

Module 50 Review

50-1 How do early experiences modify the brain?

- As a child's brain develops, neural connections grow more numerous and complex. Experiences then trigger a pruning process, in which unused connections weaken and heavily used ones strengthen.
- Early childhood is an important period for shaping the brain, but throughout our lives our brain modifies itself in response to our learning.

50-2 In what ways do parents and peers shape children's development?

- Parents influence their children in areas such as manners and political and religious beliefs, but not in other areas, such as personality.
- As children attempt to fit in with their peers, they tend to adopt their culture—styles, accents, slang, attitudes.
- By choosing their children's neighborhoods and schools, parents exert some influence over peer group culture.

Multiple-Choice Questions

1. According to Plomin and Daniels, "Two children in the same family are [apart from their shared genes] as different from _____ as are pairs of children selected randomly from the population."
 - a. their parents
 - b. their grandparents
 - c. their friends
 - d. one another
 - e. their cousins
2. Compared with rats raised in an enriched environment, which of the following is true of rats raised in isolation?
 - a. Their brain cortex is less developed.
 - b. Though neurologically similar, they fear other rats.
 - c. Their brains have more connections.
 - d. They have a thicker brain cortex.
 - e. The differences between the two groups are not statistically significant.
3. What is the *primary* means by which parents influence the behavior of their children?
 - a. Parenting style
 - b. Genetic contributions
 - c. Prenatal environment
 - d. Teaching cooperation
 - e. Rewarding achievement
4. Neurologically, what is the function of pruning?
 - a. Pruning creates new connections between synapses through repeated experiences.
 - b. Pruning reduces the negative effects of teratogens by eliminating neural waste.
 - c. Pruning increases the weight of the brain through enriching experiences.
 - d. Pruning creates areas in the brain used in learning mathematics.
 - e. Pruning eliminates unused neural pathways.

Practice FRQs

1. Compare and contrast the influence parents and peers have on a child's development, giving one example for each.
2. Provide two examples of how children seek to fit in with their groups and are influenced by them.
(2 points)

Answer

2 points: Parents influence a child's (1) quality of life, (2) attachments and beliefs, (3) exposure to peer culture via neighborhood and schools.

2 points: Peers influence a child's (1) tastes and styles, (2) accents and slang, and (3) substance use.

Module 51

Adolescence: Physical and Cognitive Development

Module Learning Objectives

- 51-1** Define *adolescence*, and identify the major physical changes during this period.
 - 51-2** Describe adolescent cognitive and moral development, according to Piaget, Kohlberg, and later researchers.
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- 51-1** How is *adolescence* defined, and what physical changes mark this period?

Many psychologists once believed that childhood sets our traits. Today's developmental psychologists see development as lifelong. As this *life-span perspective* emerged, psychologists began to look at how maturation and experience shape us not only in infancy and childhood, but also in adolescence and beyond. Your story is still being written. **Adolescence**—the years spent morphing from child to adult—starts with the physical beginnings of sexual maturity and ends with the social achievement of independent adult status. In some cultures, where teens are self-supporting, this means that adolescence hardly exists.

G. Stanley Hall (1904), one of the first psychologists to describe adolescence, believed that the tension between biological maturity and social dependence creates a period of "storm and stress." Indeed, after age 30, many who grew up in independence-fostering Western cultures look back on their teenage years as a time they would not want to relive, a time when their peers' social approval was imperative, their sense of direction in life was in flux, and their feeling of alienation from their parents was deepest (Arnett, 1999; Macfarlane, 1964).

But for many, adolescence is a time of vitality without the cares of adulthood, a time of rewarding friendships, heightened idealism, and a growing sense of life's exciting possibilities.

Physical Development

Adolescence begins with *puberty*, the time when we mature sexually. Puberty follows a surge of hormones, which may intensify moods and which trigger a series of bodily changes, described in Module 53.

Just as in the earlier life stages, the *sequence* of physical changes in puberty (for example, breast buds and visible pubic hair before *menarche*—the first menstrual period) is far more predictable than their *timing*. Some girls start their growth spurt at 9, some boys as late as age 16. Though such variations have little effect on height at maturity, they may have psychological consequences: It is not only when we mature that counts, but how people react to our physical development.

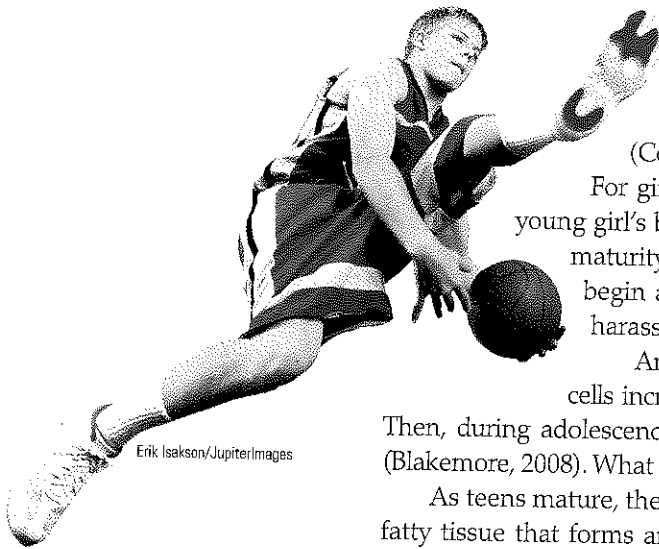
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adolescence the transition period from childhood to adulthood, extending from puberty to independence.

Try This

How will you look back on your life 10 years from now? Are you making choices that someday you will recollect with satisfaction?



Erik Isakson/Jupiterimages

For boys, early maturation has mixed effects. Boys who are stronger and more athletic during their early teen years tend to be more popular, self-assured, and independent, though also more at risk for alcohol use, delinquency, and premature sexual activity (Conley & Rudolph, 2009; Copeland et al., 2010; Lynne et al., 2007).

For girls, early maturation can be a challenge (Mendle et al., 2007). If a young girl's body and hormone-fed feelings are out of sync with her emotional maturity and her friends' physical development and experiences, she may begin associating with older adolescents or may suffer teasing or sexual harassment (Ge & Natsuaki, 2009).

An adolescent's brain is also a work in progress. Until puberty, brain cells increase their connections, like trees growing more roots and branches. Then, during adolescence comes a selective pruning of unused neurons and connections (Blakemore, 2008). What we don't use, we lose.

As teens mature, their frontal lobes also continue to develop. The growth of *myelin*, the fatty tissue that forms around axons and speeds neurotransmission, enables better communication with other brain regions (Kuhn, 2006; Silveri et al., 2006). These developments bring improved judgment, impulse control, and long-term planning.

Maturation of the frontal lobes nevertheless lags behind that of the emotional limbic system. Puberty's hormonal surge and limbic system development help explain teens' occasional impulsiveness, risky behaviors, and emotional storms—slamming doors and turning up the music (Casey et al., 2008). No wonder younger teens (whose unfinished frontal lobes aren't yet fully equipped for making long-term plans and curbing impulses) so often

succumb to the tobacco corporations, which most adult smokers could tell them they will later regret. Teens actually don't underestimate the risks of smoking—or fast driving or unprotected sex. They just, when reasoning from their gut, weigh the immediate benefits more heavily (Reyna & Farley, 2006; Steinberg, 2007, 2010). They seek thrills and rewards, but they can't yet locate the brake pedal controlling their impulses.

So, when Junior drives recklessly and academically self-destructs, should his parents reassure themselves that "he can't help it; his frontal cortex isn't yet fully grown"? They can at least take hope: The brain with which Junior begins his teens differs from the brain with which he will end his teens. Unless he slows his brain development with heavy drinking—leaving him prone to impulsivity and addiction—his frontal lobes will continue maturing until about age 25 (Beckman, 2004; Crews et al., 2007).

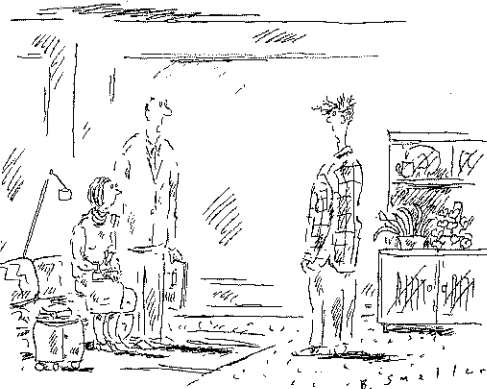
In 2004, the American Psychological Association joined seven other medical and mental health associations in filing U.S. Supreme Court briefs arguing against the death penalty for 16- and 17-year-olds. The briefs documented the teen brain's immaturity "in areas that bear upon adolescent decision making." Teens are "less guilty by reason of adolescence," suggested psychologist Laurence Steinberg and law professor Elizabeth Scott (2003; Steinberg et al., 2009). In 2005, by a 5-to-4 margin, the Court concurred, declaring juvenile death penalties unconstitutional.

Cognitive Development

5142 How did Piaget, Kohlberg, and later researchers describe adolescent cognitive and moral development?

During the early teen years, reasoning is often self-focused. Adolescents may think their private experiences are unique, something parents just could not understand: "But, Mom, you don't really know how it feels to be in love" (Elkind, 1978). Capable of thinking about

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"Young man, go to your room and stay there until your cerebral cortex matures."

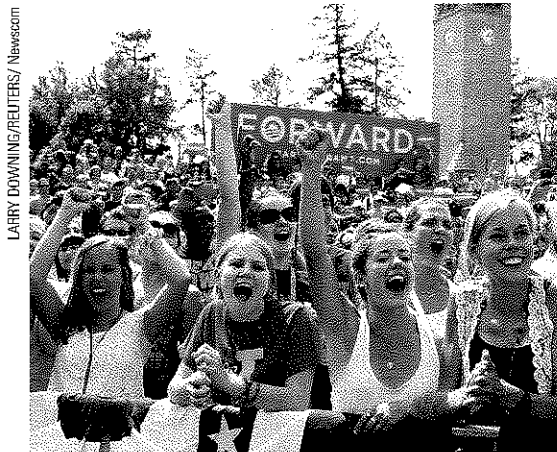
"If a gun is put in the control of the prefrontal cortex of a hurt and vengeful 15-year-old, and it is pointed at a human target, it will very likely go off." -NATIONAL INSTITUTES OF HEALTH BRAIN SCIENTIST DANIEL R. WEINBERGER, "A BRAIN TOO YOUNG FOR GOOD JUDGMENT," 2001

their own thinking, and about other people's thinking, they also begin imagining what others are thinking about *them*. (They might worry less if they understood their peers' similar self-absorption.) Gradually, though, most begin to reason more abstractly.

Developing Reasoning Power

When adolescents achieve the intellectual summit Jean Piaget called *formal operations*, they apply their new abstract reasoning tools to the world around them. They may think about what is ideally possible and compare that with the imperfect reality of their society, their parents, and even themselves. They may debate human nature, good and evil, truth and justice. Their sense of what's fair changes from simple equality to equity—to what's proportional to merit (Almás et al., 2010). Having left behind the concrete images of early childhood, they may now seek a deeper conception of God and existence (Elkind, 1970; Worthington, 1989). Reasoning hypothetically and deducing consequences also enables adolescents to detect inconsistencies and spot hypocrisy in others' reasoning. This can lead to heated debates with parents and silent vows never to lose sight of their own ideals (Peterson et al., 1986).

"When the pilot told us to brace and grab our ankles, the first thing that went through my mind was that we must all look pretty stupid." —JEREMIAH RAWLINGS, AGE 12, AFTER A 1989 DC-10 CRASH IN SIOUX CITY, IOWA



Demonstrating their reasoning ability

Although they supported different candidates in the 2012 U.S. presidential election, these teens were all demonstrating their ability to think logically about abstract topics. According to Piaget, they were in the final cognitive stage, formal operations.

Developing Morality

Two crucial tasks of childhood and adolescence are discerning right from wrong and developing character—the psychological muscles for controlling impulses. To be a moral person is to *think* morally and *act* accordingly. Jean Piaget and Lawrence Kohlberg proposed that moral reasoning guides moral actions. A newer view builds on psychology's game-changing new recognition that much of our functioning occurs not on the "high road" of deliberate, conscious thinking but on the "low road" of unconscious, automatic thinking.

MORAL REASONING

Piaget (1932) believed that children's moral judgments build on their cognitive development. Agreeing with Piaget, Lawrence Kohlberg (1981, 1984) sought to describe the development of *moral reasoning*, the thinking that occurs as we consider right and wrong. Kohlberg posed moral dilemmas (for example, whether a person should steal medicine to save a loved one's life) and asked children, adolescents, and adults whether the action was right or wrong. He then analyzed their answers for evidence of stages of moral thinking. His findings led him to propose three basic levels of moral thinking: preconventional, conventional, and postconventional (TABLE 51.1 on the next page).

Moral reasoning Some Staten Island, New York, residents faced a moral dilemma in 2012 when Superstorm Sandy caused disastrous flooding. Should they risk their lives to try to rescue family, friends, and neighbors in dangerously flooded areas?



AP® Exam Tip

Kohlberg's is an important stage theory. There are often AP® exam questions on this topic. It's very important to understand that the stage you're in doesn't depend on *what* you decide to do (for example, steal the medicine), it depends on *why* you decide to do it.

Table 51.1 Kohlberg's Levels of Moral Thinking

Level (approximate age)	Focus	Example
<i>Preconventional morality</i> (before age 9)	Self-interest; obey rules to avoid punishment or gain concrete rewards.	"If you save your wife, you'll be a hero."
<i>Conventional morality</i> (early adolescence)	Uphold laws and rules to gain social approval or maintain social order.	"If you steal the drug, everyone will think you're a criminal."
<i>Postconventional morality</i> (adolescence and beyond)	Actions reflect belief in basic rights and self-defined ethical principles.	"People have a right to live."

Kohlberg claimed these levels form a moral ladder. As with all stage theories, the sequence is unvarying. We begin on the bottom rung and ascend to varying heights. Kohlberg's critics have noted that his postconventional stage is culturally limited, appearing mostly among people who prize individualism (Eckensberger, 1994; Miller & Bersoff, 1995).

Moral Intuition

Psychologist Jonathan Haidt (2002, 2006, 2010) believes that much of our morality is rooted in *moral intuitions*—"quick gut feelings, or affectively laden intuitions." According to this intuitionist view, the mind makes moral judgments as it makes aesthetic judgments—quickly and automatically. We *feel* disgust when seeing people engaged in degrading or subhuman acts. Even a disgusting taste in the mouth heightens people's disgust over various moral digressions (Eskine et al., 2011). We *feel* elevation—a tingly, warm, glowing feeling in the chest—when seeing people display exceptional generosity, compassion, or courage. These feelings in turn trigger moral reasoning, says Haidt.

One woman recalled driving through her snowy neighborhood with three young men as they passed "an elderly woman with a shovel in her driveway. I did not think much of it, when one of the guys in the back asked the driver to let him off there. . . . When I saw him jump out of the back seat and approach the lady, my mouth dropped in shock as I realized that he was offering to shovel her walk for her." Witnessing this unexpected goodness triggered elevation: "I felt like jumping out of the car and hugging this guy. I felt like singing and running, or skipping and laughing. I felt like saying nice things about people" (Haidt, 2000).

"Could human morality really be run by the moral emotions," Haidt wonders, "while moral reasoning struts about pretending to be in control?" Consider the desire to punish. Laboratory games reveal that the desire to punish wrongdoings is mostly driven not by reason (such as an objective calculation that punishment deters crime) but rather by emotional reactions, such as moral outrage (Darley, 2009). After the emotional fact, moral reasoning—our mind's press secretary—aims to convince us and others of the logic of what we have intuitively felt.

This intuitionist perspective on morality finds support in a study of moral paradoxes. Imagine seeing a runaway trolley headed for five people. All will certainly be killed unless you throw a switch that diverts the trolley onto another track, where it will kill one person. Should you throw the switch? Most say *Yes*. Kill one, save five.

Now imagine the same dilemma, except that your opportunity to save the five requires you to push a large stranger onto the tracks, where he will die as his body stops the trolley. Kill one, save five? The logic is the same, but most say *No*. Seeking to understand why, a Princeton research team led by Joshua Greene (2001) used brain imaging to spy on people's neural responses as they contemplated such dilemmas. Only when given the body-pushing type of moral dilemma did their brain's emotion areas activate. Despite the identical logic, the personal dilemma engaged emotions that altered moral judgment.

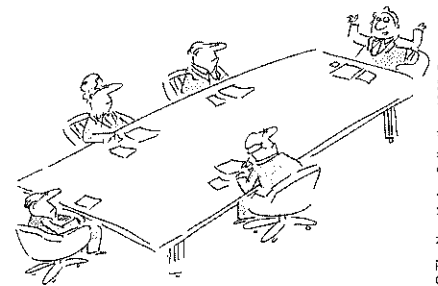
While the new moral psychology illustrates the many ways moral intuitions trump moral reasoning, others reaffirm the importance of moral reasoning. The religious and moral reasoning of the Amish, for example, shapes their practices of forgiveness, communal life, and modesty (Narvaez, 2010). Joshua Greene (2010) likens our moral cognition to a camera. Usually, we rely on the automatic point-and-shoot. But sometimes we use reason to manually override the camera's automatic impulse.

MORAL ACTION

Our moral thinking and feeling surely affect our moral talk. But sometimes talk is cheap and emotions are fleeting. Morality involves *doing* the right thing, and what we do also depends on social influences. As political theorist Hannah Arendt (1963) observed, many Nazi concentration camp guards during World War II were ordinary "moral" people who were corrupted by a powerfully evil situation.

Today's character education programs tend to focus on the whole moral package—thinking, feeling, and *doing* the right thing. As children's *thinking* matures, their *behavior* also becomes less selfish and more caring (Krebs & Van Hesteren, 1994; Miller et al., 1996). Today's programs also teach children *empathy* for others' feelings, and the self-discipline needed to restrain one's own impulses—to delay small gratifications now to enable bigger rewards later. Those who do learn to *delay gratification* become more socially responsible, academically successful, and productive (Funder & Block, 1989; Mischel et al., 1988, 1989). In service-learning programs, teens tutor, clean up their neighborhoods, and assist the elderly. The result? The teens' sense of competence and desire to serve increase, and their school absenteeism and drop-out rates diminish (Andersen, 1998; Piliavin, 2003). Moral action feeds moral attitudes.

"It is a delightful harmony when doing and saying go together."
—MICHEL EYQUEM DE MONTAIGNE
(1533–1592)



"This might not be ethical. Is that a problem for anybody?"

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Before You Move On

▶ ASK YOURSELF

Can you recall making an impulsive decision when you were younger that you later regretted? Would you approach the situation differently today?

▶ TEST YOURSELF

Describe Kohlberg's three levels of moral reasoning.

Answers to the Test Yourself questions can be found in Appendix E at the end of the book.

Module 51 Review

51.1

How is *adolescence* defined, and what physical changes mark this period?

- *Adolescence* is the transition period from childhood to adulthood, extending from puberty to social independence.
- For boys, early maturation has mixed effects; for girls, early maturation can be a challenge.
- The brain's frontal lobes mature and myelin growth increases during adolescence and the early twenties, enabling improved judgment, impulse control, and long-term planning.

51.2

How did Piaget, Kohlberg, and later researchers describe adolescent cognitive and moral development?

- Piaget theorized that adolescents develop a capacity for formal operations and that this development is the foundation for moral judgment.
- Lawrence Kohlberg proposed a stage theory of moral reasoning, from a preconventional morality of self-interest, to a conventional morality concerned with upholding laws and social rules, to (in some people) a postconventional morality of universal ethical principles.

- Other researchers believe that morality lies in moral intuition and moral action as well as thinking.
- Some critics argue that Kohlberg's postconventional level represents morality from the perspective of individualist cultures.

Multiple-Choice Questions

- The growth of _____ around axons speeds neurotransmission, enabling better communication between the frontal lobe and other brain regions.
 - neurons
 - the cell body
 - dendrites
 - myelin
 - synapses
- The maturation of the brain's _____ lags behind the development of the limbic system, which may explain the impulsivity of teenagers compared with adults.
 - frontal lobes
 - temporal lobes
 - occipital lobes
 - parietal lobes
 - corpus collosum
- _____ believed that a child's moral judgments build on cognitive development. _____ agreed and sought to describe the development of moral reasoning.
 - Kohlberg; Erikson
 - Erikson; Kohlberg
 - Piaget; Kohlberg
 - Piaget; Erikson
 - Haidt; Hall
- Which level of moral reasoning includes a focus on upholding laws in order to gain social approval?
 - Collectivist
 - Preconventional
 - Conventional
 - Postconventional
 - Formal operational
- What development in adolescents allows for greater impulse control?
 - The hormonal surge of early adolescence
 - Hindbrain changes associated with the onset of puberty
 - Frontal lobe maturation in late adolescence
 - Limbic system development in mid-adolescence
 - A decrease in myelin production throughout adolescence
- Which of Jean Piaget's stages describes typical adolescent thinking?
 - Sensorimotor
 - Preoperational
 - Concrete operational
 - Formal operational
 - Accommodation
- Which of the following correctly describes one of Kohlberg's levels of moral reasoning?
 - Preconventional stage, where one follows moral principles
 - Conventional stage, where individualism is foremost
 - Conventional stage, where it is imperative to uphold the law and follow rules
 - Preconventional stage, where moral judgment depends on rewards and punishments
 - Postconventional stage, where it is imperative to uphold the law and follow rules

Practice FRQs

- Describe how the ideas of Lawrence Kohlberg and Jonathan Haidt differ in regard to the development of morality.
- Name two biological changes related to sexual maturity in adolescence and briefly describe one change in neurological development in adolescence.

(3 points)

Answer

1 point: Lawrence Kohlberg focused on moral reasoning and the way people *think* about moral situations.

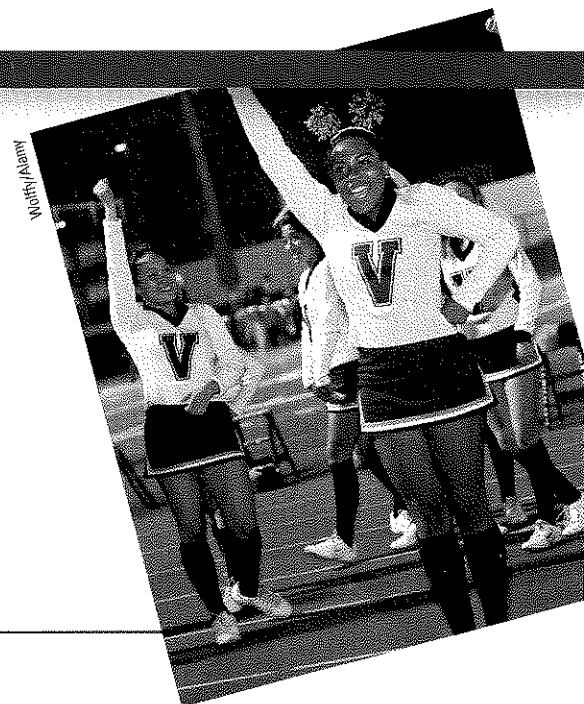
1 point: Jonathan Haidt focused on moral intuition and the way people *feel* about moral situations.

Module 52

Adolescence: Social Development and Emerging Adulthood

Module Learning Objectives

- 52-1** Describe the social tasks and challenges of adolescence.
- 52-2** Contrast parental and peer influences during adolescence.
- 52-3** Discuss the characteristics of emerging adulthood.



52-1 What are the social tasks and challenges of adolescence?

Theorist Erik Erikson (1963) contended that each stage of life has its own *psychosocial* task, a crisis that needs resolution. Young children wrestle with issues of *trust*, then *autonomy* (independence), then *initiative*. School-age children strive for *competence*, feeling able and productive. But for people your age, the task is to synthesize past, present, and future possibilities into a clearer sense of self (**TABLE 52.1** on the next page). Adolescents wonder, “Who am I as an individual? What do I want to do with my life? What values should I live by? What do I believe in?” Erikson called this quest the adolescent’s *search for identity*.

As sometimes happens in psychology, Erikson’s interests were bred by his own life experience. As the son of a Jewish mother and a Danish Gentile father, Erikson was “doubly an outsider,” reported Morton Hunt (1993, p. 391). He was “scorned as a Jew in school but mocked as a Gentile in the synagogue because of his blond hair and blue eyes.” Such episodes fueled his interest in the adolescent struggle for identity.

Forming an Identity

To refine their sense of identity, adolescents in individualist cultures usually try out different “selves” in different situations. They may act out one self at home, another with friends, and still another at school or on Facebook. If two situations overlap—as when a teenager brings friends home—the discomfort can be considerable. The teen asks, “Which self should I be? Which is the real me?” The resolution is a self-definition that unifies the various selves into a consistent and comfortable sense of who one is—an **identity**.

For both adolescents and adults, group identities are often formed by how we differ from those around us. When living in Britain, I become conscious of my Americanness. When spending time with my daughter in Africa, I become conscious of my minority (White) race. When surrounded by women, I am mindful of my gender identity. For international students, for those of a minority ethnic group, for people with a disability, for those on a team, a **social identity** often forms around their distinctiveness.

“Somewhere between the ages of 10 and 13 (depending on how hormone-enhanced their beef was), children entered adolescence, a.k.a. ‘the de-cutening.’” —JON STEWART ET AL., *EARTH (The Book)*, 2010

AP® Exam Tip

This is not the only place in the book that the author discusses Erik Erikson’s stage theory. For example, trust was discussed on page 492. Integrity comes up on page 548. Table 52.1 pulls it all together in one place for you.

identity our sense of self; according to Erikson, the adolescent’s task is to solidify a sense of self by testing and integrating various roles.

social identity the “we” aspect of our self-concept; the part of our answer to “Who am I?” that comes from our group memberships.