FOCUS ON VOCABULARY AND LANGUAGE

. . . to remedy their own woes, millions turn to *"psychology."* To alleviate or fix *(remedy)* their misery, anxiety, grief, pain, and suffering *(woes)*, people seek help from *"psychology."* (*Psychology* is in quotes because Myers wants to point out that not everything you think of as *"psychology"* is part of *scientific* psychology.)

The Need for Psychological Science

Some people suppose that psychology merely *documents and dresses in jargon* what people already know . . . Some people criticize psychology, saying that it simply reports *(documents)* common sense, or what's obvious to everyone. Critics suggest that, instead of stating something plainly, psychology translates information into the specialized and obscure vocabulary of the discipline *(it dresses it in jargon)*. Myers makes it very clear with some good examples that this criticism is not justified and points out that our intuitions about reality can often be very mistaken.

Like jumbo jets, we fly mostly on autopilot. Many of our cognitive processes—including large parts of our thinking, memory, and attitudes—are a function of the unconscious intuitive mind, which operates without our awareness *(it operates automatically, off-screen)*. In this sense, we are much like large, modern jet planes *(jumbo jets)* that are flown by computerized, mechanical, electronic pilots (they *fly on autopilot*).

Did We Know It All Along? Hindsight Bias

Consider how easy it is to draw the *bull's eye after the arrow strikes*. In the sport of archery, the task is to shoot the arrow at the red circle in the center of the target *(the bull's eye)*. If we first shoot an arrow, then draw the target so that the arrow is in the center (in the *bull's eye*), we can appear to be very accurate. Myers uses this analogy to illustrate how the **hindsight bias** (or the *I-knew-it all-along phenomenon*) can lead us to believe that we are clever and would have been able to predict outcomes that we have learned after-the-fact.

"Out of sight, out of mind" and *"Absence makes the heart grow fonder."* These two sayings, or expressions, about romantic love have opposite meanings. The first one suggests that when couples are apart *(out of sight)* they are less likely to think about each other *(out of mind)* than when they are together. The second saying makes the point that being separated *(absence)* increases the feelings of love the couple shares *(makes the heart grow fonder)*. People who are told that the results of a study support the first expression *("out of sight, out of mind")* see this as mere common sense. People told that the results support the second expression *("absence makes the heart grow fonder")* also say this is obviously true. There is clearly a problem here; relying on common sense can lead to opposite conclusions.

. . . that *familiarity breeds contempt* . . . This expression and others are based on many casual observations but are often wrong. For example, is it true that the better you know someone (your *familiarity* with him), the more likely it is that you will dislike the person *(have contempt* for him*)*? In fact, research shows that the opposite is probably true. (Your text, again and again, will emphasize the fact that our common sense and intuition do not always provide us with reliable evidence.)

Perceiving Order in Random Events

. . . *"cold hand"* . . . *"hot hand"* . . . In this context, "hot" and "cold" do not refer to temperature. Here, being *hot* (or having a *"hot hand"*) means doing well, and doing well consistently is having a *hot streak*. Having a run of poor luck is a *cold streak*. The crucial point, however, is that our intuition about sequences of events (*streaks* or streaky patterns) often deceives us. True random sequences often are not what we think they should be and, thus, they do not appear to be random. When we think we're doing well (having a *"hot hand"*), we are merely noting or *overinterpreting* certain sequences *(streaks)* found in any random data.

Did I *snap out of my tails funk* and *get in a heads groove*? David Myers tossed *(flipped)* a coin 51 times. The results showed several sequences *(streaks)* that did not appear to be random (for example, a series of tails followed by a series of heads). He asks whether this was due to his paranormal control of the coin, which ended the series of tails *(he snapped out of his tails funk)* and produced a new series of all heads *(he got into a heads groove)*. This type of explanation is not necessary, because these types of sequences *(streaks)* exist in any random sequence. As Myers notes, the outcome of any particular toss does not predict or influence the result of the next toss.

But scientific inquiry can help us *sift reality from illusion*. Literally, to *sift* means to separate finer particles from coarser ones by passing them through a sieve. Myers uses the word *sift* to explain how a scientific approach can separate *(sift)* what is true and factual *(reality)* from what is not true (*illusion* or *fantasy*). He also shows how it can take us beyond the constraints *(limits)* of our beliefs, experience, intuition, and common sense. (Be sure you understand what the word *sift* means because Myers uses it quite often.)

The Scientific Attitude: Curious, Skeptical, and Humble

Underlying all science is, first, a *hard-headed curiosity* . . . Here, *hard-headed* means to be practical, uncompromising, realistic, or unswayed by sentiment. All science, including psychology, is guided by this realistic desire to know *(curiosity)* about nature and life.

. . . *leap of faith*. This is a belief in something in the absence of demonstrated proof. Some questions—about the existence of God or life after death, for example—cannot be answered by science and cannot be scientifically proved or disproved; if a person believes, then it is on the basis of trust and confidence alone (a *leap of faith*).

. . . *the proof is in the pudding*. This comes from the expression *"the proof of the pudding is in the eating."* A *pudding* is a sweet dessert. We can test *(prove)* the quality of the dessert (*pudding*) by trying it (*eating* it). Likewise, many questions, even if they appear to make little sense *(crazy-sounding ideas)*, can be tested using the scientific method.

. . . *auras* . . . An *aura* is a bright glow surrounding a figure or an object. Some people believe that humans have *auras* that can only be seen by those with extrasensory abilities. The magician James Randi proposed a simple test of this claim, but nobody who is alleged to have this magical power (an *aura-seer*) has taken the test.

More often, science becomes society's garbage disposal, sending *crazy-sounding ideas* to the *waste heap* . . . The use of scientific inquiry can get rid of (dispose of) non-sensible concepts *(crazy-sounding ideas)* and add them to the long list of other ridiculous claims (for example, perpetual motion machines or miracle cancer cures) in much the same way that discarded materials, junk, and other rubbish are disposed of in a garbage dump (a *waste heap*). As Myers notes, we need a

scientific attitude to separate *(sift)* truth *(reality)* from false assertions. That means doubting and questioning *(being skeptical)* but not scornful or mocking *(cynical)*, and to be accepting of novelty and change *(open)* without being naïve *(gullible)*.

. . . *then so much the worse for our ideas*. This means that we have to give up, or get rid of, our ideas if they are shown to be wrong *(so much the worse for them)*. We have to be *humble* (that is, we have to have *humility*).

"The rat is always right." This early *motto* (a phrase used as a guiding principle) comes from the fact that, for most of the first half of the twentieth century, psychology used animals in its research (especially in the study of learning). The rat became a symbol of this research, and its behavior or performance in **experiments** demonstrated the truth. If the truth, as shown by the rat, is contrary to the prediction or **hypothesis**, then one has to be humble and try another way *(the rat is always right)*.

Critical Thinking

. . . *gut feelings* . . . This refers to basic intuitive reactions or responses. **Critical thinking** requires determining whether a conclusion is based simply on a subjective opinion (a *gut feeling*),, on a story someone tells (an *anecdote*), or on reliable scientific evidence.

Critical thinking, informed by science, helps *clear the colored lenses of our biases*. What we already believe (our *preconceived ideas*) influences *(colors)*, and to some extent determines, what we look for and actually see (or discover) in nature. It's as though the type of eyeglasses we wear (our *colored lenses*) distorts or biases what we can see. But the use of critical thinking, based on scientific findings, can help overcome this tendency *(it helps clear the colored lenses of our biases)*.

. . . *debunked* . . . This means to remove glamour or credibility from established ideas, persons, and traditions. Myers points out that scientific evidence and critical inquiry have indeed discredited *(de-bunked)* many popular presumptions.

. . . one *cannot* simply *"hit the replay button"* and relive long-buried or *repressed* memories . . . This is an example of a discredited *(debunked)* idea that hidden *(repressed)* memories can be accurately and reliably brought back intact and complete in the same way that pressing "rewind" and "play" *("hitting the replay button")* allows us to watch exactly the same show over and over again on a DVD or Blu-ray player.

How Do Psychologists Ask and Answer Questions?

. . . psychological science welcomes *hunches* and plausible-sounding theories. In popular usage, a *hunch* is an intuitive feeling about a situation or event. Psychology can use subjective ideas to help formulate hypotheses or predictions, which can then be tested empirically or scientifically.

Description

Numbers can be numbing, but the plural of anecdote is not evidence. We are often overwhelmed and our senses deadened *(numbed)* by the sometimes inappropriate use of statistics and numbers. Although stories by and about individuals *(anecdotes)* can generate productive lines of inquiry *(fruitful ideas)*, they do not constitute reliable empirical facts no matter how numerous they are *(the plural of anecdote is not evidence)*.

As psychologist Gordon Allport (1954, p. 9) said, "Given *a thimbleful* of [dramatic] facts we rush to make *generalizations as large as a tub*." A *thimble* is a small metal container that fits over the top of the thumb or finger. It is used while sewing to push the needle through the material. A *tub* is a very large container (for example, a bathtub). Allport is saying that, given a small amount of information *(a thimbleful)*, we tend to make very big assumptions *(generalizations as large as a tub)*.

. . . *eavesdrop on* . . . In a study using **naturalistic observation**, researchers asked 52 students to attach small recording devices called EARs (Electronically Activated Recorders) to their belts. For up to four days, every 12.5 minutes the researchers secretly recorded *(eavesdropped on)* 30-second segments of the students' waking hours *(half-minute life slices)*. They found that students were talking with someone 28 percent of the time and at a computer keyboard 9 percent of the time. Naturalistic studies, such as this one, can describe behavior—but they do not explain it.

Using only *1500 randomly sampled people*, *drawn* from all areas of a country, they can provide a remarkably accurate *snapshot* of the nation's opinions. A *snapshot* is a picture taken with a camera, and it captures what people are doing at a given moment in time. A good **survey** that involves 1500 randomly selected ***(randomly sampled)*** representative people, selected (*drawn*) from all areas of a country, gives an accurate picture *(snapshot)* of the opinions of the whole **population** of interest.

Correlation

Statistics can help us see what the *naked eye* sometimes misses. When looking at an array of data consisting of different measures for many subjects (for example, height and temperament), it is very difficult to detect what, if any, relationships exist. Statistical tools, such as the **correlation coefficient** and the **scatterplot**, can help us see clearly what the unaided eye (the *naked eye*) might not see. As Myers notes, *to see what is in front of us, we sometimes need statistical illumination*.

Experimentation

Let's *Recap*. *Recap* is an abbreviation of *recapitulate*, which means to repeat or go over briefly, to summarize. Myers summarizes *(recaps)* the important points in each section of the chapter.

Statistical Reasoning in Everyday Life

Off-the-top-of-the-head estimates often misread reality and then mislead the public. Without knowing actual data and numbers *(statistics)*, people may guess at figures (they make *off-the-top-of-the-head estimates*). These guesses do not represent the true nature of things (they *misread reality*) and consequently can deceive *(mislead)* the public. Figures generated in this manner are often easy to articulate, such as 10 percent or 50 percent *(big round numbers)*. When repeated *(echoed)* by others, they may eventually be believed to be true by most people *(they become public misinformation)*. Rather than naïvely accepting easy-to-remember, but inaccurate, figures *(big, round, undocumented numbers)*, be *skeptical* and apply straightforward statistical principles and *critical thinking* skills.

Describing Data

Because the bottom *half* of British income earners receive only a *quarter* of the *national income cake*, most British people, like most people everywhere, make less than the mean. Incomes are not *normally distributed* (that is, they do not follow a bell-shaped curve, or **normal curve**). So, a better *measure of central tendency* than the **mean** (arithmetic average) is either the **median** (the score in

the middle) or the **mode** (the most frequently occurring score). In Myers' example, half the people account for 25 percent of all the money earned in the country (the *national income cake*); therefore, in this uneven *(skewed)* distribution, most people earn below-average wages.

It [standard deviation] better *gauges* whether scores are packed together or *dispersed*, because it uses information from each score. The most commonly used statistic for measuring *(gauging)* how much scores differ from one another (their *variation*) is the **standard deviation**. Using the formula for *standard deviation* (see Appendix B), each score is compared to the *mean*; the result is an index of how the scores are spread out *(dispersed)*. A relatively small standard deviation indicates that most of the scores are close to the average; a relatively large standard deviation indicates that they are much more *variable*.

Significant Differences

Data are *"noisy."* Differences between groups may simply be due to random *(chance)* variations *(fluctuations)* in those particular samples. When data have a great deal of variability, they are said to be *"noisy,"* which may limit our ability to generalize from them to the larger population. To determine if differences are *reliable*, we should be sure that (a) samples are random and representative, (b) scores in the sample are similar to each other (have low *variability*), and (c) a large number of subjects or observations are included. If these principles are followed, we can confidently make inferences about the differences between groups.

Frequently Asked Questions About Psychology

. . . *plunge in* . . . In this context, *plunge in* means to move ahead quickly with the discussion. (Similarly, when you dive into a swimming pool *[plunge in]*, you do so quickly.) Before going on with the discussion of psychology (before *plunging in*), Myers addresses some important issues and questions.

Moreover, most universities now have an *ethics committee* that *screens* research proposals and safeguards participants' well-being. *Ethics committees* (groups of people concerned with moral behavior and acceptable standards of conduct) subject research proposals to rigorous tests (they *screen them*) to ensure that the tests are fair and reasonable and that they do not harm the participants' well-being.

Values can also color "the facts." Our *values* (what we believe is right and true) can influence *(color)* our observations, interpretations, and conclusions *("the facts")*.