,” says Amelia. “I believe in an eye for an eye, and besides, I’m absolutely sure it’s a deterrent to further crime.” Which lapses of critical thinking might Amelia and Harold be committing?

Answers:

(1) They are reasoning emotionally ("I feel strongly about this, so I’m right and you’re wrong").
(2) They do not cite evidence that supports or contradicts their arguments. What do studies show about the link between the death penalty and crime? How often are innocent people executed?
(3) They have not examined the assumptions and biases they bring to the discussion. They feel strongly about their positions and are not open to new evidence.
(4) They may not be clearly defining the problem they are discussing. What is the purpose of the death penalty? Is it to deter crime, to satisfy the desire for revenge, or to keep criminals from doing criminal acts?

Review 1.1 Guidelines to Thinking Critically about Psychological Issues

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<tr>
<th>Guideline</th>
<th>Example</th>
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<tr>
<td>Ask questions; be willing to wonder</td>
<td>“Can I recall events from my childhood accurately?”</td>
</tr>
<tr>
<td>Define your terms</td>
<td>“By ‘childhood,’ I mean ages 3 to 12; by ‘events,’ I mean things that happened to me personally, like a trip to the zoo or a stay in the hospital; by ‘accurately,’ I mean the event basically happened the way I think it did.”</td>
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<tr>
<td>Examine the evidence</td>
<td>“I feel I recall my fifth birthday party perfectly, but studies show that people often reconstruct past events inaccurately.”</td>
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<tr>
<td>Analyze assumptions and biases</td>
<td>“I’ve always assumed that memory is like a tape recorder—perfectly accurate for every moment of my life—but maybe this is just a bias, because it’s so reassuring.”</td>
</tr>
<tr>
<td>Avoid emotional reasoning</td>
<td>“I really want to believe this memory is true, but that doesn’t mean it is.”</td>
</tr>
<tr>
<td>Don’t oversimplify</td>
<td>“Some of my childhood memories could be accurate, others mistaken, and some partly right and partly wrong.”</td>
</tr>
<tr>
<td>Consider other interpretations</td>
<td>“Some ‘memories’ could be based on what my parents told me later, not on my own recall.”</td>
</tr>
<tr>
<td>Tolerate uncertainty</td>
<td>“I may never know for sure whether some of my childhood memories are real or accurate.”</td>
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NOTE: You will be reading a lot more about the reliability of memory in Chapter 10.
Psychology’s Past: From the Armchair to the Laboratory

Now that you know what psychology is and what it isn’t, and why studying it requires critical thinking, let us see how psychology developed into a modern science.

Until the nineteenth century, psychology was not a formal discipline. Of course, many of the great thinkers of history, from Aristotle to Zoroaster, raised questions that today would be called psychological. They wanted to know how people take in information through their senses, use information to solve problems, and become motivated to act in brave or villainous ways. They wondered about the elusive nature of emotion, and whether it controls us or is something we can control. Like today’s psychologists, they wanted to describe, predict, understand, and modify behavior in order to add to human knowledge and increase human happiness. But unlike modern psychologists, scholars of the past did not rely heavily on empirical evidence. Often their observations were based simply on anecdotes or descriptions of individual cases.

This does not mean that the forerunners of modern psychology were always wrong. On the contrary, they often had insights and made observations that were verified by later work. Hippocrates (c. 460 B.C.–c. 377 B.C.), the Greek physician known as the founder of modern medicine, observed patients with head injuries and inferred that the brain must be the ultimate source of “our pleasures, joys, laughter, and jests as well as our sorrows, pains, griefs, and tears.” And so it is. In the first century A.D., the Stoic philosophers observed that people do not become angry, sad, or anxious because of actual events but because of their explanations of those events. And so they do. In the seventeenth century, the English philosopher John Locke (1643–1704) argued that the mind works by associating ideas arising from experience, and this notion continues to influence many psychologists today.

But without empirical methods, the forerunners of psychology also committed terrible blunders. One was the theory of phrenology (Greek for “study of the mind”), which became wildly popular in Europe and the United States in the early 1800s. Phrenologists argued that different brain areas accounted for specific character and personality traits, such as “stinginess” and “religiosity.” Moreover, they said, such traits could be “read” from bumps on the skull. Thieves supposedly had large bumps above the ears. When phrenologists examined people with “stealing bumps” who were not thieves, they explained away this counterevidence by saying that other bumps on the skull represented positive traits that must be holding the person’s thieving impulses in check.

In the United States, all sorts of people eagerly sought the services of phrenologists. Parents used them to make decisions about child rearing; schools used them to decide which teachers to hire; and businesses used them to find out which employees were likely to be loyal and honest (Benjamin, 1998). Some phrenologists offered classes or self-study programs for people who wanted to overcome their deficiencies; these were the forerunners of today’s many self-improvement programs and seminars. Enthusiasm for phrenology did not disappear until well into the twentieth century, even though phrenology was a classic pseudoscience—sheer nonsense.

The Birth of Modern Psychology

At about the time that phrenology was peaking in popularity, several pioneering men and women were starting to study psychological issues using scientific methods. In 1879, the first psychological laboratory was officially established in Leipzig,
Germany, by Wilhelm Wundt [VIL-helm Voont]. Wundt (1832–1920), who was trained in medicine and philosophy, wrote many volumes on psychology, physiology, natural history, ethics, and logic. But psychologists especially revere him because he was the first person to announce (in 1873) that he intended to make psychology a science and because his laboratory was the first to have its results published in a scholarly journal. Although it started out as just a few rooms in an old building, the Leipzig laboratory soon became the go-to place for anyone who wanted to become a psychologist.

One of Wundt’s favorite research methods was called trained introspection—training volunteers to carefully observe, analyze, and describe their own sensations, mental images, and emotional reactions. This was not as easy as it sounds. Wundt’s volunteers had to make 10,000 practice observations before they were allowed to participate in an actual study. Once trained, they might take as long as 20 minutes to report their inner experiences during a 1.5-second experiment. The goal was to break down behavior into its most basic elements, much as a chemist might break down water into hydrogen plus oxygen. Most psychologists eventually rejected trained introspection as being too subjective, but Wundt is still usually credited with formally initiating the movement to make psychology a science.

**Three Early Psychologies**

During the early decades of psychology’s existence as a formal discipline, three schools of psychological thought became popular.

**Structuralism.** In the United States, Wundt’s ideas were popularized in somewhat modified form by one of his students, E. B. Titchener (1867–1927), who gave Wundt’s approach the name structuralism. Like Wundt, structuralists hoped to analyze sensations, images, and feelings into basic elements. A person might be asked to listen to a metronome clicking and to report exactly what he or she heard. Most people said they perceived a pattern (such as CLICK click click CLICK click click), even though the clicks of a metronome are actually all the same. Or a person might be asked to break down all the different components of taste when biting into an orange (sweet, tart, wet, and so on).

However, after you have discovered the building blocks of a particular sensation or image and how they link up, then what? The structuralists did not have an answer. And their reliance on introspection also got them into trouble, because despite their training, introspectors often produced conflicting reports. When asked what image came to mind when they heard the word triangle, most respondents said they imagined a visual image of a form with three sides and three corners. But one person might report a flashing red form with equal angles, whereas another reported a revolving colorless form with one angle larger than the other two. Some people even claimed they could think about a triangle without forming any visual image at all (Boring, 1953). It was hard, therefore, to know what mental attributes of a triangle were basic.

And so, despite its ability to generate an intensive program of research, structuralism soon lost favor. Years after its demise, Wolfgang Köhler (1959) recalled how he and his colleagues had responded to it as students: “What had disturbed us was . . . the implication that human life, apparently so colorful and so intensely dynamic, is actually a frightful bore.”

**Functionalism.** Another early approach to scientific psychology, called functionalism, emphasized the function or purpose of behavior, as opposed to its analysis and description. One of functionalism’s leaders was William James...
(1842–1910), an American philosopher, physician, and psychologist who argued that searching for building blocks of experience, as Wundt and Titchener tried to do, was a waste of time because the brain and the mind are constantly changing. Attempting to grasp the nature of the mind through introspection, wrote James (1890/1950), is “like seizing a spinning top to catch its motion, or trying to turn up the gas quickly enough to see how the darkness looks.” (James was a great writer.)

Where the structuralists asked what happens when an organism does something, the functionalists asked how and why. They were inspired in part by the evolutionary theories of British naturalist Charles Darwin (1809–1882). Darwin had argued that a biologist’s job is not merely to describe, say, the puffed-out chest of a pigeon or the drab markings of a lizard, but also to figure out how these attributes enhance survival. Do they help the animal attract a mate or hide from its enemies? Similarly, the functionalists wanted to know how specific behaviors and mental processes help a person or animal adapt to the environment, so they looked for underlying causes and practical consequences of these behaviors and processes. Unlike the structuralists, they felt free to pick and choose among many methods, and they broadened the field of psychology to include the study of children, animals, religious experiences, and what James called the “stream of consciousness”—a term still used because it so beautifully describes the way thoughts flow like a river, tumbling over each other in waves, sometimes placid, sometimes turbulent.

As a school of psychology, functionalism, like structuralism, was short-lived. Yet the functionalists’ emphasis on the causes and consequences of behavior was to set the course of psychological science.

**Psychoanalysis.** The nineteenth century also saw the development of psychological therapies. In the United States, the wildly popular Mind Cure movement lasted from 1830 to 1900; “mind cures” were efforts to correct the false ideas that were said to make people anxious, depressed, and unhappy. The Mind Cure movement was the forerunner of modern cognitive therapies (see Chapter 16).

However, the form of therapy that would have the greatest impact worldwide for much of the twentieth century had its roots in Vienna, Austria. While researchers were working in their laboratories, struggling to establish psychology as a science, Sigmund Freud (1856–1939) was in his office, listening to his patients’ reports of depression, nervousness, and obsessive habits. Freud became convinced that many of his patients’ symptoms had mental, not physical, causes. Their distress, he concluded, was due to conflicts and emotional traumas that had occurred in early childhood and that were too threatening to be remembered consciously, such as forbidden sexual feelings for a parent.

Freud argued that conscious awareness is merely the tip of a mental iceberg. Beneath the visible tip, he said, lies the unconscious part of the mind, containing unrevealed wishes, passions, guilty secrets, unspeakable yearnings, and conflicts between desire and duty. Many of these urges and thoughts are sexual or aggressive in nature. We are not aware of them as we go blithely about our daily business, yet they make themselves known in dreams, slips of the tongue, apparent accidents, and even jokes. Freud (1905a) wrote, “No mortal can keep a secret. If the lips are silent, he chatters with his fingertips; betrayal oozes out of him at every pore.”
Freud's ideas were not exactly an overnight sensation; his first book, *The Interpretation of Dreams* (1900/1953), managed to sell only 600 copies in the eight years following its publication. Eventually, however, his ideas evolved into a broad theory of personality and a method of psychotherapy, both of which became known as *psychoanalysis*. Most Freudian concepts were, and still are, rejected by a majority of empirically oriented psychologists, but they had a profound influence on the philosophy, literature, and art of the twentieth century, and Freud's name is now as much a household word as Einstein's. Today, some schools of psychotherapy draw on psychoanalytic ideas, emphasizing unconscious forces and conflicts within the individual, as we will see in Chapter 16.

From these early beginnings in philosophy, natural science, and medicine, psychology has grown into a complex discipline encompassing many specialties, perspectives, and methods. Today the field is like a large, sprawling family. The members of this family share common great-grandparents; many of the cousins have formed alliances, but some are quarreling, and a few are barely speaking to one another.
the customs of his culture. Modern psychological scientists typically approach their investigations from one of four different, although overlapping, approaches: biological, learning, cognitive, and sociocultural. Each perspective reflects different questions about human behavior, different assumptions about how the mind works, and, most important, different ways of explaining why people do what they do.

1. **The biological perspective** focuses on how bodily events affect behavior, feelings, and thoughts. Electrical impulses shoot along the intricate pathways of the nervous system. Hormones course through the bloodstream, telling internal organs to slow down or speed up. Chemical substances flow across the tiny gaps that separate one microscopic brain cell from another. Biological psychologists study these physical events to interact with events in the external environment to produce perceptions, memories, and behavior.

Researchers in this perspective study how biology affects learning and performance, perceptions of reality, the experience of emotion, and vulnerability to emotional disorder. They study how the mind and body interact in illness and health. They investigate the contributions of genes in the development of abilities and personality traits. One popular specialty, evolutionary psychology, follows in the footsteps of functionalism by focusing on how genetically influenced behavior that was functional or adaptive during our evolutionary past may be reflected in many of our present behaviors, mental processes, and traits (see Chapter 3). The message of the biological approach is that we cannot really know ourselves if we do not know our bodies.

2. **The learning perspective** is concerned with how the environment and experience affect the behavior of human beings (and other animals). Within this perspective, behaviorists focus on the environmental rewards and punishers that maintain or discourage specific behaviors. Behaviorists do not invoke the mind or mental states to explain behavior. They prefer to stick to what they can observe and measure directly: acts and events taking place in the environment. For example, do you have trouble sticking to a schedule? A behaviorist would identify the environmental distractions that could help account for this common problem. Behaviorism was the dominant school of scientific psychology in North America for nearly fifty years, through the 1960s.

Today, social-cognitive learning theorists combine elements of behaviorism with research on thoughts, values, expectations, and intentions. They believe that people learn not only by adapting their behavior to the environment, but also by observing and imitating others and by thinking about the events happening around them. As we will see, the learning perspective has many practical applications. Historically, the behaviorists’ insistence on precision and objectivity has done much to advance psychology as a science, and learning research in general has given psychology some of its most reliable findings.

3. **The cognitive perspective** emphasizes what goes on in people’s heads—how people reason, remember, understand language, solve problems, explain experiences, acquire moral standards, and form beliefs. (The word cognitive comes from the Latin for “to know.”) One of its most important contributions has been to show how people’s thoughts and explanations affect their actions, feelings, and choices. Using clever methods to infer mental processes from observable behavior, cognitive researchers have been able to study phenomena that were once only the stuff of speculation, such as emotions, motivations, insight, and the kind of “thinking” that goes on without awareness.

**biological perspective**
A psychological approach that emphasizes bodily events and changes associated with actions, feelings, and thoughts.

**evolutionary psychology**
A field of psychology emphasizing evolutionary mechanisms that may help explain human commonalities in cognition, development, emotion, social practices, and other areas of behavior.

**learning perspective**
A psychological approach that emphasizes how the environment and experience affect a person’s or animal’s actions; it includes behaviorism and social-cognitive learning theories.

**cognitive perspective**
A psychological approach that emphasizes mental processes in perception, memory, language, problem solving, and other areas of behavior.

—Watch the Video
*The Basics: Diverse Perspectives* in MyPsychLab

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**THINKING CRITICALLY**
Ask questions; be willing to wonder.

What makes us who we are? Psychological scientists often approach this question differently, depending on whether they take a biological, learning, cognitive, or sociocultural perspective. How do these influences interact to make us who we are?
They are designing computer programs that model how humans perform complex
tasks, discovering what goes on in the mind of an infant, and identifying types of
intelligence not measured by conventional IQ tests. The cognitive approach is one of
the strongest forces in psychology and has inspired an explosion of research on the
intricate workings of the mind.

The sociocultural perspective focuses on social and cultural forces outside the individual,
from how we kiss to what and where we eat. Most of us underestimate the impact of
other people, the social context, and cultural rules on nearly everything we do. We are
like fish that are unaware they live in water, so obvious is water in their lives. Socio-
cultural psychologists study the water—the social and cultural environment that we
“swim” in every day.

Within this perspective, social psychologists focus on social rules and roles, how
groups affect attitudes and behavior, why people obey authority, and how each of us
is affected by other people—spouses, lovers, friends, bosses, parents, and strangers.
Cultural psychologists examine how cultural rules and values, both explicit and
unspoken, affect people’s development, behavior, and feelings. They might study how
culture influences people’s willingness to help a stranger in distress or what they do
when they are angry. American researchers still focus mainly on Americans, who com-
prise less than 5 percent of the world’s population (Arnett, 2008). However, in this
book we have made a concerted effort to cite studies that include other nationalities
as well. Because human beings are social animals who are profoundly affected by their
different cultural worlds, the sociocultural perspective is making psychology a more
representative and rigorous discipline.

Review 1.2 summarizes these four perspectives and shows how they might be
applied to a concrete issue, the problem of violence. See if you can apply these
perspectives to another issue of your choosing.

## REVIEW 1.2  The Four Major Perspectives in Psychological Science

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Major Topics of Study</th>
<th>Sample Finding on Violence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>The nervous system, hormones, brain chemistry, heredity,</td>
<td>Brain damage caused by birth complications or child abuse might incline some people toward violence.</td>
</tr>
<tr>
<td></td>
<td>evolutionary influences</td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>Environment and experience</td>
<td>Violence increases when it pays off.</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Environmental determinants of observable behavior</td>
<td></td>
</tr>
<tr>
<td>Social-Cognitive</td>
<td>Environmental influences, observation and imitation, beliefs and values</td>
<td>Violent role models can influence some children to behave aggressively.</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Thinking, memory, language, problem solving, perceptions</td>
<td>Violent people are often quick to perceive provocation and insult.</td>
</tr>
<tr>
<td>Sociocultural</td>
<td>Social and cultural contexts</td>
<td>People are often more aggressive in a crowd than they would be on their own.</td>
</tr>
<tr>
<td>Social Psychology</td>
<td>Social rules and roles, groups, relationships</td>
<td>Cultures based on herding rather than agriculture tend to train boys to be aggressive.</td>
</tr>
<tr>
<td>Cultural Psychology</td>
<td>Cultural norms, values, and expectations</td>
<td></td>
</tr>
</tbody>
</table>
Throughout psychology’s history, various movements and intellectual trends have emerged that do not fit neatly into any of the major perspectives but that have had an impact on all of them. One is feminist psychology. As women began to enter psychology in greater numbers in the 1970s, they documented evidence of a pervasive bias in the research methods used and in the very questions that researchers had been asking (Crawford & Marecek, 1989; Eagly et al., 2012; Shields & Dicicco, 2011). They noted that many studies had used only men as subjects—and usually only young, white, middle-class men, at that—and they showed why it was often inappropriate to generalize to everyone else from such a narrow research base. They spurred the growth of research on topics that had long been ignored in psychology, including menstruation, motherhood, rape and domestic violence, the dynamics of power and sexuality in relationships, definitions of masculinity and femininity, gender roles, and sexist attitudes. They critically examined the male bias in psychotherapy, starting with Freud’s own case studies. And they analyzed the social consequences of psychological findings, showing how research has often been used to justify the lower status of women and other disadvantaged groups. Feminist psychology has even influenced the study of men. In recent years, the field of men’s studies and the psychology of men has been gaining prominence, focusing on such diverse topics as men’s health, emotions, and the ways that culture shapes notions of “masculinity” (Bosson & Vandello, 2011). Feminist psychology greatly advanced efforts to make psychology the study of all human beings, of all cultures and ethnicities, and other groups have made similar contributions. In 1976, black psychologist Robert Guthrie, in Even the Rat Was White, wrote a searing and influential indictment of racism in psychological research. Since the 1970s, African-American, Latino, and Asian psychologists, gay and lesbian psychologists, and disabled psychologists have greatly expanded the theoretical and empirical vistas of psychology, as we will see throughout this book.

Quick Quiz

Anxiety is a common problem. Which of the four major perspectives in psychology is associated with each of these explanations?

1. Anxious people often think about the future in distorted ways.
2. Anxiety symptoms often bring hidden rewards, such as being excused from exams.
3. Excessive anxiety can be caused by a chemical imbalance.
4. A national emphasis on competition and success promotes anxiety about failure.

Answers:

You are about to learn... 

• why you can’t assume that all therapists are psychologists, or that all psychologists are therapists.
• the three major areas of psychologists’ professional activities.
• the difference between a clinical psychologist and a psychiatrist.

What Psychologists Do

Now you know the main viewpoints that guide psychologists in their work. But what do psychologists actually do with their time between breakfast and dinner?
To most people, the word psychologist conjures up an image of a therapist listening intently while a client pours forth his or her troubles. Many psychologists do in fact fit this image, but others do not. The professional activities of psychologists generally fall into three broad categories: (1) teaching and doing research in colleges and universities; (2) providing health or mental health services, often referred to as psychological practice; and (3) conducting research or applying its findings in nonacademic settings, such as business, sports, government, law, and the military (see Review 1.3). Some psychologists move flexibly across these areas. A researcher might also provide counseling services in a mental health setting, such as a clinic or a hospital; a university professor might teach, do research, and serve as a consultant in legal cases.

**Psychological Research**

Most psychologists who do research have doctoral degrees (PhDs) or EdDs (doctorates in education). Some, seeking knowledge for its own sake, work in basic psychology, doing “pure” research. Others, concerned with the practical uses of knowledge, work in applied psychology. The two approaches are complementary: Applied psychology has direct relevance to human problems, but without basic psychology, there would be little knowledge to apply. A psychologist doing basic research might ask, “How does peer pressure influence people’s attitudes and behavior?” An applied psychologist might ask, “How can knowledge about peer pressure be used to get college students to quit binge drinking?”

**REVIEW 1.3 What Is a Psychologist?**

Not all psychologists do clinical work. Many do research, teach, work in business, or consult. The professional activities of psychologists with doctorates fall into three general categories:

<table>
<thead>
<tr>
<th>Academic/Research Psychologists</th>
<th>Clinical Psychologists</th>
<th>Psychologists in Industry, Law, or Other Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialize in areas of pure or applied research, such as:</td>
<td>Do psychotherapy and sometimes research; may work in any of these settings:</td>
<td>Do research or serve as consultants to institutions on such issues as:</td>
</tr>
<tr>
<td>Human development</td>
<td>Private practice</td>
<td>Sports</td>
</tr>
<tr>
<td>Psychometrics (testing)</td>
<td>Mental health clinics</td>
<td>Consumer issues</td>
</tr>
<tr>
<td>Health</td>
<td>General hospitals</td>
<td>Advertising</td>
</tr>
<tr>
<td>Education</td>
<td>Mental hospitals</td>
<td>Organizational problems</td>
</tr>
<tr>
<td>Industrial/organizational psychology</td>
<td>Research laboratories</td>
<td>Environmental issues</td>
</tr>
<tr>
<td>Physiological psychology</td>
<td>Colleges and universities</td>
<td>Public policy</td>
</tr>
<tr>
<td>Sensation and perception</td>
<td></td>
<td>Opinion polls</td>
</tr>
<tr>
<td>Design and use of technology</td>
<td></td>
<td>Military training</td>
</tr>
</tbody>
</table>

Research psychology is the aspect of psychology least recognized and understood by the public. Psychology has never had a U.S. postal stamp commemorating the discipline or its founders, unlike dozens of other fields, including poultry farming and truck driving. Bemoaning this fact, Ludy Benjamin (2003) argued that it was evidence that the public “has minimal understanding of psychology as a science and even less appreciation for what psychological scientists do” or how psychological research
contributes to human welfare. We hope that by the time you finish this book, you will have a greater appreciation for what research psychologists do and for their contributions to human welfare. Here are just a few of the major nonclinical specialties in psychology:

• *Experimental psychologists* conduct laboratory studies of learning, motivation, emotion, sensation and perception, physiology, and cognition. Do not be misled by the term experimental, though; other psychologists also do experiments.

• *Educational psychologists* study psychological principles that explain learning and search for ways to improve educational systems. Their interests range from the application of findings on memory and thinking to the use of rewards to encourage achievement.

• *Developmental psychologists* study how people change and grow over time physically, mentally, and socially. Some specialize in childhood issues; others study adolescence, young adulthood, the middle years, or old age.

• *Industrial/organizational psychologists* study behavior in the workplace. They are concerned with group decision making, employee morale, work motivation, productivity, job stress, personnel selection, marketing strategies, equipment design, and many other issues.

• *Psychometric psychologists* design and evaluate tests of mental abilities, aptitudes, interests, and personality. Nearly all of us have had firsthand experience with one or more of these tests in school, at work, or in the military.

**Psychological Practice**

Psychological practitioners, whose goal is to understand and improve people’s physical and mental health, work in mental hospitals, general hospitals, clinics, schools, counseling centers, and private practice. Since the late 1970s, the proportion of psychologists who are practitioners has steadily increased. Practitioners now account for over two-thirds of new psychology doctorates and members of the American Psychological Association (APA), which is international despite its name, and is the largest association of professional psychologists in the world.

Some practitioners are *counseling psychologists*, who generally help people deal with problems of everyday life, such as test anxiety, family conflicts, or low job motivation. Others are *school psychologists*, who work with parents, teachers, and students to enhance students’ performance and resolve emotional difficulties. The majority, however, are *clinical psychologists*, who diagnose, treat, and study mental or emotional problems. Clinical psychologists are trained to do psychotherapy with severely disturbed people, as well as with those who are simply troubled or unhappy or who want to learn to handle their problems better.

In almost all states, a license to practice clinical psychology requires a doctorate. Most clinical psychologists have a PhD, some have an EdD, and some have a PsyD (doctorate in psychology, pronounced “sy-dee”). Clinical psychologists typically do four or five years of graduate work in psychology, plus at least a year’s internship under the direction of a licensed psychologist. Clinical programs leading to a PhD or EdD are usually designed to prepare a person both as a scientist and as a clinical practitioner; they require completion of a *dissertation*, a research project that contributes to knowledge in the field. Programs leading to a PsyD do not usually require...
People often confuse clinical psychologist with three other terms: psychotherapist, psychoanalyst, and psychiatrist. But these terms mean different things:

- A psychotherapist is simply anyone who does any kind of psychotherapy. The term is not legally regulated; in fact, in most states, anyone can say that he or she is a “therapist” of one sort or another without having any training at all.

- A psychoanalyst is a person who practices one particular form of therapy: psychoanalysis. To call yourself a psychoanalyst, you must have specialized training from a psychoanalytic institute and undergo extensive psychoanalysis yourself. At one time, admission to a psychoanalytic institute required an MD or a PhD, but this is no longer true; clinical social workers with master's degrees, and even interested laypeople, are often now admitted.

- A psychiatrist is a medical doctor (MD) who has done a three-year residency in psychiatry to learn how to diagnose and treat mental disorders. Like some clinical psychologists, some psychiatrists do research on mental problems instead of, or in addition to, working with patients. In private practice, psychiatrists may treat any kind of emotional disorder; in hospitals, they treat the most severe disorders, such as major depression and schizophrenia. Although psychiatrists and clinical psychologists often do similar work, psychiatrists, because of their medical training, are more likely to focus on possible biological causes of mental disorders and to treat these problems with medication. Unlike psychiatrists, most clinical psychologists cannot write prescriptions at present. (In the United States, New Mexico and Louisiana have given prescription privileges to psychologists who receive special training.) Psychiatrists, however, are often uneducated in current psychological theories and methods and are unfamiliar with current research in psychology (Luhrmann, 2000).

Other mental health professionals include licensed clinical social workers (LCSWs) and marriage, family, and child counselors (MFCCs). These professionals ordinarily treat general problems in adjustment and family conflicts rather than severe mental disturbance, although their work may also bring them into contact with people who have serious problems—violent delinquents, people with drug addictions, sex offenders, individuals involved in domestic violence or child abuse. Licensing requirements vary from state to state but usually include a master’s degree in psychology or social work and one or two years of supervised experience. (For a summary of the various types of psychotherapists and the training they receive, see Review 1.4.) As if this weren’t complicated enough, thousands of people claim to be specialists in treating all kinds of problems, from sexual abuse to alcoholism; no uniform set of standards regulates their training. Some may have taken nothing more than a brief “certification” course.

Many research psychologists, and some practitioners, are worried about the increase in the number of counselors and psychotherapists who are unschooled in research methods and the empirical findings of psychology, and who use untested or ineffective therapy techniques (Baker, McFall, & Shoham, 2008; Lilienfeld, Lynn, & Lohr, 2003). Many therapists have been trained in freestanding professional schools that are unconnected to university psychology departments. Some of these schools offer a quality education, but others are designed to produce mental health professionals who may or may not know much about psychological research or its importance to sound clinical practice. These poorer quality programs are turning out increasing numbers of ill-prepared graduates (Peterson, 2003).
Many practitioners, for their part, argue that psychotherapy is an art and that training in research methods is largely irrelevant to the work they do with clients. In Chapter 16, we will discuss the differences in training and attitudes between scientists and many therapists. These differences contributed to the formation of the Association for Psychological Science (APS). The widening gap between scientists and practitioners, along with increased demands by insurers for evidence that psychotherapy is demonstrably effective, has motivated several prominent clinical psychologists to call for evidence-based treatment and collaboration between researchers and clinicians, in hopes of bridging the gap and improving patient care (Kazdin, 2008).

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Just as not all psychologists are psychotherapists, not all psychotherapists are clinical psychologists. Here are the major terms used to refer to mental health professionals:

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychotherapist</td>
<td>A person who does psychotherapy; may have anything from no degree to an advanced professional degree; the term is unregulated.</td>
</tr>
<tr>
<td>Clinical psychologist</td>
<td>Diagnoses, treats, and/or studies mental and emotional problems, both mild and severe; has a PhD, an EdD, or a PsyD.</td>
</tr>
<tr>
<td>Psychoanalyst</td>
<td>Practices psychoanalysis; has specific training in this approach after an advanced degree (usually, but not always, an MD or a PhD); may treat any kind of emotional disorder or pathology.</td>
</tr>
<tr>
<td>Psychiatrist</td>
<td>Does work similar to that of a clinical psychologist, but is likely to take a more biological approach; has a medical degree (MD) with a specialty in psychiatry.</td>
</tr>
<tr>
<td>Licensed clinical social worker (LCSW); marriage, family, and child counselor (MFCC)</td>
<td>Typically treats common individual and family problems, but may also deal with more serious problems such as addiction or abuse. Licensing requirements vary, but generally has at least an MA in psychology or social work.</td>
</tr>
</tbody>
</table>
Psychology has expanded so rapidly that the American Psychological Association now has 54 divisions. Some represent major fields such as developmental psychology or physiological psychology. Others represent specific research or professional interests, such as the psychology of women, the psychology of men, ethnic minority issues, sports, the arts, environmental concerns, gay and lesbian issues, peace, psychology and the law, and health.

Today, psychologists contribute to their communities in about as many areas as you can think of. They advise utility companies on ways to get customers to conserve energy. They consult with companies to improve worker satisfaction and productivity. They establish programs to improve race relations. They do basic and applied research on ways of reducing conflict, locally and internationally. They strive to understand and prevent acts of terrorism. They advise commissions on how pollution and noise affect mental health. They do rehabilitation training for people with physical or mental disabilities. They educate judges and juries about eyewitness testimony and false confessions. They assist the police in emergencies involving hostages or disturbed people. They conduct public opinion surveys. They run suicide-prevention hot lines. They advise zoos on the care and training of animals. They help coaches improve the athletic performance of their teams. And those are just for starters. Is it any wonder that people are a little fuzzy about what a psychologist is?

Quick Quiz

Can you match the specialties on the left with their defining credentials and approaches on the right?

1. psychotherapist   a. Trained in a therapeutic approach started by Freud
2. psychiatrist       b. Has a PhD, PsyD, or EdD, and does research on, or psychotherapy for, mental health problems
3. clinical psychologist c. May have any credential, or none
4. research psychologist  d. Has an advanced degree (usually a PhD) and does applied or basic research
5. psychoanalyst        e. Has an MD; tends to take a medical approach to mental health problems

Answers: 1. c 2. e 3. b 4. d 5. a
and problem solving. Social psychologists have taken an interest in the brain and have even developed a new specialty called “social-cognitive neuroscience.” Clinical scientists are examining the separate and combined effects of medication and psychotherapy in the treatment of psychological disorders. Behavioral geneticists are documenting the contributions of genetics to everything from the origins of personality to the origins of mental illness. Researchers who study almost any important phenomenon—aggression, anger, love, sexuality, child development, aging, prejudice, war—often now do so by combining psychological findings and biological ones. We will be covering much of their pioneering research throughout this book, and, in most chapters, the heading “Biology and . . .” will alert you to discussions of some exciting, cutting-edge findings that have resulted from these efforts.

The second major development is that psychologists are increasingly looking outward to culture as well as inward to biology (Ambady, 2011). They are documenting the many ways in which culture and ethnicity shape and influence much of what we do. Developmental psychologists are looking at culture’s impact on mental, social, and linguistic development. Cognitive psychologists are studying cultural influences on achievement, problem solving, and test performance. Social psychologists are looking at how a culture’s norms and history affect rates of aggression and cooperation, and even at how culture shapes the brain. Clinical researchers are exploring how the cultural backgrounds of therapists and clients affect the bond between them and the ultimate success of psychotherapy. Psychologists studying sensation are discovering how culture affects which tastes and smells delight or disgust us. Accordingly, throughout this book you will find a heading called “Culture and . . .,” which will alert you to some of the most exciting results from research incorporating this perspective.

The modern field of psychology is like a giant mosaic made up of many fragments, yielding a rich, multicolored, psychological portrait. Psychologists may argue about which part of the portrait is most important, but they also have much in common. All psychological scientists, whatever their specialty, believe in the importance of gathering empirical evidence instead of relying on hunches. And one thing will always unite psychologists: a fascination with the unending mysteries of human behavior and the human mind. If you too have wondered what makes people tick; if you love a mystery and want to know not only who did it but also why they did it; if you are willing to reconsider what you think you think . . . then you are in the right course.

We invite you now to step into the world of psychology, the discipline that dares to explore the most complex topic on earth: you.

Taking Psychology with You

The Nine Secrets of Learning

How do you study? If you are like most students, your favorite strategy is to read the textbook and your notes, and then read them again (Karpicke, Butler, & Roediger, 2009). You may think that reading and rereading is the best way to learn. It is not.
know, and testing yourself again and again until you learn the material. And even when you learn it, you need to keep testing yourself regularly over the semester so that what you’ve learned stays learned.

Okay, that’s two sentences, but these secrets are so important, we snuck in an extra one. Here, in more detail, are the secrets to learning and doing well in your courses.

What To Do Before Class

Your instructor has assigned you certain readings from this book and possibly other sources as well. How will you learn all of this information?

Secret #1: Use the 3R technique: Read, Recite, Review.

Let’s say you’re supposed to read this chapter by your next class. Use these three basic steps:

- Read a section of the chapter. Then close the book and hide your notes.
- Recite (speak aloud) everything you can remember about what you’ve just read. You don’t need fancy equipment. You can recite to yourself, to a friend, to your cat, or even to your coffee mug or a plant in your room.
- Review: the section by reading it again to correct anything you got wrong, or to revisit important information that you overlooked, when you recited.

In one study comparing the effectiveness of various study techniques, students in three groups read long, technical encyclopedia entries (McDaniel, Howard, & Einstein, 2009). One group used the 3R technique; a second read the articles twice and did nothing else; a third read the articles once but took notes while reading. A week later, everyone took the same test. The students who had used the 3R technique did much better on the test than students who used the other techniques. What’s more, it took students less time to use the 3R technique than reading and taking notes.

One reason that this method works so well is that when you practice the second R, you see immediately what you had trouble understanding, learning, and remembering, so you know what to concentrate on when you do the third R: review.

Secret #2: Dig deep.

You can’t read your textbook the same way you check your Facebook page, at a quick, superficial level. Many students assume that the mind is a bin or a sponge; you just pour in—

An excellent way to do this, as you read, is to try to connect the new information to information you already know. For instance, in this chapter, you read about the four basic perspectives of psychological science. Taking each one, you could think of examples you have read about or that apply to your own life: Many of my friends take medication to manage their depression or anxiety; that would follow from the biological perspective’s approach.

Secret #3: Use your imagination.

Students who visualize ideas remember them better than students who don’t. The key part of this technique is to make your images interact. Despite what you might read on all those “Train your brain!” websites, you don’t need to conjure up bizarre images; you just need to make those images interact (Wollen, Weber, & Lowry, 1972). So when you read in Chapter 4 that glia cells (from the Greek word for “glue”) play an important role in brain function by holding neurons in place, you could visualize squirting a big bottle of glue labeled “glia” under neurons.

Secret #4: Test yourself.

Suppose you’ve just read the material in the first section of this chapter, and it’s time for you to begin the recite phase. Start by trying to remember everything you can. Then look at the outline on the first page of the chapter and use it to jog your memory and remember even more. Check the terms in the margins, cover up their definitions, and try to define them in your own words. Jot down your answers, or speak them into your computer, tablet, or phone so you can play them back later. As you go along, make a note about anything you can’t remember, but don’t look up the answers yet. When you’re done, go back and see how well you knew the terms in the margins or answered the questions in the self-tests.

Now you’re ready to review. Go back to the beginning of your section in the chapter, and read again. Keep in mind the parts that tripped you up as you’re reading; when you finish, make sure you can answer the questions you couldn’t last time.

Throughout all of the following chapters, you will find self-tests called “Recite & Review,” which will help you apply the secrets of learning. Under “recite,” you will be prodded to speak your answers out loud. We have also added some more traditional quiz items and critical-thinking questions that we hope will be fun for you to think about and answer.

What To Do During Class

Secret #5: Keep your head up and your pen down.

A lecture is not like a DVD. For one thing, you can’t hit the pause button. For another thing, if you’re not giving the
lecture your full attention, you will miss something important and not even realize it. So when you’re in class, don’t talk to your friends, send text messages, or search the Web for pictures of adorable kittens doing adorable things.

It’s crucial that you take good notes in class. There’s a balance to note taking: On the one hand, you want your notes to be accurate and complete; on the other hand, you don’t want them to be a transcript, because then the really important things are hard to find. Elliot Aronson (2010), who became one of the greatest social psychologists in the field, wrote this about his first term in college: “I discovered that I had never learned how to be a student. I didn’t even know the first thing about taking notes. I would sit in class, listening to the lecture, scribbling furiously. By the time midsemester exams came around, I pulled out my lecture notes and found they were virtually unintelligible.”

While you’re listening to your instructor, think about how what you’re hearing is connected to what you already know. Write down key words and phrases, not full sentences and paragraphs the way a court reporter would. The act of sifting through what you’re hearing and distilling it into its important components will help make that information more meaningful.

You may be thinking that if instructors let you record their lectures or post their slides online, you don’t have to do any note taking. But recordings and slides won’t do your thinking for you, and they don’t have to take the exams, either.

**What To Do After Class**

**Secret #6: Process your notes.**

As soon as you can after class, do what Elliot Aronson (2010) did. Having done poorly on his midterms, thanks to his lousy note taking, he came up with a new strategy: “At the end of every class, I would find a little nook—sometimes even the nearest stairwell—read over my scribbled notes, and neatly summarize them in a page or two. At the end of the semester, when it was time to prepare for the final, my notes described the heart of the course. More than that: They revealed the scope and pattern of the professor’s thinking and the way the lectures dovetailed with the readings. I had taken the first step toward mastering the art of getting to the essence of a topic. . . . I found I was also learning to love to learn, and, perhaps most important, I was learning to think critically and challenge unsubstantiated assertions. For the first time in my life I understood what it was to be a student.”

That “aha!” experience can strike you too. When you review your notes, zero in on the information from class. If your notes are dotted with doodles, arrows and asterisks, missing definitions, and phrases that just don’t make sense, organize and rewrite them. Fill in the missing definitions or other information by consulting your textbook, your friends’ notes, or asking a teaching assistant or instructor. These activities are another way of testing yourself and filling the gaps in what you don’t know.

**Studying For Exams**

**Secret #7: Once you learn it, don’t drop it.**

You might be tempted to skip the parts of a chapter that you feel sure you know. Don’t do it. Instead, take advantage of a powerful research finding: Students who retest themselves by recalling information they could remember earlier do twice as well on an exam as students who skipped retesting themselves on familiar material (Karpicke & Roediger, 2007).

**Secret #8: Forget about cramming!**

Somewhere along the line, many students come to the conclusion that studying for exams means staying up all night, drinking coffee by the gallon, and rereading their textbook and notes so many times that their eyeballs bleed. Indeed, most students decide what to study next based on whatever is due next (or overdue). Few students make a study schedule ahead of time and then stick to it (Kornell & Bjork, 2007).

The problem with cramming is that it gives you a misplaced sense of confidence that you know the material. In fact, although you will probably remember some of it for a while, you won’t remember it for long. That’s because you have not taken the time to repeatedly organize the information in your memory, connect it to what you already know, and pave the new mental roads that will help you retrieve information later, as on the exam. That’s one of the reasons many students “blank out” when they actually take the test.

There is an alternative to those painful all-nighters. Rather than cramming all your attempts to test yourself into one giant awful block of time, test yourself regularly throughout the semester, say once a week (Bjork & Bjork, 2011), and be sure to include material you already know in your regular testing sessions. The secrets to doing well on a test tomorrow aren’t different from the secrets to doing well all semester.

**Secret #9: Forget about your “learning style.”**

If you’ve ever taken a test that tells you you’re a “visual” learner, does that mean you’ll have trouble taking in information in your lecture, especially compared to your classmates who have been told they are “auditory” learners? Happily, the answer is no. There is no evidence that people learn better when the method matches their preferences, and no evidence
In this course, you’ll satisfy your curiosity about human nature, gain insights into political and social issues, and learn techniques that you can use to gain control over your emotions, improve your memory, and reduce unwanted habits. We hope you will enjoy and remember what you read. But ultimately, a tenth secret of learning is this: No matter how good they are, no course and no textbook can do your work for you.

that using methods that don’t match their preferences are ineffective (Pashler et al., 2008). Visualizing material helps everybody, and so does plain old active listening. In fact, learning-style tests do not seem to do much of anything except make the companies that own them a lot of money. The nine secrets to learning work equally well for all kinds of students. This means you.

Summary

Psychology, Pseudoscience, and Popular Opinion

- Psychology is the discipline concerned with behavior and mental processes and how they are affected by an organism’s external and internal environment. Psychology’s methods and reliance on empirical evidence distinguish it from pseudoscience and “psychobabble.” An introductory psychology course can correct many misconceptions about human behavior.

- Psychologists have many pseudoscientific competitors, such as astrologers and psychics. But when put to the test, the claims and predictions of these competitors turn out to be meaningless or just plain wrong. Psychobabble is appealing because it confirms our beliefs and prejudices; in contrast, psychology often challenges them.

Thinking Critically and Creatively about Psychology

- One benefit of studying psychology is the development of critical-thinking skills and attitudes. Critical thinking helps people evaluate competing findings on psychological issues that are personally and socially important.

- Critical thinkers ask questions, define terms clearly, examine the evidence, analyze assumptions and biases, avoid emotional reasoning, avoid oversimplification, consider alternative interpretations, and tolerate uncertainty. Critical thinking is an evolving process rather than a once-and-for-all accomplishment.

Psychology’s Past: From the Armchair to the Laboratory

- Psychology’s forerunners made some valid observations and had useful insights, but without rigorous empirical methods, they also made serious errors in the description and explanation of behavior, as in the case of phrenology.

- The official founder of scientific psychology was Wilhelm Wundt, who formally established the first psychological laboratory in 1879, in Leipzig, Germany. His work led to structuralism, the first of many approaches to the field. Structuralism emphasized the analysis of immediate experience into basic elements. It was soon abandoned, in part because of its reliance on introspection.

- Another early approach, functionalism, was inspired in part by the evolutionary theories of Charles Darwin; it emphasized the purpose of behavior. One of its leading proponents was William James. Functionalism, too, did not last long as a distinct school of psychology, but it greatly affected the course of psychological science.

- Psychology as a method of psychotherapy has roots in Sigmund Freud’s theory of psychoanalysis, which emphasizes unconscious causes of mental and emotional problems.

Psychology’s Present: The Four Perspectives of Psychological Science

- Four points of view predominate today in psychological science. The biological perspective emphasizes bodily events associated with actions, thoughts, and feelings, as well as genetic contributions to behavior. Within this perspective, a popular specialty, evolutionary psychology, is following in the footsteps of functionalism. The learning perspective emphasizes how the environment and a person’s history affect behavior; within this perspective, behaviorists reject mentalistic explanations and social-cognitive learning theorists combine elements of behaviorism with the study of thoughts, values, and intentions. The cognitive perspective emphasizes mental processes in perception, problem solving, belief
formation, and other human activities. The *sociocultural perspective* explores how social contexts and cultural rules affect an individual’s beliefs and behavior.

- **Feminist psychology** has influenced the questions researchers ask, the methods they use, and their awareness of sexist biases in the field. As members of minority groups entered psychology, they too raised awareness of issues specific to different groups by virtue of their ethnicity, culture, and sexual orientation. The result has been to make psychology more representative of all human beings.

### What Psychologists Do

- Psychologists do research and teach in colleges and universities, provide mental health services (*psychological practice*), and conduct research and apply findings in a wide variety of nonacademic settings. *Applied psychology* is concerned with the practical uses of psychological knowledge. *Basic psychology* is concerned with knowledge for its own sake. Among the many psychological specialties are experimental, educational, developmental, *industrial/organizational*, psychometric, counseling, school, and clinical psychology.

- **Psychotherapist** is an unregulated term for anyone who does therapy, including people who have no credentials or training at all. Licensed therapists differ according to their training and approach. *Clinical psychologists* have a PhD, an EdD, or a PsyD; *psychiatrists* have an MD; *psychoanalysts* are trained in psychoanalytic institutes; and licensed clinical social workers (LCSWs) and marriage, family, and child counselors (MFCCs) may have various postgraduate degrees. Many psychologists are concerned about an increase in the number of poorly trained psychotherapists who lack credentials and a firm understanding of research methods and findings.

### Biology, Culture, and Psychology

- Many, if not most, psychologists draw on more than one school of psychology. Indeed, many psychological scientists are crossing the borders that have traditionally divided one specialty from another, a trend encouraged by increased interest in biological and cultural influences on behavior.

- Although psychologists differ in their perspectives and goals, psychological scientists, whatever their specialty, agree on the importance of using empirical methods, and all are united by their fascination with the mysteries of behavior.

### Taking Psychology with You

- The “secrets of learning” are these: Use the 3R method (read, recite, review); process the information deeply by connecting it to what you already know; use your imagination to link visual images of the new material in vivid ways; test yourself repeatedly, including on material you assume you already understand; take good notes in class and review and revise them immediately afterward; don’t cram; and don’t worry about your “learning style.” There is no evidence that people learn better when a study method matches their supposed visual or auditory preference; visualizing material helps everybody, and so does plain old active listening.

### Key Terms

As “The Nine Secrets of Learning” advises, the best way to be sure that you understand the terms, names, and concepts in each chapter is to recite out loud what you can remember about each of them. In subsequent chapters, self-tests called “Recite and Review” will help you acquire these skills. Each chapter will also conclude with a list of terms and people you should know. If you have trouble with a term or name, you can find it on the page listed.

- **psychology** 4
- “psychobabble” 5
- **empirical** 5
- **critical thinking** 6
- Occam’s razor 13
- *phrenology* 15
- Wilhelm Wundt 16
- *structuralism* 16
- **functionalism** 16
- William James 17
- Charles Darwin 17
- Sigmund Freud 17
- psychoanalysis 18
- **biological perspective** 19
- evolutionary psychology 19
- learning perspective 19
- behaviorists 19
- social-cognitive learning theorists 19
- cognitive perspective 19
- sociocultural perspective 20
- cultural psychologists 20
- feminist psychology 21
- psychological practice 22
- basic psychology 22
- applied psychology 22
- experimental psychologist 23
- educational psychologist 23
- developmental psychologist 23
- industrial/organizational psychologist 23
- psychometric psychologist 23
- counseling psychologist 23
- school psychologist 23
- clinical psychologist 23
- psychotherapist 24
- psychoanalyst 24
- psychiatrist 24