

FOCUS ON VOCABULARY AND LANGUAGE

Page 405: Three huge controversies have *sparked* recent *debate* in and beyond psychology. The topic of **intelligence** (along with gender differences and the nature of repressed, recovered, and false memories) has provoked emotionally charged discussions (*sparked debate*) not only within psychology but in the larger community as well.

Page 405: It will also remind you that there are a variety of *mental gifts* and that *the recipe for high achievement* in any field blends *talent* and *grit*. This chapter attempts to answer questions such as: What is intelligence? How is it assessed? Where does it come from? and so on. The chapter also notes that there are many cognitive aptitudes (*mental gifts*) and that the formula for excellence (*the recipe for high achievement*) in any endeavor combines hard work (*grit*) with natural endowments (*talent*).

What Is Intelligence?

Page 406: You may also know a talented artist who is *dumbfounded* by the simplest mathematical problems . . . Researchers have used a statistical approach (**factor analysis**) to identify groups of test items that measure a common ability. So, someone who has a group, or cluster, of abilities in one area may be very puzzled by and completely unable to solve (*dumbfounded by*) a relatively simple problem in a different area. Spearman argued that there was a common factor (**general intelligence**, or *g*) underlying particular abilities.

Page 407: And consider people with **savant syndrome**, who often score low on **intelligence tests** but have an *island of brilliance*. Some people are developmentally disabled in almost every aspect of their lives, with the exception of one very specific ability (an *island of brilliance*) in which they are extraordinarily gifted. Despite having very poor language skills and other cognitive dysfunctions, they may be capable of outstanding performance in computation, memory for music heard only once, drawing, etc. (**savant syndrome**). Some psychologists argue that this is evidence for the notion of multiple intelligences.

Page 408: . . . *the street-smart* adolescent who becomes a *crafty* executive . . . Myers is attempting to simplify Howard Gardner's eight intelligences. As an example of one of these intelligences, he describes the adolescent who has the ability to survive in urban environments (he is *street smart*) and uses that ability to become a clever (*crafty*) executive.

Page 409: . . . *reading people* . . . People who have good *practical managerial intelligence* may not score high on academic ability but will be good at motivating people; assigning work to others appropriately; and knowing and understanding peoples' needs, desires, and ambitions (they are good at *reading people*). Other people may demonstrate different types of intelligence (for example, academic, creative, or **emotional intelligence**).

Pages 409–410: The two theorists also agree that the differing *varieties of giftedness* add *spice to life* and challenges for education. The expression "variety adds spice to life" suggests that having many different experiences tends to make life more interesting (*adds spice to life*). The fact that people differ in their talents and gifts (have *varieties of giftedness*) not only makes life more interesting but also poses opportunities for teachers to capitalize on the variety of abilities that students possess and to apply multiple intelligences in the classroom.

Page 410: . . . *out of the blue* . . . The solution to a very complex problem can occur to a person unexpectedly and suddenly (*out of the blue*). This happened to Andrew Wiles when he eventually solved Fermat's last theorem after thinking hard and long (*pondering*) about the problem for over 30 years. This example illustrates **creativity**—the ability to produce novel and valuable ideas.

Page 412: Even Wiles *stood on the shoulders of others* and *wrestled* his problem with the collaboration of a former student. Don't take this literally. Wiles made use of the knowledge

and wisdom of colleagues and a former student (*he stood on the shoulders of others*) when he was working hard and struggling to find the solution to Fermat's theorem (*when he wrestled with the problem*).

Page 413: Using today's neuroscience tools, might we link differences in people's intelligence test performance to dissimilarities in *the heart of smarts*—the brain? Reported differences in the brains of geniuses, such as the brains of Lord Byron, Beethoven, and Einstein, have led neuroscientists to wonder if people with different IQ scores might differ in the central organ of intelligence (*the heart of smarts*)—the brain. Would people with large cranial capacity be more intelligent than normal (*Do people with big brains have big smarts*)? This section of the chapter examines research about this issue.

Page 414 . . . quick-witted . . . This means being able to rapidly assess a situation or problem and respond appropriately without delay. (*Dim-witted* means to be slow and unintelligent.) Research shows that there is a positive correlation between intelligence-test scores and the speed demonstrated on a number of perceptual and neurological tests.

Page 415: The neurological approach to understanding intelligence (and so many other things in psychology) is currently *in its heyday*. Today, neurological psychology is enjoying unprecedented prosperity and growth (*is in its heyday*), and neurological psychologists are vigorously researching many areas in psychology, including intelligence. Myers wonders if we will ultimately be able to describe and explain *general intelligence* (*g factor*) in pure biological terms, or if we are simply clinging obstinately to mistaken or inaccurate notions (*are we wrongheaded*). Perhaps intelligence is not a single trait but a combination of multiple abilities. The intense debate about what intelligence really is still continues.

Assessing Intelligence

Page 416: As *heirs to* Plato's individualism, people in Western societies have *pondered* how and why individuals differ in mental ability. Western culture has inherited Plato's individualism. Thus, we are the recipients of (*heirs to*) his ideas regarding the origins of individual differences. We think carefully and deeply about (*ponder*) how and why these differences occur. The scientific attempt to investigate this phenomenon began seriously (*in earnest*) more than a century ago.

Page 416: On tests, therefore, a "*dull*" child should perform as does a typical younger child, and a "*bright*" child as does a typical older child. Children develop intellectually at different rates, so Binet and Simon developed the concept of **mental age**. Children who performed below the average level of other children the same age (e.g., a 10-year-old who performed the same as the average 8-year-old) would be considered slow in development ("*dull*"). Those who performed above the average (e.g., a 10-year-old who scored the same as the average 12-year-old) would be considered developmentally advanced or precocious ("*bright*").

Page 416: To raise the capacities of low-scoring children, he recommended "*mental orthopedics*" that would train them to develop their attention span and self-discipline. Binet did not believe that intellectual capacity was wholly genetic. Rather, he believed that intellectual capacity could be improved with remedial work. Once children who were likely to have problems in school were identified, he suggested the use of "*mental orthopedics*." (*Orthopedics* is concerned with the prevention and cure of physical deformities of bones, joints, and muscles, especially in children; "*mental orthopedics*" would apply the same principles to the mind.)

Page 417: In sympathy with *eugenics* . . . Terman (1916, pp. 91–92) envisioned that the use of intelligence tests would "*ultimately result in curtailing the reproduction of feeble-mindedness and in the elimination of an enormous amount of crime, pauperism, and industrial inefficiency*" (p. 7). Terman's belief that mental capacity was inherited and that only the smartest should be allowed to procreate (*eugenics*) led him to speculate that the use of intelligence tests could result in reducing the number of children who are born with low intelligence (*curtailing the*

reproduction of feeble-mindedness). He also believed that the widespread use of intelligence tests would get rid of, or reduce, crime, poverty (*pauperism*), and low worker productivity (*industrial inefficiency*).

Page 418: Actually, the differences between *achievement* and *aptitude* tests are not so *clear-cut*. Some tests measure your present ability and knowledge (*achievement*), as well as predict your future capacity to learn and develop (*aptitude*). Because what you know influences what you can learn in the future, and what you are capable of learning is related to what you already know, there is no definite (*clear-cut*) distinction between achievement and aptitude tests. It is a practical matter; a test can be used either to predict future progress or to measure your present ability and skill.

Page 419: . . . people's scores tend to form this *roughly symmetrical shape*. Many variables that we measure (weight, height, intelligence, etc.) approximate a bell-shaped curve (a *roughly symmetrical shape*) when plotted on a frequency distribution. On intelligence tests, the average score is 100; most scores (68%) are between 85 and 115, so they are gathered close together (*clustered*) near the average score.

Page 421: If you use an *inaccurate tape measure* to measure people's heights, your height report would have high *reliability* (consistency) but low *validity*. In order for a test to be *reliable*, the instrument should have consistent results over numerous tests. So, if you use a ruler (a *tape measure*) that is not precise (is *inaccurate*), it will meet the *reliability* criterion because it will always give you the same result; it will not, however, have *validity*. To be *valid* it should *accurately* measure what it is supposed to measure.

The Dynamics of Intelligence

Page 423: Developmental researchers *have left few stones unturned* in their search for indicators of infants' later intelligence. Can we predict later intelligence level by observing the behavior of infants and very young children? Researchers have examined every possible variable (*they have left few stones unturned*) for accurate predictors. One test, which provides a rough (*crude*) indicator of later intelligence, involves observing how quickly children habituate to (*grow bored with*) looking at a previously seen picture compared to a new one.

Page 425: During the last two centuries, *the pendulum of opinion* about how best to care for Americans with **mental retardation** *has made a complete swing*. Over time and in different ways we have taken care of the mentally retarded—first at home, then in small residential schools, then in massive institutions (*warehouses* for people), and now back to a more normal situation in which they are integrated (*mainstreamed*) into regular classrooms. Our views about how people with mental retardation should be looked after have moved from one extreme to the other (*the pendulum of opinion . . . has made a complete swing*).

Genetic and Environmental Influences on Intelligence

Page 427: This could lead to *those on top* believing their *intellectual birthright* justifies their *social positions*. If intellectual abilities are predominately a result of genetics and contribute to socioeconomic status (SES), then those who are most successful (*those who are on top*) may assume that their inherited intelligence (*intellectual birthright*) gives them a right to their social standing (*justifies their social positions*). The issue of whether nature or nurture determines intelligence generates intense feelings (*arouses passions*) and has important political ramifications.

Page 430: Extreme deprivation was *bludgeoning native intelligence*. In this investigation of a destitute orphanage, Hunt (1982) found that the effect of extreme neglect was severe depression and a general mental and physical passivity (the children became "*glum lumps*"). Their inborn (*native*) intellectual capacity was taking a severe beating (a *bludgeoning*) due to the physical and emotional neglect. As Myers notes, severe life experiences do leave

“footprints on the brain”; that is, they can affect brain development and subsequent cognitive ability. Hunt’s intervention program had dramatic results. This points to the strong influence of environment.

Page 431: Similarly, in the psychological domain, gender similarities *vastly outnumber* gender differences. Males and females are alike in many more ways than they are different. Although the similarities overwhelm (*vastly outnumber*) the dissimilarities, we are more intrigued by the dissimilarities. We pay more attention to gender differences (*they excite interest*), and they are more likely to be reported by the media (*we find them more newsworthy*).

Page 432: Females *have an edge* in remembering and locating objects. Females do better than males on certain tests (*they have an edge*). For example, females are better at spelling, verbal fluency, and remembering words and picture associations. In addition, they are more sensitive to touch, taste, and odor, and they are better at detecting emotions. Males do better on tests of spatial ability (*they have an edge*) compared with females.

Page 433: The score differences are *sharpest* at the *extremes*. Although variation in ability is greater *within* the two groups, people tend to focus on the *between*-group male-female differences. The differences in scores between males and females on the SAT test are more noticeable (*sharpest*) at the high and low ends of the distribution (the *extremes*) than in the middle. Thus, among the very highest scorers in math, the majority is likely to be male.

Page 433: Yet, notes Diane Halpern (2005) *with a twinkle in her eye*, “no one has asked if men have the innate ability to succeed in those academic disciplines *where they are underrepresented*.” To say something “*with a twinkle in your eye*” implies that you are saying it with good humor. Gender-equal cultures do not show typical male-female differences in math ability (*gender math gap*), suggesting that social expectations and different opportunities shape boys’ and girls’ interests and abilities. Diane Halpern notes with good humor (*with a twinkle in her eye*) that no one has suggested investigating if men have the innate ability to do well in those areas where they are traditionally in the minority (*where they are underrepresented*).