Terrell, age 6, just started first grade last week, all decked out in his new shirt and pants. Now he is begging his mother each morning to let him stay home. He cries and says that he has a terrible stomachache, and a headache and a sore foot besides, and is going to throw up any second so please, please, can he stay home. Because his symptoms clear up quickly if he is allowed to stay home, Terrell’s problem does not appear to be a physical illness. But what is wrong?

2.1. Developmental Theories and the Issues They Raise
The Goodness–Badness of Human Nature
Nature–Nurture
Activity–Passivity
Continuity–Discontinuity
Universality–Context Specificity

2.2. Freud: Psychoanalytic Theory
Instincts and Unconscious Motives
Id, Ego, and Superego
Psychosexual Development
Defense Mechanisms
Strengths and Weaknesses

2.3. Erikson: Neo-Freudian Psychoanalytic Theory
Psychosocial Stages
Strengths and Weaknesses

2.4. Learning Theories
Watson: Classical Conditioning
Skinner: Operant Conditioning
Bandura: Social Cognitive Theory
Strengths and Weaknesses

2.5. Piaget: Cognitive Developmental Theory
Constructivism
Stages of Cognitive Development
Strengths and Weaknesses
Other Perspectives on Cognitive Development

2.6. Systems Theories
Evolutionary Theory and Ethology
Gottlieb's Epigenetic Psychobiological Systems Perspective
Strengths and Weaknesses

2.7. Theories in Perspective
School refusal behavior is a reluctance or refusal to go to school or to remain there, sometimes called school phobia in the past because it often involves intense anxiety (C. A. Kearney, 2008). Did you ever seriously not want to go to school at some point in your educational career? School refusal affects as many as 5% of school-age children at any given time, many more at some point in their development; it is most common among 5- to 7-year-olds like Terrell who are venturing off to school for the first time (Fremont, 2003; Heyne, King, & Tonge, 2004). School refusal can have a number of different causes, involve considerable emotional distress for the child, and can have negative consequences such as academic difficulty, dropping out, and even adjustment problems in adulthood (C. A. Kearney, 2008).

How might we explain a 6-year-old’s refusal to go to school from a developmental perspective? What is your explanation? What explanations might the leading theories of human development offer? In this chapter we will illustrate that different theories of human development provide different lenses through which to view developmental phenomena such as school refusal.

### 2.1 Developmental Theories and the Issues They Raise

As noted in Chapter 1, a theory is a set of ideas proposed to describe and explain certain phenomena—in this book, the phenomena of human development. In science, it is not enough simply to catalog facts without organizing this information around some set of concepts and propositions. Researchers would soon be overwhelmed by trivia and would lack “the big picture.” A theory of human development provides needed organization, offering a lens through which researchers can interpret and explain any number of specific facts or observations. A theory also guides the collection of new facts or observations, making clear (1) what is most important to study, (2) what can be hypothesized or predicted about it, and (3) how it should be studied. Because different theorists often have different views on these critical matters, what is learned in any science greatly depends on which theoretical perspectives become dominant, which largely depends on how well they account for the facts.
Choose one option for each statement, and write down the corresponding letter or fill in at the end of the box. See Table 2.4 to compare your results with how the theorists described in this chapter view development.

1. Biological influences (heredity and maturational forces) and environmental influences (culture, parenting styles, and learning experiences) are thought to contribute to development. Overall,
   a. biological factors contribute far more than environmental factors.
   b. biological factors contribute somewhat more than environmental factors.
   c. biological and environmental factors are equally important.
   d. environmental factors contribute somewhat more than biological factors.
   e. environmental factors contribute far more than biological factors.

2. Children are innately
   a. mostly bad; they are born with basically negative, selfish impulses.
   b. neither good nor bad; they are tabulae rasaee (blank slates).
   c. both good and bad; they are born with predispositions that are both positive and negative.
   d. mostly good; they are born with many positive tendencies.

3. People are basically
   a. active beings who are the prime determiners of their own abilities and traits.
   b. passive beings whose characteristics are molded either by social influences (parents, other significant people, and outside events) or by biological changes beyond their control.

4. Development proceeds
   a. through stages so that the individual changes rather abruptly into a different kind of person than she was in an earlier stage.
   b. in a variety of ways—some stagelike and some gradual or continuous.
   c. continuously—in small increments without abrupt changes or distinct stages.

5. When you compare the development of different individuals, you see
   a. many similarities; children and adults develop along universal paths and experience similar changes at similar ages.
   b. many differences; different people often undergo different sequences of change and have widely different timetables of development.

Statement:

1 2 3 4 5

Your pattern of choices:

In this chapter, we examine four major theoretical viewpoints, each with important messages about the nature of human development:

1. The psychoanalytic viewpoint developed by Sigmund Freud and revised by Erik Erikson and other neo-Freudians
2. The learning perspective developed by such pioneers as Ivan Pavlov, John Watson, B. F. Skinner, and Albert Bandura
3. The cognitive developmental viewpoint associated with Jean Piaget
4. The systems theory approach, exemplified by Urie Bronfenbrenner (see Chapter 1), Gilbert Gottlieb (this chapter), and Esther Thelen (Chapter 5)

We will be asking as we go whether these theoretical perspectives meet the criteria of good theories introduced in Chapter 1—that is, whether they are internally consistent (coherent), falsifiable (testable), and supported by data (confirmed by research). To further aid in comparing the theories, we outline five key developmental issues on which theorists—and people in general—often disagree (Miller, 2010; Parke et al., 1994): the goodness-badness of human nature, nature-nurture, activity-passivity, continuity-discontinuity, and universality-context specificity. All of us hold some basic beliefs about human development—for example, about the importance of genes versus good parenting in healthy development. Reading this chapter should make you more aware of your own assumptions about human development and how they compare with those of the major theorists. We therefore invite you to clarify your stands on these issues by completing the questionnaire in Engagement Box 2.1. Table 2.4 at the end of the chapter indicates how the major developmental theorists might answer the questions, so you can compare your assumptions with theirs.

In Exploration boxes throughout this chapter, we imagine some major points each theorist might make about the causes of school refusal. We suggest that you predict what each theorist would say before you read each of these boxes to see whether you can successfully apply each theory to this developmental prob-
The Goodness–Badness of Human Nature

Are people inherently good, inherently bad, or neither? Well before modern theories of human development were proposed, philosophers of the 17th and 18th centuries were taking stands on the nature of human beings and human development. Thomas Hobbes (1588–1679), for one, portrayed children as inherently selfish and bad and believed that it was society’s responsibility to teach them to behave in civilized ways. By contrast, Jean-Jacques Rousseau (1712–1778) argued that children were innately good, that they were born with an intuitive understanding of right and wrong, and that they would develop in positive directions as long as society did not interfere with their natural tendencies (as he felt it often did). In the middle was English philosopher John Locke (1632–1704), who maintained that infants are tabulae rasa, or “blank slates,” waiting to be written on by their experiences. That is, children were neither innately good nor innately bad but could develop in any direction depending on their experiences.

These different visions of human nature are all represented in one or more theories of development, and they have radically different implications for how to raise children. In teaching children to share, for example, should parents assume that their innate selfish tendencies must be battled at every step, that they are predisposed by nature to be helpful and caring, or that they have the potential to become either selfish beasts or selfless wonders depending on how they are brought up? Evidence that humans have biologically based tendencies, both good and bad, has challenged the Lockean (and quite popular) belief that humans are blank slates and can become anything they are raised to become (Pinker, 2002), but many questions remain about the fundamental nature of human beings and the extent to which human nature can be modified.

Nature–Nurture

Is development primarily the product of nature (biological forces) or nurture (environmental forces)? As you saw in Chapter 1, the nature–nurture issue is the most important and most complex issue in the study of human development. Strong believers in nature (like Rousseau, champion of the innate goodness of children) stress the importance of individual genetic makeup, universal maturational processes guided by genes, biologically based predispositions built into genes over the course of evolution, and other biological influences. They are likely to claim that all normal children achieve the same developmental milestones at similar times because of matura-

-tonal forces, that major changes in functioning in late adulthood are biologically based, and that differences among children or adults are largely because of differences in genetic makeup and physiology.

By contrast, strong believers in nurture (like Locke, who claimed experience shapes development) would emphasize environment—the range of influences outside the person. Nurture includes influences of the physical environment (crowding, pollution, and the like) as well as the social environment (for example, learning experiences, child-rearing methods, peers, societal trends, and the cultural context in which the person develops). A strong believer in nurture would argue that human development can take many paths depending on the individual’s experiences over a lifetime.

Activity–Passivity

The activity–passivity issue focuses on the extent to which human beings are active in creating and influencing their own environments and, in the process, in producing their own development, or are passively shaped by forces beyond their control. Some theorists (following in the tradition of Rousseau) believe that humans are curious, active creatures who orchestrate their own development by exploring the world around them and shaping their environments. The girl who asks for dolls at the toy store and the boy who clams for stories that sometimes guns are actively contributing to their own gender-role development. Both the budding scientist who experiments with chemicals in the basement and the sociable adolescent who spends hours texting often are seeking out and creating a “niche” that suits their emerging traits and abilities—and that ultimately develop those traits in the process (Harris, 2006).

Other theorists (in the tradition of Locke) view humans as passive beings shaped largely by forces beyond their control—usually environmental influences but possibly strong biological forces. From this vantage point, children’s academic failings might be blamed on the failure of their parents and teachers to provide them with the right learning experiences, and the problems of socially isolated older adults might be attributed to societal neglect of the elderly rather than to deficiencies within the individual.

Continuity–Discontinuity

Do you believe that humans change gradually, in ways that leave them not so different from the way they were before, or do you believe humans change abruptly and dramatically? One aspect of the continuity–discontinuity issue focuses on whether the changes people undergo over the life span are gradual or abrupt. Continuity theorists view human development as a process that occurs in small steps, without sudden changes, as when grade school children gradually gain weight from year to year. In contrast, discontinuity theorists tend to picture the course of development as more like a series of stair steps, each of which elevates the individual to a new (and often more advanced) level of functioning. When an adolescent boy rapidly grows up 6 inches in
height, gains a bass voice, and grows a beard, the change seems discontinuous.

A second aspect of the continuity–discontinuity issue focuses on whether changes are quantitative or qualitative in nature. Quantitative changes are changes in degree and indicate continuity: a person gains more wrinkles, grows taller, knows more vocabulary words, or interacts with friends less frequently. By contrast, qualitative changes are changes in kind and suggest discontinuity. They are changes that make the individual fundamentally different in some way (\textit{Figure} 2.1). The transformations of a caterpillar into a butterfly, rather than just a bigger caterpillar, of a nonverbal infant into a speaking toddler, or of a prepubertal child into a sexually mature adolescent are examples of qualitative changes.

So continuity theorists typically hold that developmental changes are gradual and quantitative, whereas discontinuity theorists hold that they are more abrupt and qualitative. Discontinuity theorists often propose that people progress through developmental stages. A stage is a distinct phase of development characterized by a particular set of abilities, motives, emotions, or behaviors that form a coherent pattern. Development is said to involve fairly rapid transitions from one stage to another, each stage being qualitatively different from the stage before or the stage after. Thus, the preschool child may be said to have a fundamentally different approach to solving problems than the infant, adolescent, or adult.

\textbf{Universality–Context Specificity}

Finally, developmental theorists often disagree on the universality–context-specificity issue—or the extent to which developmental changes are common to all humans (universal) or different across cultures, subcultures, task contexts, and individuals (context specific). Stage theorists typically believe that the stages they propose are universal. For example, a stage theorist might claim that virtually all children enter a new stage in their intellectual development as they enter adolescence or that most adults, sometime around age 40, experience a midlife crisis in which they raise major questions about their lives. From this perspective, development proceeds in certain universal directions.

But other theorists believe that human development is far more varied. Paths of development followed in one culture may be quite different from paths followed in another culture (or subculture, neighborhood, or even performance context). For example, preschool children in the United States sometimes believe that dreams are real but give up this belief as they age. By contrast, children raised in the Ayat culture of Taiwan have been observed to become more and more convinced as they get older that dreams are real, most likely because that is what adults in their culture believe (Kohlberg, 1966b). Within a particular culture, developmental change may also differ from subcultural group to subcultural group, from family to family, and from individual to individual. There seems to be both universality and context specificity in human development. As American poet Mark Van Doren once said, “There are two statements about human beings that are true: that all human beings are alike, and that all are different” (cited in Norenzayan & Heine, 2005, p. 763).

Now that you are familiar with some major issues of human development that different theories resolve in different ways (\textit{Table} 2.1), we will begin our survey of the theories, starting with Freud’s well-known psychoanalytic perspective.
**TABLE 2.1 ISSUES IN HUMAN DEVELOPMENT**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Goodness–Badness of Human Nature</td>
<td>Are humans innately good, innately bad, neither (tabulae rasae), or both?</td>
</tr>
<tr>
<td>2. Nature–Nurture</td>
<td>Is development primarily the product of genes, biology, and maturation—or of experience, learning, and social influences?</td>
</tr>
<tr>
<td>3. Activity–Passivity</td>
<td>Do humans actively shape their own environments and contribute to their own development—or are they passively shaped by forces beyond their control?</td>
</tr>
<tr>
<td>4. Continuity–Discontinuity</td>
<td>Do humans change gradually and in quantitative ways—or do they progress through qualitatively different stages and change dramatically into different beings?</td>
</tr>
<tr>
<td>5. Universality–Context Specificity</td>
<td>Is development similar from person to person and from culture to culture—or do pathways of development vary considerably depending on the social context?</td>
</tr>
</tbody>
</table>

**Checking Mastery**

1. If you believe that children are tabulae rasae, what stands do you take on the goodness or badness of human nature and the nature-nurture issues?

2. Stage theorists can disagree about a lot, but they are all likely to take certain stances on the issues of nature-nurture, continuity-discontinuity, and universality-context specificity. What stands?

**Making Connections**

1. Professor Whitehead has developed a theory of positive aging emphasizing that older adults all over the world are basically similar to younger adults in their psychological needs, that they have great potential to shape their own aging experience by selecting who they want to interact with and how, and that, unless they are thwarted by society, they will generally want to contribute positively to their communities rather than being dependent. What stands on the major issues in human development does Professor Whitehead seem to be taking? Explain why you think so.

2. What stands on the five major issues in human development do you feel your parents took in raising you? Why?

**2.2 Freud: Psychoanalytic Theory**

It is difficult to think of a theorist who has had a greater effect on Western thought than Sigmund Freud, the Viennese physician who lived from 1856 to 1939. This revolutionary thinker’s psychoanalytic theory, which focused on the development and dynamics of the personality, challenged prevailing notions of human nature and human development by proposing that people are driven by motives and emotional conflicts of which they are largely unaware and that they are shaped by their earliest experiences in the family (Hall, 1954; Westen, Cabbard, & Ortigo, 2008). Freud’s ideas continue to influence thinking about human development, even though they are far less influential today than they once were.

**Instincts and Unconscious Motives**

Central to Freudian psychoanalytic theory is the notion that humans have basic biological urges or drives that must be satisfied. Freud viewed the newborn as a “scathing cauldron,” an inherently selfish creature “driven” by instincts, or inborn biological forces that motivate behavior. These biological instincts are the source of the psychic (or mental) energy that fuels human behavior and that is channeled in new directions over the course of human development.

Freud strongly believed in unconscious motivation—the power of instincts and other inner forces to influence our behavior without our awareness. A preadolescent girl, for example, may not realize that she is acting in babyish ways in order to regain the security of her mother’s love; a teenage boy may not realize...
that his devotion to body building is a way of channeling his sexual and aggressive urges. You immediately see that Freud's theory emphasizes the nature side of the nature-nurture issue: biological instincts—forces that often provide an unconscious motivation for actions—guide human development. The fact that he viewed these innate forces as selfish and aggressive suggests that he also held a negative view of human nature.

**Id, Ego, and Superego**

According to Freud (1933), each individual has a fixed amount of psychic energy that can be used to satisfy basic urges or instincts and to grow psychologically. As a child develops, this psychic energy is divided among three components of the personality: the id, the ego, and the superego. At birth, all psychic energy resides in the id—the impulsive, irrational, and selfish part of the personality whose mission is to satisfy the instincts. The id seeks immediate gratification, even when biological needs cannot be realistically or appropriately met. If you think about it, young infants do seem to be all id in some ways. When they are hungry or wet, they fuss and cry until their needs are met. They are not known for their patience.

The second component of the personality is the ego, the rational side of the individual that tries to find realistic ways of gratifying the instincts. According to Freud (1933), the ego begins to emerge during infancy when psychic energy is diverted from the id to energize cognitive processes such as perception, learning, and problem solving. The hungry toddler may be able to do more than merely cry when she is hungry; she may be able to draw on the resources of the ego to hunt down Dad, lead him to the kitchen, and say “cookie.” However, toddlers’ egos are still relatively immature, they want what they want now. As the ego matures further, children become more capable of postponing their pleasures until a more appropriate time and of devising logical and realistic strategies for meeting their needs.

The third part of the Freudian personality is the superego, the individual’s internalized moral standards. The superego develops from the ego as 3- to 6-year-old children internalize (take on as their own) the moral standards and values of their parents. Once the superego emerges, children have a parental voice in their heads that keeps them from violating society’s rules and makes them feel guilty or ashamed if they do. The superego insists that people find socially acceptable or ethical outlets for the id’s undesirable impulses.

Conflict among the id, ego, and superego is inevitable, Freud said. In the mature, healthy personality, a dynamic balance operates: the id communicates its basic needs, the ego restrains the impulsive id long enough to find realistic ways to satisfy these needs, and the superego decides whether the ego’s problem-solving strategies are morally acceptable. The ego has a tough job: it must strike a balance between the opposing demands of the id and the superego while accommodating the realities of the environment.

According to Freud (1940/1964), psychological problems often arise when the individual’s supply of psychic energy is unevenly distributed among the id, the ego, and the superego. For example, a person diagnosed as an antisocial personality, or sociopath, who routinely lies and cheats to get his way, may have a weak superego, whereas a married woman who cannot undress in front of her husband may have an overly strong superego, perhaps because she was made to feel ashamed about any interest she took in her body as a young girl. Through analysis of the dynamics operating among the three parts of the personality, Freud and his followers attempted to describe and understand individual differences in personality and the origins of psychological disorders.

**Psychosexual Development**

Freud (1940/1964) maintained that as the child matures biologically, the psychic energy of the sex instinct, which he called libido, shifts from one part of the body to another, seeking to gratify different biological needs. In the process, as outlined in Table 2.2, the child moves through five psychosexual stages: oral, anal, phallic, latent, and genital.

Emphasizing the role of nature over that of nurture in development, Freud maintained that inborn biological instincts drive behavior and that biological maturation guides all children through the five psychosexual stages. Yet he also viewed nurture—especially early experiences within the family—as an important contributor to individual differences in adult personality. At each psychosexual stage, the id’s impulses and social demands come into conflict. Harsh child-rearing methods—punishing babies for mouthing pacifiers and other interesting objects around the house, or toddlers for their toileting accidents, or preschoolers for taking interest in their genitals—can heighten psychic conflicts and the child’s anxiety.

The baby in the oral stage of psychosexual development focuses on the mouth as a source of sexual pleasure and can, according to Freud, experience anxiety and need to defend against it if denied oral gratification by not being fed on demand, being weaned too early, being chastised for mouthing objects, and so on. Through fixation, arrested development in which part of the libido remains tied to an earlier stage of development, an infant deprived of oral gratification might become “stuck” in the oral stage. He might become a chronic thumb sucker and then a chain smoker and depend too much on other people rather than moving on to the next psychosexual stages. Freud thought too much oral gratification could also pose a problem if it makes it difficult for the child to leave the oral stage. Either way, he believed that how the child copes with the challenges of a stage and what parents do to help or hurt can leave a lasting imprint on the personality.

Similarly, the toddler in the anal stage must cope with new demands from the parents when toilet training begins. Parents who are impatient and punitive as their children learn to delay the gratification of relieving themselves can create high levels of anxiety and a personality that resists demands from authority figures not only to defecate on schedule but to control other impulses (by holding back, as the so-called anal personality does, or by acting out inappropriately). The parent’s goal should be to allow some (but not too much) gratification of impulses while
<table>
<thead>
<tr>
<th>Stage (Age Range)</th>
<th>Description</th>
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<tbody>
<tr>
<td>Oral stage (birth to 1 year)</td>
<td>Libido is focused on the mouth as a source of pleasure. Obtaining oral gratification from a mother figure is critical to later development.</td>
<td>Trust vs. mistrust (birth to 1 year)</td>
<td>Infants must learn to trust their caregivers to meet their needs. Responsive parenting is critical.</td>
</tr>
<tr>
<td>Anal stage (1 to 3 years)</td>
<td>Libido is focused on the anus, and toilet training creates conflicts between the child's biological urges and the society's demands.</td>
<td>Autonomy vs. shame and doubt (1 to 3 years)</td>
<td>Children must learn to be autonomous—to assert their wills and do things for themselves—or they will doubt their abilities.</td>
</tr>
<tr>
<td>Phallic stage (3 to 6 years)</td>
<td>Libido centers on the genitals. Resolution of the Oedipus or the Electra complex results in identification with the same-sex parent and development of the superego.</td>
<td>Initiative vs. guilt (3 to 6 years)</td>
<td>Preschoolers develop initiative by devising and carrying out bold plans, but they must learn not to impinge on the rights of others.</td>
</tr>
<tr>
<td>Latent period (6 to 12 years)</td>
<td>Libido is quiet; psychic energy is invested in schoolwork and play with same-sex friends.</td>
<td>Industry vs. inferiority (6 to 12 years)</td>
<td>Children must master important social and academic skills and keep up with their peers; otherwise, they will feel inferior.</td>
</tr>
<tr>
<td>Genital stage (12 years and older)</td>
<td>Puberty reawakens the sexual instincts as youths seek to establish mature sexual relationships and pursue the biological goal of reproduction.</td>
<td>Identity vs. role confusion (12 to 20 years)</td>
<td>Adolescents ask who they are and must establish social and vocational identities; otherwise, they will remain confused about the roles they should play as adults.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intimacy vs. isolation (20 to 40 years)</td>
<td>Young adults seek to form a shared identity with another person, but may fear intimacy and experience loneliness and isolation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Generativity vs. stagnation (40 to 65 years)</td>
<td>Middle-aged adults must feel that they are producing something that will outlive them, either as parents or as workers; otherwise, they will become stagnant and self-centered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Integrity vs. despair (65 years and older)</td>
<td>Older adults must come to view their lives as meaningful to face death without worries and regrets.</td>
</tr>
</tbody>
</table>

helping the child achieve reasonable (but not too much) control over these impulses.

The phallic stage from age 3 to age 6 is an especially treacherous time, according to Freud. Youngsters develop an incestuous desire for the parent of the other sex and must defend against it. A boy experiencing an Oedipus complex loves his mother, fears that his father will retaliate by castrating him, and resolves this conflict through identification with his father. Identification involves taking on or internalizing the attitudes and behaviors of another person; the Oedipal boy defends against his forbidden desire for his mother and hostility toward his father by possessing his mother vicariously through his now-admired and less fearful-looking father. Meanwhile, a girl experiencing an Electra complex is said to desire her father (and envy the fact that he has a penis, whereas she does not), view her mother as a rival, and ultimately resolve her conflict by identifying with her mother. When boys and girls resolve their emotional conflicts by identifying with the same-sex parent, they incorporate that parent's values into their superego, so the phallic period is critical in moral development.
Children who refuse to attend school are sometimes suffering from psychological problems such as anxiety or depression (Elliott, 1999; C. A. Kearney, 2008). More specifically, Terrell's problem, of which he is probably unaware, may not be fear of school as much as separation anxiety—fear of leaving his mother, originating in an unresolved Oedipal conflict involving his incestuous desire for his mother in the phallic stage of psychosexual development.

During the latency period, sexual urges are tame and 6- to 12-year-olds invest psychic energy in schoolwork and play, but adolescents experience new psychic conflicts as they reach puberty and enter the final stage of psychosexual development, the genital stage. Adolescents may have difficulty accepting their new sexuality, may reexperience conflicting feelings toward their parents that they felt during the phallic stage, and may distance themselves from their parents to defend themselves against these anxiety-producing feelings. During adulthood, people may develop a greater capacity to love and typically satisfy the mature sex instinct by having children. However, Freud believed that psychosexual development stops with adolescence and that the individual remains in the genital stage throughout adulthood.

Defense Mechanisms
To defend itself against anxiety, the ego adopts unconscious coping devices called defense mechanisms (Freud, 1940/1964). Some examples (besides identification, which we already discussed) include:

- Repression, or removing unacceptable thoughts or traumatic memories from consciousness, as when a young woman who was raped has no memory at all of having been raped (or less drastically, engages in denial, knowing deep down that she was raped but not accepting the reality of it).
- Regression, or retreating to an earlier, less traumatic stage of development, as when a preschool girl, threatened by a new baby brother, reverts to infantile behavior and coos like a baby.
- Projection, or seeing in others the motives we fear we possess, as when a husband charges his wife with being the one who is jealous and insecure, not he.
- Reaction formation, or expressing motives that are just the opposite of one's real motives, as when a woman who unconsciously wants to gratify her sexual urges instead takes up a crusade against pornography.

Defense mechanisms illustrate the importance of unconscious motivations in Freudian theory; we learn these and other defense mechanisms to cope with inner conflicts of which we are largely unaware, deceiving ourselves in order to save ourselves. Defense mechanisms can be healthy in that they allow us to function despite anxiety, but they can also spell trouble for some people if they involve too much distortion of reality. Moreover, they sap psychic energy and usually do not resolve underlying psychic conflicts, which is why Freud believed that the goal of psychotherapy should be to bring unconscious fantasies, desires, and beliefs to the level of consciousness.

In Exploration Box 2.1, we imagine the notes that Freud might have scribbled down to explain Terrell's school refusal, as described at the start of the chapter. What might you say if you were Freud?

Strengths and Weaknesses
Many developmentalists fault Freud for proposing a theory that is ambiguous, internally inconsistent, difficult to pin down and test, and therefore not easily falsifiable (Fonagy & Target, 2000). Testing hypotheses that require studying unconscious motivations and the workings of the unseen id, ego, and superego has been challenging. Freud himself offered little hard evidence to support his theory. Moreover, when the theory has been tested, many of its specific ideas have not been supported (Crews, 1996; Fisher & Greenberg, 1977). One critic went so far as to call it "a theory in search of some facts" (Macmillan, 1991, p. 548).

To illustrate, Freud initially concluded that many of his patients had been sexually or physically abused during childhood but had repressed memories of their traumatic experiences. Because the idea of rampant incest and sexual abuse was difficult to accept, he later said that children in the phallic stage wished for and fantasized about, but did not actually experience, seduction by their parents (Mason, 1984). There is still controversy about whether Freud meant to deny the reality of incest and other forms of child sexual abuse or to call attention to the importance of fantasy in his later writings (Abbe-Rappe, 2006). Moreover, it is still debated whether Freud's patients were really sexually abused or whether his therapeutic techniques planted thoughts in their minds and created false memories of abuse. Overall, Freud's claims about the role of sexual fantasy in child development have not received much support (Crews, 1996), although psychologists certainly appreciate that sexual abuse in childhood can contribute to later psychological problems (see Chapter 12).

Although many of Freud's specific ideas have been difficult to test or have not been supported by research when they have been tested, many of his general insights have stood up well and
have profoundly influenced theories of human development, personality, and psychotherapy (Fonagy & Target, 2000; Westen et al., 2008). First, Freud called attention to unconscious processes underlying human behavior; his fundamental insights in this area are supported by modern psychological and neuropsychological research (Bargh & Morsella, 2008; Westen et al., 2008), and they have profoundly influenced psychotherapy by making the goal to bring unconscious motivations to the surface where they can be confronted and changed. Second, he was one of the first to highlight the importance for later development of early experiences in the family. Finally, he emphasized the importance of emotions and emotional conflicts in development and the workings of personality. Developmentalists have often slighted emotional development, focusing instead on observable behavior or on rational thought processes.

**Checking Mastery**

1. Jaime believes that people have both a moral side and a selfish side that work against each other. According to Freud's psychoanalytic theory, what are these "sides" called and when do they arise in development?
2. According to Freud, how do girls relate to their mothers and fathers during the phallic stage of development?
3. What is one thing Freud got right and one thing Freud got wrong?

**Making Connections**

1. In 2006, a congressman from Florida resigned from office in disgrace after it was revealed that he wrote sexually suggestive e-mails to adolescent males serving as congressional pages. He also chaired the House Caucus on Missing and Exploited children, speaking often on the need to protect children from sexual predators. What might Freud hypothesize about the congressman's personality?

**2.3 Erikson: Neo-Freudian Psychoanalytic Theory**

Another sign of Freud's immense influence is that he inspired so many disciples and descendants to make their own contributions to the understanding of human development (Bergen, 2008). Among these well-known neo-Freudians were Alfred Adler, who suggested that siblings (and rivalries among siblings) are significant in development; Carl Jung, a pioneer in the study of adult development who claimed that adults experience a midlife crisis and then become freer to express both the "masculine" and the "feminine" sides of their personalities; Karen Homey, who challenged Freud's ideas about sex differences; Harry Stack Sullivan, who argued that close friendships in childhood set the stage for intimate relationships later in life; and Freud's daughter Anna, who developed techniques of psychoanalysis appropriate for children.

But the neo-Freudian who most influenced thinking about life-span development was Erik Erikson (1902-1994), whom we will revisit in more detail in Chapter 11. Erikson studied with Anna Freud and emigrated from Germany to the United States when Hitler rose to power (Friedman, 1999). Like Sigmund Freud, Erikson (1963, 1968, 1982) concerned himself with the inner dynamics of personality and proposed that the personality evolves through systematic stages. However, compared with Freud, Erikson:

- Placed less emphasis on sexual urges as the drivers of development and more emphasis on social influences such as peers, teachers, schools, and the broader culture.
- Placed less emphasis on the unconscious, irrational, and selfish id and more on the rational ego and its adaptive powers.
- Held a more positive view of human nature, seeing people as active in their development, largely rational, and able to overcome the effects of harmful early experiences.
- Put more emphasis on development after adolescence.

As one scholar summed it up, Erikson shifted Freudian thought "upward in consciousness, outward to the social world, and forward throughout the complete life span" (Hoare, 2005, p. 19).

**Psychosocial Stages**

Erikson believed that humans everywhere experience eight major psychosocial stages, or conflicts, during their lives. (Erikson's psychosocial stages are matched up with Freud's in Table 2.2.) Whether the conflict of a particular stage is successfully resolved or not, the individual is pushed by both biological maturation and social demands into the next stage. However, the unsuccessful resolution of a conflict will influence how subsequent stages play out.

For example, the first conflict, trust versus mistrust, revolves around whether or not infants become able to rely on other people to be responsive to their needs. To develop a sense of trust, infants must be able to count on their primary caregivers to feed them, relieve their discomfort, come when beckoned, and
Like a good Freudian, I would check for unresolved conflicts from earlier stages of development. For example, might Terrell have developed a sense of shame and doubt owing to negative reactions from his parents when he tried to assert himself as a toddler?

I would also focus on his current psychosocial stage, industry versus inferiority. Might Terrell have performed poorly on school tasks during the first week of school and concluded that he is inferior to the other children?

Like Freud, I would also focus on the parent–child relationship, but I would recognize that other relationships count too. Something going on in Terrell’s relationships with his peers or teacher, or even something happening in the wider culture, may be upsetting him.

Erikson clearly did not agree with Freud that the personality is essentially “set in stone” during the first 5 years of life. Yet he, like Freud and other psychoanalytic theorists, believed that people progress through systematic stages of development, undergoing similar personality changes at similar ages. Individual differences in personality presumably reflect the different experiences individuals have, both in the family and beyond, as they struggle to cope with the challenges of each life stage. Both biological maturation and demands of the social and cultural environment influence the individual’s progress through Erikson’s sequence of psychosocial stages. As an illustration, Exploration Box 2.2 shows what Erikson might have said about Terrell’s school refusal.

Strengths and Weaknesses

Many people find Erikson’s emphasis on our rational, adaptive nature and on an interaction of biological and social influences easier to accept than Freud’s emphasis on unconscious, irrational motivations based in biological needs. Erikson also seems to have captured some central developmental issues in his eight stages. He has had an especially great impact on ideas about and research on adolescent identity formation and issues faced during adulthood (see Berzoff, 2008, and Chapter 11). Still, Erikson’s theory has many of the same shortcomings as Freud’s. It is sometimes vague and difficult to test. And although it provides a useful description of human personality development, it does not provide an adequate explanation of how this development comes about. Important psychoanalytic theorists such as Erikson continue to shape understanding of human development (Austrian, 2008), but many developmentalists have rejected the psychoanalytic perspective in favor of theories that are more precise and testable.

Checking Mastery

1. What are four major ways in which Erikson differed from Freud?
2. Wanda, at age 40, is depressed. She seems to doubt her ability to assert herself and take charge of situations and she thinks other people will let her down. What Eriksonian stages might have been problematic for her in childhood, and how might her parents have contributed to her current problems?
Making Connections

1. How might Erikson analyze the wayward congressman described in the Section 2.2 Making Connections, and how would his analysis differ from Freud's?

2. Thinking about yourself, your parents, and your grandparents, can you see any evidence that Erikson's conflicts of adolescence and adulthood are relevant in your family?

2.4 Learning Theories

Give me a dozen healthy infants, well formed, and my own specified world to bring them up in, and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant, chief, and yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. (Watson, 1925, p. 82)

This bold statement—that nurture is everything and that nature, or genetic endowment, counts for nothing—was made by John B. Watson, a strong believer in the importance of learning in human development and a pioneer of learning theory perspectives on human development. Early learning theorists such as Watson and B. F. Skinner emphasized that human behavior changes in direct response to environmental stimuli; later learning theorists such as Albert Bandura grant humans a more active and cognitive role in their own development but still believe that their development can take different directions depending on their experiences. All learning theorists have provided us with some very important and practical tools for understanding how human behavior changes through learning.

Watson: Classical Conditioning

Watson’s (1913) behaviorism rested on his belief that conclusions about human development and functioning should be based on observations of overt behavior rather than on speculations about unobservable cognitive and emotional processes. Watson rejected psychoanalytic theory and devoted a good deal of effort to trying to explain Freud’s fascinating discoveries about humans in terms of basic learning principles (Rilling, 2000). He maintained that learned associations between external stimuli and observable responses are the building blocks of both normal and abnormal human development. Like John Locke, Watson believed that children have no inborn tendencies and that how they turn out depends entirely on the environment in which they grow up and the ways in which their parents and other significant people in their lives treat them.

To make his point, Watson and colleague Rosalie Raynor (1920) set out to demonstrate that fears can be learned—that they are not necessarily inborn, as was commonly thought. They used the principles of classical conditioning, a simple form of learning in which a stimulus that initially had no effect on the individual comes to elicit a response through its association with a stimulus that already elicits the response. The Russian physiologist Ivan Pavlov first discovered classical conditioning quite accidentally while studying the digestive systems of dogs. In a famous experiment, Pavlov demonstrated how dogs, who have an innate (unlearned) tendency to salivate at the sight of food, could learn to salivate at the sound of a bell if, during a training period, the bell was regularly sounded just as a dog was given meat powder. Food is an unconditioned stimulus (UCS)—that is, an unlearned stimulus—for salivating. Salivating, in turn, is an automatic, unlearned, or unconditioned response (UCR) to the presentation of food. No one has to teach dogs to salivate when food is presented to them. By repeatedly pairing the bell with the arrival of food, Pavlov made the bell a conditioned stimulus (CS)—that is, a learned stimulus—for what was now a conditioned response (CR) of salivation. When Pavlov then presented the bell without the food, the dogs still salivated.

Using these classical conditioning principles, Watson and Raynor presented a gentle white rat to a now-famous infant named Albert, who showed no fear of it. However, every time the rat was presented, Watson would slip behind Albert and bang a steel rod with a hammer. The loud noise served as an unconditioned stimulus (UCS) for fear, an unconditioned response (UCR) to loud noises (since babies are naturally upset by them). During conditioning, the stimuli of the white rat and the loud noise were presented together several times. Afterward, Watson presented the white rat to Albert without banging the steel rod. Albert now whimpered and cried in response to the white rat alone. His behavior had changed as a result of his experience: An initially neutral stimulus, the white rat, had become a conditioned stimulus (CS) for fear, now a conditioned response (CR), as shown in Figure 2.2. This learned or conditioned response generalized to other furry items such as a rabbit and a Santa Claus mask. By today’s standards, Watson’s experiment would be viewed as unethical, but he had made his point: emotional responses can be learned. Fortunately, fears learned through classical conditioning can be unlearned if the feared stimulus is paired with a UCS for happy emotions (Jones, 1924).

Classical conditioning is undoubtedly involved when infants learn to love their parents, who at first may be neutral stimuli but who become associated with the positive sensations of receiving milk, being rocked, and being comforted. And classical conditioning helps explain why adults find that certain songs on the radio, scents, or articles of clothing “turn them on.” A range of emotional associations and attitudes are acquired through classical conditioning.

According to the learning theory perspective, then, it is a mistake to assume that children advance through a series of distinct stages guided by biological maturation, as Freud, Erikson, and other stage theorists have argued. Instead, learning theorists view development as nothing more than learning. It is a continuous process of behavior change that is context specific and can differ enormously from person to person. Watson’s basic view was further advanced by B. F. Skinner.
Skinner: Operant Conditioning

B. F. Skinner (1905–1990), probably the most famous American psychologist, had a long, distinguished career at Harvard University and a huge impact on approaches to behavior change (Rutherford, 2009). Through his research with animals, Skinner (1953) gained understanding of another important form of learning, operant conditioning, in which a learner's behavior becomes either more or less probable depending on the consequences it produces. A learner first behaves in some way and then comes to associate this action with the positive or negative consequences that follow it. The basic principle behind operant conditioning makes sense: People tend to repeat behaviors that have desirable consequences and cut down on behaviors that have undesirable consequences. Through operant conditioning, individuals learn new skills and a range of habits, both good and bad.

In the language of operant conditioning, reinforcement occurs when a consequence strengthens a response, or makes it more likely to occur. If a preschool child cleans his room, receives a hug, then cleans his room more frequently thereafter, the hug provided positive reinforcement for room cleaning. Positive here means that something pleasant or desirable has been added to the situation, and reinforcement means that the behavior is strengthened. Thus, a positive reinforcer is a desirable event that, when introduced following a behavior, makes that behavior more probable. (Note that the effect on the child’s behavior, not the parent’s belief that the child might find a hug reinforcing, defines the consequence as reinforcing.)

Behaviorists have found that it is best to provide continuous positive reinforcement when a new skill or habit is first being learned, reinforcing every occurrence. Then, to maintain the behavior, it is best to shift to a “partial reinforcement schedule” in which only some occurrences of the behavior are reinforced and the pattern of reinforcement is unpredictable. Then the learner is likely to continue performing even if reinforcement stops.

Negative reinforcement (which is not, we repeat not, a fancy term for punishment) occurs when a behavioral tendency is strengthened because something unpleasant or undesirable is removed from the situation, or is escaped or avoided, after the behavior occurs. Are you familiar with the annoying sounds that go off in cars until you fasten your seat belt? The idea is that your
"buckling up" behavior will become a habit through negative reinforcement: buckling your seat belt allows you to escape the unpleasant sound. No candy or hugs follow the action, so negative rather than positive reinforcement makes you likely to buckle your seat belt. Many bad habits develop because they allow people to avoid or escape unpleasant events; they were learned through negative reinforcement. Teenagers may learn to lie to avoid lectures from their parents or drink because it allows them to escape feelings of anxiety at parties. In each case, a behavior is strengthened through negative reinforcement—through the removal or elimination of something undesirable like a lecture or anxiety.

Contrast reinforcement, whether it is positive or negative, with punishment: Whereas reinforcement increases the strength of the behavior that preceded it, punishment decreases the strength of the behavior or weakens it. Two forms of punishment parallel the two forms of reinforcement. Positive punishment occurs when an unpleasant stimulus is applied or added to the situation following a behavior (for example, a child is spanked for misbehaving, a cashier is criticized for coming up short of cash at the end of the day). Negative punishment occurs when a desirable stimulus is removed following the behavior (a child loses the privilege of watching TV, the amount the cashier was short is deducted from her pay). Both positive and negative punishment decrease the likelihood that the punished behavior will be repeated.

The four possible consequences of a behavior are summarized in Figure 2.3. In addition, some behavior has no consequence. Behavior that is ignored, or no longer reinforced, tends to become less frequent through the process of extinction. Indeed, a good alternative to punishing a child’s misbehavior is ignoring it and instead reinforcing desirable behavior that is incompatible with it. Too often, the well-behaved child is ignored and the misbehaving child gets the attention—attention that can serve as positive reinforcement for the misbehavior. (In classical conditioning, by the way, presenting the conditioned stimulus but no longer pairing it with the unconditioned stimulus would eventually result in extinction or weakening of the conditioned response to it.)

Skinner and other behavioral theorists have emphasized the power of positive reinforcement and have generally discouraged the use of physical punishment in childrearing. By contrast, many parents believe that physical punishment of bad behavior is necessary in raising children. Indeed, in a 2004 national survey, 77% of men and 69% of women agreed that a child sometimes needs a “good, hard spanking” and more than 90% of parents of 3- to 4-year-olds had spanked their child in the previous year (Child Trends Databank, undated). What does research say about who is right?

Although it is generally best to use more positive approaches before resorting to punishment, punishment can make children comply with parents’ demands in the short run (Benjet & Kazdin, 2003). Spanking or another form of physical punishment can be effective in changing behavior in the longer run if it (1) is administered immediately after the act (not hours later, when the child is being an angel), (2) is administered consistently after each offense, (3) is not overly harsh, (4) is accompanied by explanations, (5) is administered by an otherwise affectionate person, and (6) is used sparingly and combined with efforts to reinforce more acceptable behavior (Domjan, 1993; Gershoff, 2002; Perry & Parke, 1975).

Frequent physical punishment can have undesirable effects, however. Researchers cannot always be sure whether punishment causes problem behavior, problem behavior causes punishment, or both, but carefully designed studies suggest that physical punishment can have undesirable effects on development. For example, Lisa Berlin and her colleagues (2009) studied low-income African American, Mexican American, and white toddlers longitudinally when they were ages 1, 2, and 3. Racial and ethnic differences in the use of punishment were noted, and sometimes the effects of punishment were different in the different groups. Spanking, but not verbal punishment, at age 1 was associated with more aggressive behavior at age 2 and lower mental development scores at age 3. Importantly, although fussiness at age 1 predicted more use of spanking and verbal punishment later, the researchers were able to demonstrate that aggression and low mental development at an early age did not predict later use of punishment. Especially worrisome is evidence that punishment may make children resentful and anxious and may breed aggression by teaching them that hit-
tting is an appropriate way to solve problems. The negative effects of physical punishment are especially clear when the child punished is older than 6 years (Benjet & Kazdin, 2003).

In sum, Skinner, like Watson, believed that the course of human development depends on the individual's learning experiences. One boy’s aggressive behavior may be reinforced over time because he gets his way with other children and because his parents encourage his “macho” behavior. Another boy may quickly learn that aggression is prohibited and punished. The two may develop in different directions based on their different histories of reinforcement and punishment.

Skinner’s operant conditioning principles can help explain many aspects of human development; they are still studied by psychologists and applied in behavioral and, more recently, cognitive behavioral interventions in educational and therapeutic settings (A. J. Kearney, 2008; Mayer et al., 2009). Yet many developmentalists believe that Skinner placed too little emphasis on the role of cognitive processes such as attention, memory, and reflection in learning. Therefore, today’s developmental scholars are more attracted to Albert Bandura’s cognitive brand of learning theory than to Skinner’s operant conditioning approach.

### Bandura: Social Cognitive Theory

In his social cognitive theory (formerly called social learning theory), Stanford psychologist Albert Bandura (1977, 1986, 1989, 2000, 2006) claims that humans are cognitive beings whose active processing of information plays a critical role in their learning, behavior, and development. Bandura argues that human learning is very different from rat learning because humans have far more sophisticated cognitive capabilities. He agrees with Skinner that operant conditioning is an important type of learning, but he notes that people think about the connections between their behavior and its consequences, anticipate the consequences likely to follow from their behavior, and often are more affected by what they believe will happen than by the consequences they actually encounter. Individuals also reinforce or punish themselves with mental pats on the back and self-criticism, and these cognitions also affect behavior. More generally, Bandura wants his position to be called social cognitive theory rather than social learning theory for a reason: to distance himself from behavioral learning theories like Watson’s and Skinner’s and to emphasize that his theory is about the motivating and self-regulating role of cognition in human behavior (Bandura, 1986).

By highlighting observational learning as the most important mechanism through which human behavior changes, Bandura made his cognitive emphasis clear. Observational learning is simply learning by observing the behavior of other people (called models). By imitating other people, children can learn how to use computers and tackle math problems, as well as how to swear, snack between meals, and smoke. Observational learning is regarded as a more cognitive form of learning than conditioning because learners must pay attention, construct and remember mental representations (images and verbal summaries) of what they saw, retrieve these representations from memory later, and use them to guide behavior.

In a classic experiment, Bandura (1965) set out to demonstrate that children could learn a response neither elicited by a conditioned stimulus (as in classical conditioning) nor performed and then strengthened by a reinforcer (as in operant conditioning). He had nursery school children watch a short film in which an adult model attacked an inflatable “Bobo” doll: hitting the doll with a mallet while shouting “Sockeroo,” throwing rubber balls at the doll while shouting “Bang, bang, bang,” and so on. Some children saw the model praised, others saw him punished, and still others saw no consequences follow his violent attack. After the film ended, children were observed in a playroom with the Bobo doll and many of the props the model had used to work Bobo over.

**What did the children learn?** The children who saw the model rewarded and the children in the no-consequences condition imitated more of the model’s aggressive acts than did the children who had seen the model punished. But interestingly, when the children who had seen the model punished were asked to reproduce all of the model’s behavior they could remember, it turned out that they had learned just as much as the other children about how to treat a Bobo doll. Apparently, then, through a process termed latent learning in which learning occurs but is not evident in behavior, children can learn from observation even though they do not imitate (perform) the learned responses. Whether they will perform what they learn depends partly on vicarious reinforcement, a process in which learners become more or less likely to perform a behavior based on whether consequences experienced by the model they observe are reinforcing or punishing.
Observational learning is a very important form of learning in our society, but it may be even more important in traditional societies (Rogoff et al., 2003). There, children learn not in schools where they are segregated from adults and given formal instruction, but through participation in everyday activities in which they actively observe and listen to their elders, learning skills such as weaving and hunting without the adults intentionally teaching them (Rogoff et al., 2003). In one interesting cross-cultural study (Correa-Chavez & Rogoff, 2009), Mayan children living in Guatemala, especially those whose mothers had had little Western schooling, were much more attentive while their siblings were taught to use a new toy than European American children from the United States were—and learned more as a result. The Mayan children were more used to learning by watching what was going on around them than the European American children, who seemed to look to teachers and parents to arrange learning experiences directed toward them personally.

In recent years, Bandura (2000, 2006) has moved beyond the study of observational learning to emphasize the concept of human agency, ways in which people deliberately exercise cognitive control over themselves, their environments, and their lives. From the time they are infants recognizing that they can make things happen in their worlds, people form intentions, foresee what will happen, evaluate and regulate their actions as they pursue plans, and reflect on their functioning. These cognitions play a real causal role in influencing their behavior and that of other people. Most importantly, individuals develop a high or low sense of self-efficacy in a particular area of activity, the belief that one can ef-fectively produce desired outcomes in that area. Whether you undertake an action such as going on a diet or studying for a test and whether you succeed depend greatly on whether you have a sense of self-efficacy with respect to that behavior.

Watson and Skinner may have believed that people are passively shaped by environment to become whatever those around them groom them to be, but Bandura does not. Because he views humans as active, cognitive beings, he holds that human development occurs through a continuous reciprocal interaction among the person (the individual's biological and psychological characteristics and cognitions), his or her behavior, and his or her environment—a perspective he calls reciprocal determinism (Figure 2.4). As Bandura sees it, environment does not rule, as it did in Skinner's thinking: people choose, build, and change their environments; they are not just shaped by them. Nor does biology rule; genetic influences on human behavior are evident, but cultural forces also change human environments (as when humans devised airplanes, indoor heating, and vaccines). The environments shaped by humans then influence biological evolution by influencing which traits increase the odds of survival (Bandura, 2000). And people's personal characteristics and behaviors affect the people around them, just as these people are influencing their personal characteristics and future behaviors.

Like Watson and Skinner, Bandura doubts that there are universal stages of human development. He maintains that development is context specific and can proceed along many paths. It is also continuous, occurring gradually through a lifetime of learning. Bandura acknowledges that children's cognitive capacities mature, so they can remember more about what they have seen and can imitate a greater variety of novel behaviors. Yet he also believes that children of the same age will be dissimilar if their learning experiences have differed considerably.

Obviously there is a fundamental disagreement between stage theorists such as Freud and Erikson and learning theorists such as Bandura. Learning theorists do not give a general description of the normal course of human development because they insist that there is no such description to give. Instead, they offer a rich account of the mechanisms through which behavior can change, using principles of learning that are universal in their applicability to understand how each individual changes.
Anxiety disorders and phobias can be learned in a variety of ways. John Watson might hypothesize that Terrell had a traumatic experience at school—maybe a fire drill alarm scared him or he became sick and threw up in class. Through classical conditioning, the school building might become a conditioned stimulus for anxious responses.

B. F. Skinner would insist that we should analyze the consequences of going to school versus staying at home for Terrell to see whether those consequences can explain his behavior (C. A. Kearney, 2008). If Terrell's act of going to school results in punishing consequences (punches from a bully, harsh words from the teacher), the frequency of going to school will decline. And if acting sick is negatively reinforcing because it helps Terrell avoid the unpleasantness of going to school, "sick" behavior will become more frequent.

Terrell's mother could also be positively reinforcing stay-at-home behavior by allowing Terrell to spend quality time with her doing fun things and giving him extra attention and love when he is "sick." Through observational learning, Albert Bandura would add, a child who merely witnesses another child's anxious behavior at school may learn to behave anxiously. It may also be important to understand what punishing consequences Terrell believes will occur if he attends school. And we should ask whether Terrell may have lost his sense of self-efficacy when faced with the new challenges of first grade.

Once it is clear how school refusal behavior is learned, behavioral therapies and more contemporary cognitive-behavioral therapies based on learning principles can be applied to reduce Terrell's anxiety, reinforce going to school, and change any distorted thinking (Pina et al., 2009).

with age in unique ways (Goldhaber, 2000). We imagine what Watson, Skinner, and Bandura would say about school refusal in Exploration Box 2.3.

**Strengths and Weaknesses**

Pavlov's and Watson's demonstrations of classical conditioning, Skinner's work on operant conditioning, and Bandura's modern social cognitive theory with its highlighting of observational learning have contributed immensely to the understanding of development and continue to be influential. Learning theories are precise and testable. Carefully controlled experiments have shown how people might learn everything from altruism to alcoholism. Moreover, learning principles operate across the life span and can be used to understand behavior at any age. Finally, learning theories have incredibly important applications; they have been the basis for many highly effective behavioral and cognitive behavioral techniques for optimizing development and treating developmental problems.

Still, behavioral learning theories, and even Bandura's more recent social cognitive theory, leave something to be desired as explanations of human development. For instance, it has been demonstrated that reinforcing 3-month-old infants with smiles and gentle rubs on the chin whenever they happen to make babbling sounds, such as "bahaba," causes them to babble more often than infants who receive the same social stimulation randomly, rather than only after each babbling sound they make (Weisberg, 1963). But does this mean that infants normally begin to babble because babbling is reinforced by their caregivers? Not necessarily. All normal infants, even deaf ones, babble around 4 months of age. Moreover, no matter what experiences are provided to newborns, they will not be maturationally ready to babble. We must suspect, then, that the maturation of the neural and muscular control required for babbling has more than a little to do with the onset of babbling during infancy.

This example highlights two criticisms of learning theories as theories of human development. First, learning theorists rarely demonstrate that learning is responsible for commonly observed developmental changes; they show through their experiments only that learning might have resulted in developmental change, as in the case of reinforcement increasing the frequency of babbling. Some critics wish that learning theorists would provide a fuller account of normal changes across the life span. Second, early learning theorists, and even Bandura, probably put too little emphasis on biological influences on development, such as genetic endowment and maturational processes, that affect how people respond to learning experiences. We may learn to fear snakes, for example. However, probably because snakes were a threat to our ancestors, we have evolved so that we are biologically prepared to be wary of these critters. Thus, 3- to 5-year-old children, whether they are already familiar with snakes or not, are quicker to find a target snake in the midst of several flowers than to find a target flower in the midst of several snakes (LeBue & DeLoache, 2008), and people learn to fear snakes more easily than they learn to fear bunnies or flowers (Ohman & Mineka, 2003). Today's learning theorists appreciate more than Watson and Skinner did that factors such as genetic endowment, previous learning, personality, and social context all affect how humans react to their learning experiences (Mineka & Zinbarg, 2006).

**Checking Mastery**

1. The Foxes try to control their teenage daughter's behavior by (a) giving her an allowance only if she does her weekly chores, (b) setting her weekend curfew earlier if she stays out later than she was supposed to the weekend before, and (c) allowing her to
get out of the distasteful task of cleaning the bathroom if she spends time with her grandmother. What specific consequences, using operant conditioning language, are illustrated by these three parenting strategies, and in each case, what effect do the parents hope to have on their daughter's behavior?

2. What are two main criticisms Albert Bandura might make of earlier behavioral learning theories?

Making Connections
1. Gert, age 78, fell and broke her hip a year ago and has become overly dependent on her daughter for help ever since, even though she can get around quite well now. How might (1) Freud or Erikson and (2) Watson, Skinner, or Bandura explain her old-age dependency?

2.5 Piaget: Cognitive Developmental Theory

After behavioral learning theories dominated the study of development in the 1950s and 1960s, many developmentalists began to look for a theory that was both more cognitive and more clearly developmental. They found what they wanted in the groundbreaking work of Jean Piaget. No theorist has contributed more to the understanding of children's minds than Piaget (1896–1980), a Swiss scholar who began to study children's intellectual development during the 1920s. This remarkable man developed quickly himself, publishing his first scientific work (a letter to the editor about an albino sparrow) at age 11. Eventually, Piaget blended his interest in zoology and the adaptation of animals to their environments with his interest in philosophy. He then devoted his career to the study of how humans acquire knowledge and use it to adapt to their world.

Piaget's lifelong interest in cognitive development emerged while he worked at the Alfred Binet laboratories in Paris on the first standardized IQ test. IQ tests estimate individuals' intelligence based on the number of questions they answer correctly. Piaget soon became interested in children's wrong answers and noticed that children of about the same age gave the same kinds of wrong answers. By questioning them to find out how they were thinking about the problems presented to them, he began to realize that young children do not simply know less than older children; instead, they think in a qualitatively different way. Eventually Piaget developed a theory to account for changes in thinking from infancy to adolescence, a theory we will explore more thoroughly in Chapter 7.

Constructivism

Influenced by his background in biology, Piaget (1950) viewed intelligence as a process that helps an organism adapt to its environment. The infant who grasps a cookie and brings it to her mouth is behaving adaptively, as is the adolescent who solves algebra problems or the mechanic who fixes cars. As humans mature, they acquire ever more complex cognitive structures, or organized patterns of thought or action, that aid them in adapting to their environments.

Piaget insisted that children are not born with innate ideas about reality, as some philosophers have claimed. Nor did he think children are simply filled with information by adults, as learning theorists believe. Piaget's position, called constructivism, was that children actively construct new understandings of the world based on their experiences. It is common for preschool children to invent their own ideas, saying that the sun is alive because it moves across the sky, that children get diseases if they tell lies or otherwise misbehave, or that babies are bought at the baby store and then put in their mommies' tummies.

How do children construct more accurate understandings of the world? By being curious and active explorers; watching what is going on around them, seeing what happens when they experiment on the objects they encounter, and recognizing instances in which their current understandings are inadequate to explain events. Children use their current understandings of the world to help them solve problems, but they also revise their understandings to make them better fit reality (Piaget, 1952). The interaction between biological maturation (most importantly, a developing brain) and experience (especially discrepancies between the child's understanding and reality) is responsible for the child's progress from one stage of cognitive development to a new, qualitatively different stage.
Stages of Cognitive Development

Piaget proposed four major periods of cognitive development: the sensorimotor stage (birth to age 2), the preoperational stage (ages 2 to 7), the concrete operations stage (ages 7 to 11), and the formal operations stage (ages 11 to 12 or older). These stages form what Piaget called an invariant sequence; that is, all children progress through the stages in the order they are listed without skipping stages or regressing to earlier stages. The ages given are only guidelines; different children progress at different rates.

The key features of each stage are summarized in Table 2.3. The core message is that humans of different ages think in qualitatively different ways (Inhelder & Piaget, 1958).

Infants in the sensorimotor stage deal with the world directly through their perceptions (senses) and actions (motor skills). They are unable to use symbols (gestures, images, or words representing real objects and events) to help them solve problems mentally. However, they learn a great deal about the world by exploring it, and they acquire tools for solving problems through their sensory and motor experiences.

The preschooler who has entered the preoperational stage of cognitive development has now developed the capacity for symbolic thought but is not yet capable of logical problem solving. The 4- or 5-year-old can use words as symbols to talk about a problem and can mentally imagine doing something before actually doing it. However, according to Piaget, preschool children are egocentric thinkers who have difficulty adopting perspectives other than their own and who may cling to incorrect ideas simply because they want them to be true. Lacking the tools of logical thought, preoperational children must also rely on their perceptions and as a result are easily fooled by appearances. Piaget demonstrated this by administering his famous conservation of liquid quantity task, in which a child is shown two short, wide glasses filled with equal amounts of water; sees the water poured from one of the squat glasses into a taller, thinner glass; and is then asked which glass has more water, the squat glass or the taller glass. Preschool children fail to demonstrate conservation, the recognition that certain properties of an object or substance do not change when its appearance is altered in some superficial way. Tricked by the greater height of the water in the tall, thin glass, young children ignore the width of the glass.

<table>
<thead>
<tr>
<th>Stage (Age Range)</th>
<th>Description</th>
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<tbody>
<tr>
<td>Sensorimotor (birth to 2 years)</td>
<td>Infants use their senses and motor actions to explore and understand the world. At the start they have only innate reflexes, but they develop increasingly “intelligent” actions. By the end, they are capable of symbolic thought using images or words and can therefore plan solutions to problems mentally.</td>
</tr>
<tr>
<td>Preoperational (2 to 7 years)</td>
<td>Preschoolers use their capacity for symbolic thought to develop language, engage in pretend play, and solve problems. But their thinking is not yet logical; they are egocentric (unable to take others’ perspectives) and are easily fooled by perceptions, failing conservation problems because they cannot rely on logical operations.</td>
</tr>
<tr>
<td>Concrete operations (7 to 11 years)</td>
<td>School-age children acquire concrete logical operations that allow them to mentally classify, add, and otherwise act on concrete objects in their heads. They can solve practical, real-world problems through a trial-and-error approach but have difficulty with hypothetical and abstract problems.</td>
</tr>
<tr>
<td>Formal operations (11 to 12 years and older)</td>
<td>Adolescents can think about abstract concepts and purely hypothetical possibilities and can trace the long-range consequences of possible actions. With age and experience, they can form hypotheses and systematically test them using the scientific method.</td>
</tr>
</tbody>
</table>

Note: Piaget’s theory is elaborated upon in Chapter 7.
Cognition is an important influence on behavior; we need to understand how Terrell is thinking about both his home life and school.

We should assess his stage of cognitive development. Especially if he has not yet made the transition from the preoperational stage to the concrete-operational stage, his anxiety may be rooted in a faulty cause-effect analysis or a misunderstanding because he has not yet mastered logical operations. He may, for example, believe the serial murderer or terrorist he saw on TV will kill his mother next or that the school shooting that happened in another state will happen at his school. His egocentrism could make it even more likely that he would come to believe that these scary events will affect him.

and conclude that the amount of water had magically increased. Failing to appreciate that the process of pouring is reversible, they claim that the water would spill all over if it were poured back into its original glass.

School-age children who have advanced to the concrete operations stage are more logical than preschoolers. They use a trial-and-error approach to problem solving and do well on problems that involve thinking about concrete objects. These children can perform many important logical actions, or operations, in their heads on concrete objects (hence, the term concrete operations, and Piaget’s description of the preschool child as preoperational). For example, they can mentally categorize or add and subtract objects, and they can mentally coordinate the height and width of glasses in order to solve conservation problems correctly. They can also draw sound, general conclusions based on their concrete or specific observations. However, they have difficulty dealing with abstract and hypothetical problems.

Adolescents who reach the formal operations stage are able to think more abstractly and hypothetically than school-age children. They can define justice abstractly, in terms of fairness, rather than concretely, in terms of the cop on the corner or the judge in the courtroom. They can formulate hypotheses or predictions in their heads, plan how to systematically test their ideas experimentally, and imagine the consequences of their tests. It often takes some years before adolescents can adopt a thoroughly systematic and scientific method of solving problems and can think logically about the implications of purely hypothetical ideas. Then they may be able to devise grand theories about what is wrong with their parents or the federal government or analyze the long-term consequences of legalizing drugs.

Obviously, children’s cognitive capacities change dramatically between infancy and adolescence as they progress through Piaget’s four stages of cognitive development. Infants, young children, school-age children, and adolescents and adults simply do not think the same way. What, then, do you suppose Piaget would have said about school refusal? Exploration Box 2.4 sketches his possible thoughts. Whereas Freud and Eriksen might have looked to personality disorders or emotional conflicts for explanations, and Skinner and Bandura would have looked to specific learning experiences, Piaget probably would have hypothesized that cognitive immaturity, lack of knowledge, and faulty beliefs underlie many developmental problems.

**Strengths and Weaknesses**

Like Freud, Piaget was a true pioneer whose work has left a deep and lasting imprint on thinking about human development. You will see his influence throughout this text, for the mind that “constructs” understanding of the physical world also comes, with age, to understand sex differences, moral values, emotions, death, and a range of other important aspects of the human experience. Piaget’s cognitive developmental perspective dominated the study of child development for about 3 decades, until the 1980s. Most developmentalists today continue to accept Piaget’s basic beliefs that thinking changes in qualitative ways during childhood, that children are active in their own development, and that development occurs through an interaction of nature and nurture. Piaget’s description of intellectual development has been tested and has been largely, although not wholly, supported. Finally, Piaget’s ideas have influenced education and child rearing by encouraging teachers and parents to pitch their educational programs to children’s levels of understanding and to stimulate children to discover new concepts through their own direct grappling with problems.

Still, Piaget has had his share of criticism (Lourenço & Machado, 1996; also see Chapter 7). For example, critics fault him for saying too little about the influences of motivation and emotion on thought processes. They also question whether Piaget’s stages really hang together as coherent and general modes of thinking that can be applied to a variety of types of problems; research suggests that the thinking skills needed to solve different types of problems are acquired at different rates. Critics also conclude that Piaget underestimated the cognitive abilities of young children; recent studies suggest that children master some Piagetian concepts earlier than Piaget believed they did, although defenders of Piaget would question whether some of the simplified tasks used by later researchers really demonstrate that young children have fully mastered the concepts tested (Desrochers, 2008). Piaget is also charged with putting too little emphasis on the role of parents and other more knowledgeable people in nurturing cognitive development. And critics challenge the idea that all humans in every culture develop through the same stages toward the same endpoints. As a result, developmentalists began to seek theoretical perspectives that allowed more diversity in the pathways that cognitive development...
could take while retaining Piaget’s theme that nature and nurture interact to produce developmental change.

Other Perspectives on Cognitive Development

Two important approaches to cognitive development that challenged some of Piaget’s thinking are Vygotsky’s sociocultural perspective (discussed in Chapter 7) and the information-processing approach (discussed in Chapter 8). We will briefly discuss them here to call attention to weaknesses in Piaget’s cognitive developmental theory.

The sociocultural perspective on cognitive development offered by a contemporary of Piaget, Russian psychologist Lev Vygotsky, has become quite influential in recent years. Disagreeing with Piaget’s notion of universal stages of cognitive development, Vygotsky maintained that cognitive development is shaped by the sociocultural context in which it occurs and grows out of children’s interactions with members of their culture (Vygotsky, 1962, 1978). Each culture provides its members with certain tools of thought—most notably a language, but also tools such as pencils, art media, mathematical systems, and computers. The ways in which people in a particular culture approach and solve problems are passed from generation to generation through oral and written communication. Hence culture, especially as it is embodied in language, shapes thought. As a result, cognitive development is not the same universally; it varies across social and historical contexts. And whereas Piaget tended to see children as independent explorers, Vygotsky saw them as social beings who develop their minds through guided participation in culturally important activities in which parents, teachers, and other knowledgeable members of their culture provide “scaffolding” or support that facilitates learning.

Other challenges to Piaget came from scholars who saw a need to look more closely at the processes involved in thinking and factors affecting those processes. The information-processing approach to cognition, which became the dominant perspective starting in the 1980s, likens the human mind to a computer with hardware and software and examines the fundamental mental processes, such as attention, memory, decision making, and the like, involved in performing cognitive tasks. Development involves changes in the capacity and speed of the information-processing machine we call the brain, in the strategies used to process information, and in the information stored in memory. This approach is the focus of Chapter 8 and has guided research not only on attention, memory, and problem solving but also on gender-role development, social cognition, and many other topics addressed in this book.

Making Connections

1. Although we will look at the implications of Piaget’s theory for education more closely in Chapter 7, based on what you know so far, what recommendations would Piaget make to teachers of (a) 4-year-olds, (b) 9-year-olds, and (c) 14-year-olds to help them recognize the strengths and weaknesses of children at these ages?

2.6 Systems Theories

Systems theories of development (some are called contextual theories because they emphasize interactions between humans and the contexts in which they develop; some are called dynamic systems theories) generally claim that changes over the life span arise from ongoing transactions in which a changing organism and a changing environment affect one another (see, for example, Fogel, King, & Shanker, 2008; Gotthlieb, Wahlsten, & Lickliter, 2006; Lerner, 2006). The individual and the physical and social contexts with which he interacts are inseparable parts of a larger system in which everything affects everything else. Development can take a variety of paths depending on the complex interplay of multiple influences.

Urie Bronfenbrenner’s biocological model, introduced in Chapter 1, illustrates a systems perspective on development: the individual, with her biologically based characteristics, is embedded in and interacts with four environmental systems over time. In Chapter 5, you will also encounter Esther Thelen’s dynamic systems theory of motor development. Here, we highlight another theorist who emphasized that development grows out of a system of interacting influences, Gilbert Gottlieb (1929–2006), a developmental psychobiologist. Gottlieb believed that human development takes place in the context of our evolutionary history as a species and arises from ongoing interactions between biological and environmental influences. Although Bronfenbrenner started out interested in the environment and increasingly realized that biological influences on development were equally important, Gottlieb started out as a biologist and increasingly became convinced of the importance of environmental influences on what biologists had long believed were genetically influenced or innate phenomena.

Evolutionary Theory and Ethology

Gilbert Gottlieb’s perspective grew out of earlier work looking at animal and human development in the context of evolutionary theory (Bjorklund & Pellegrini, 2002; Burgess & MacDonald, 2005; Gottlieb et al., 2006). In his tremendously influential theory of evolution, Charles Darwin (1859) maintained that genes that aid their bearers in adapting to their environment will be...
Ethologists suggest that humans, like other species, display species-specific behaviors that are the products of evolution and assist them in adapting to their environment. In Chapter 14, for example, we will encounter attachment theory, an influential perspective rooted in both psychoanalytic theory and ethological theory. Attachment theorists view the formation of close relationships between human infants and their caregivers, like the tendency of young ducks to follow their mothers, as evolved behavior that increases the odds that the young will survive. We will also discuss throughout this book contributions of modern evolutionary psychology, the application of evolutionary theory to understanding why humans think and behave as they do (Bjorklund & Pellegrini, 2002; Buss, 2008; Ellis & Bjorklund, 2005).

Gottlieb’s Epigenetic Psychobiological Systems Perspective

While ethologists were examining the evolutionary roots of human behavior, developmental psychobiologist Gilbert Gottlieb was studying how products of evolution such as genes and hormones interact with environmental factors to guide the individual’s development (1992, 2000, 2002; Gottlieb & Halpern, 2008). According to Gottlieb’s epigenetic psychobiological systems perspective, development is the product of interacting biological and environmental forces that form a larger system. It is possible to focus on the interplay of nature and nurture both at the level of the species interacting with its environment over the course of evolution and at the level of the individual, with his unique genetic makeup, interacting with his unique environment over the course of a lifetime (Li, 2003).
Species Change

The starting point in the epigenetic psychobiological systems perspective is recognition that evolution has endowed us with a human genetic makeup. We do not start out as tabulae rasa. Rather, we are predisposed to develop in certain directions rather than in others—for example, to develop so that we master language, use tools, display guilt, act aggressively, mate and bear children, and do the other things that humans do (Pinker, 2002). Each person’s development takes place in the context of our evolutionary history as a species. We share many genes with our fellow humans because those genes enabled our ancestors to adapt to their environments.

However, genes and environment interact because humans actively and deliberately change their environments by farming, urbanizing, polluting, fighting infectious diseases, and so on. As we change our environments, through cultural evolution, we sometimes change the course of biological evolution. How? Because new environments may make different genes more critical to survival than earlier environments did. Consider that genes associated with a high tolerance for lactose in milk have become far more prevalent in human populations that have engaged in dairy farming than in other human populations—for example, more prevalent in Europe than in East Asia (Aoki, 1986; Voight et al., 2006). Over time, in the context of plenty of milk to drink, people with these gene variants were apparently more likely to survive than people without them. So, genes and environment interact at the species level, and both biological and cultural evolution contribute to change over time in the human species.

Epigenesis

Turning to change at the individual level, Gottlieb maintained that genes do not dictate how development will go; they only participate—along with environmental influences—in making certain developmental outcomes more probable than others. What happens in development depends on the all-important process of epigenesis (meaning “over and above” genes). Through epigenesis, nature and nurture (genes and environment) co-act to bring forth particular developmental outcomes—sometimes, surprising outcomes that are not easily predicted (see Spencer et al., 2009). In describing the epigenetic process, Gottlieb highlighted mutual influences over time involving (1) the activity of genes, which turn on and off at different points during development; (2) the activity of neurons; (3) the organism’s behavior; and (4) environmental influences of all kinds—all part of a larger system, as shown in Figure 2.5.

Gottlieb accused biologists of the past of wrongly claiming that genes dictate what happens in development in a one-directional and deterministic way and that genetic and physiological influences are therefore more causally important than environmental ones. We need to appreciate, he said, that each of his four levels is important and must be understood in its own right. Behavior cannot be explained, he argued, by reducing it to simpler components such as genes or neurons. In addition, we need to appreciate that behavior and environment influence the activity of genes and the functioning of the brain, just as genes and the brain influence behavior and the environment. To illustrate this point using Gottlieb’s terminology, consider that stimulation from the environment, gained partly through the infant’s exploratory behavior, not only produces neural activity and changes the brain but also affects the activity of genes, which in turn influence the formation and functioning of the neural networks necessary for further development and behavior (Johnston & Edwards, 2002).

Gottlieb made his case for interacting levels of influence by demonstrating that behavior that most biologists assumed was innate or instinctive—etched in the genetic code of all members of a species in the course of evolution and automatically displayed—may or may not occur depending on the organism’s early experience. He showed, for example, that the tendency of young ducks to prefer their mothers’ vocal calls to those of other birds such as chickens is not as automatic as you might guess. Duckling embryos that were exposed to chicken calls before they hatched and then were prevented from vocalizing at birth, and therefore had no experience hearing ducklike calls, actually came to prefer the call of a chicken to that of a mallard duck (Gottlieb, 1991). This and other studies demonstrated that hearing duck vocalizations, whether generated by ducklings’ mothers or by themselves, was necessary for ducklings to prefer the call of a mother duck.

Exciting new discoveries in genetic research, to be explored further in Chapter 3, are shedding further light on epigenesis.
First we should place Terrell’s behavior in its evolutionary context. There are good reasons why humans might have evolved to be anxious in unfamiliar situations.

We must consider the possible influences of each of the following factors on each of the others: (1) genes (Might he have a genetic predisposition to be anxious?), (2) neural activity (has he been experiencing overarousal in response to a noisy, chaotic, stress-inducing classroom?), (3) behavior (Does he have immature cognitive or coping skills?), and (4) the environment (Could a gruff teacher, a bully, or an overprotective parent be contributing to his problem?) What about cultural influences? School refusal has been increasing in Japan as mothers and teachers increase pressure on children to succeed in school and as traditional family life in Japan breaks down (Kameguchi & Murphy-Shigematsu, 2001; Kameguchi, 2004). Characteristics of the school and the family environment should also be considered (C. A. Kearney, 2008).

In short, one must analyze the whole person—environment system over time, expecting reciprocal influences among multiple factors—not one simple cause.

and ways in which environment influences can alter the activity of genes. It has become clear that the biochemical environment of a cell, as influenced by factors such as nutrition and stress and even nurturing care early in life, can affect whether or not particular genes in that cell are expressed, or transcribed into RNA, so that they can guide the production of proteins and in turn influence the individual’s emerging traits. As we will see in Chapter 3, this research is suggesting that what ultimately matters in development may not be what genes a person has but which of them are expressed or activated—and that environmental factors have a lot to do with this (Champagne & Mashoodh, 2009; also see Chapter 3).

The message is clear: genes do not determine anything (Gottlieb et al., 2006). Even seemingly instinctive, inborn patterns of behavior will not emerge unless the individual has both normal genes and normal early experiences. And it is rather silly, Gottlieb believed, to try to figure out how much of an individual’s traits and behavior is caused by nature and how much is caused by nurture when genes and environment “coact” and are therefore inseparable and equally important. The nature–nurture issue simply vanishes from Gottlieb’s perspective (Spencer et al., 2009).

In sum, the epigenetic psychobiological systems perspective holds that the development of the individual arises from complex interactions over time among genetic, neural, behavioral, and environmental influences operating as a system. Because genes have to be turned on with the help of environmental input in order to influence development, and even then only make particular developmental outcomes more or less probable, development is not genetically predetermined. Indeed, we cannot predict how the developmental story will end until we see what emerges from epigenesis, the long history of interactions among the multiple influences pictured in Figure 2.5. Interestingly, then, Urie Bronfenbrenner, who initially emphasized cultural influences on development, and Gottlieb, who initially emphasized biological influences, ended up in close agreement that it is the interactions among biological and environmental forces that really count.

In Exploration Box 2.5, we imagine what Gottlieb might have thought about contributors to school refusal.

**Strengths and Weaknesses**

Systems theories of development are complex, but that is because life-span human development is complex. We can applaud Gottlieb, Bronfenbrenner, and like-minded theorists for conceptualizing development as the often unpredictable product of biological and environmental forces interacting within a complex system and challenging us to look closely at ongoing transactions between the individual and his or her environment.

Yet systems theories can be faulted for not yet providing a clear picture of the course of human development and for being only partially formulated and tested at this point. Indeed, an even more serious criticism can be made: systems perspectives may never provide any coherent developmental theory. Why? If we take seriously the idea that development can take a range of paths depending on the range of interacting influences both within and outside the person, how can we ever state generalizations about development that will hold up for most people? If change over a lifetime depends on the ongoing transactions between a unique person and a unique environment, is each life span unique? The problem is this: “For the contextual or systems theorist, often the only generalization that holds is, ‘It depends.’” (Goldhaber, 2000, p. 33).

Human development may be more predictable than Gottlieb’s theory implies when children with normal human biological endowments develop in normal human environments and, as a result, tend to change in similar directions at similar ages (MacDonald & Hershberger, 2005). Perhaps it is still possible to see humans as moving in orderly directions in many aspects of their development while also appreciating diversity and individuality in development. Perhaps it is possible to view developmental attainments such as formal-operational thinking not as
inevitable, universal achievements but as attainments that are more or less probable depending on the action of the individual’s genetic endowment and life experiences.

Checking Mastery

1. How might an ethologist go about studying influences on cooperation among preschool children?

2. Using one phrase or term each, describe (a) the relationship between nature and nurture in Gottlieb’s epigenetic psychobiological systems perspective and (b) the way in which the two combine to influence development.

Making Connections

1. Speaking from the perspective of Gilbert Gottlieb, criticize two of the other theorists discussed in this chapter.

2.7 Theories in Perspective

That completes this survey of some grand and emerging theories of human development. Just as developmental scientists need theories to guide their work, every parent, teacher, human services professional, and observer of humans is guided by some set of basic assumptions about how humans develop and why they develop as they do. We hope that you will think about your own assumptions about human development by comparing the answers you gave to the questions in Engagement Box 2.1 at the start of the chapter with the summary information in Table 2.4 and seeing which theorists’ views are most compatible with your own.

Theories of human development can be grouped into even grander categories based on the broad assumptions they make (Goldhaber, 2006; P. H. Miller, 2010; Pepper, 1942; Reese & Overton, 1970). Stage theorists such as Freud, Erikson, and Piaget form one broad group and have much in common. They believe that development is guided in certain universal directions by biological-maturational forces within the individual. Humans unfold—much as a rose unfolds from its beginnings as a seed—according to a master plan carried in their genes, assuming that they grow up in a reasonably normal environment. They evolve through distinct or discontinuous stages that are universal and lead to the same final state of maturity. Parents who subscribe to the stage theory perspective on development, especially Piaget’s, are likely to see themselves as supporters of development. They would tend to trust their children’s biologically based tendencies to seek the learning opportunities they most need in order to develop their own minds. They would respond to their children’s changing needs and interests, but they would not feel compelled to structure all their children’s learning experiences. This position is like the philosophy of education incorporated in Montessori schools (Lillard, 2005).

By contrast, learning theorists such as Watson, Skinner, and Bandura emphasize the role of environment more than the role of biology in development. Parents who subscribe to a learning theory model of human development are not likely to trust genetically guided maturational forces to ensure that their children develop in healthy directions. Such parents are likely to act as trainers, assuming that their children will not develop properly (or at least will never be Harvard material) unless they are systematically exposed to particular learning experiences and shaped in positive directions.

Finally, systems and contextual theorists view biology and environment as inseparable components of a larger system. Humans contribute actively to the developmental process (as stage theorists such as Piaget maintain), but environment is also an active participant in the developmental drama (as learning theorists maintain). The potential exists for both qualitative (stagelike) change and quantitative change. Development can proceed along many paths depending on the intricate interplay of nature and nurture. Parents who adopt a systems theory of development are likely to appreciate that their children are influencing them just as much as they are influencing their children. They are likely to view themselves as partners with their children in the developmental process.

Our understanding of human development has changed, and will continue to change, as one prevailing view gives way to another. From the beginning of the study of human development at the turn of the 20th century through the heyday of Freud’s psychoanalytic theory, a stage theory perspective prevailed, emphasizing biological forces in development (Parke et al., 1994). In the 1950s and 1960s, learning theories came to the fore, and attention shifted from biology toward environment and toward the view that children are blank tablets to be written on. Then, with the rising influence of cognitive psychology and Piaget’s theory of cognitive development in the late 1960s and 1970s, a stage theory model emphasizing the interaction of nature and nurture gained prominence. Finally, in the 1980s and 1990s, we gained a fuller appreciation of both biological-genetic and cultural-historical influences on development.

Where are we today? The broad perspective on key developmental issues taken by systems theorists such as Bronfenbrenner and Gottlieb is the perspective that most 21st-century developmentalists have adopted. The field has moved beyond the extreme, black-or-white positions taken by many of its pioneers. We now appreciate that humans, although not tabulae rasae, have evolved so that they have the potential to develop in both good and bad directions; that human development is always the product of nature and nurture; that both humans and their environments are active in the developmental process; that development is both continuous and discontinuous in form; and that development has both universal aspects and aspects particular to certain cultures, times, and individuals. In short, the assumptions and theories that guide the study of human development have become increasingly complex as the incredible complexity of human development has become more apparent.

2.7 THEORIES IN PERSPECTIVE 55
TABLE 2.4 COMPARE YOURSELF WITH THE THEORISTS

In Engagement Box 2.1, you were asked to indicate your position on basic issues in human development by answering five questions. If you transcribe your answers (a, b, c, d, or e) in the appropriate boxes in the first column below, you can compare your stands with those of the theorists described in this chapter—and review the theories. With whom do you seem to agree the most?

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>MESSAGE</td>
<td>Biologically based sexual instincts motivate behavior and steer development through five psychosexual stages, oral to genital</td>
<td>Humans progress through eight psychosocial conflicts, from trust vs. mistrust to integrity vs. despair</td>
<td>Development is the product of learning from the consequences of one's behavior through operant conditioning</td>
<td></td>
<td>Development is the product of cognition, as illustrated by observational learning and human agency</td>
<td>Development proceeds through four stages of cognitive development, from sensorimotor to formal operations</td>
<td>Development takes many directions depending on transactions between a changing person and a changing environment</td>
</tr>
<tr>
<td>NATURE—NURTURE</td>
<td>Question 1</td>
<td>b. More nature (biology drives development; early experience in the family influences it, too)</td>
<td>c. Nature and nurture equally</td>
<td>e. Mostly nurture</td>
<td>d. More nurture</td>
<td>b. More nature (maturity interacting with experience guides all through the same stages)</td>
<td>c. Nature and nurture equally</td>
</tr>
<tr>
<td>GOODNESS—BADNESS OF HUMAN NATURE</td>
<td>Question 2</td>
<td>a. Bad (selfish, aggressive urges)</td>
<td>d. Good (capable of growth)</td>
<td>b. Neither good nor bad</td>
<td>b. Neither good nor bad</td>
<td>a. Good (curious)</td>
<td>c. Both good and bad (people have biologically based predispositions toward both)</td>
</tr>
<tr>
<td>ACTIVITY—PASSIVITY</td>
<td>Question 3</td>
<td>b. Passive (humans are influenced by forces beyond their control)</td>
<td>a. Active</td>
<td>b. Passive (humans are shaped by environment)</td>
<td>a. Active (humans influence their environments)</td>
<td>a. Active</td>
<td>a. Active</td>
</tr>
<tr>
<td>CONTINUITY—DISCONTINUITY</td>
<td>Question 4</td>
<td>a. Discontinuous (stalaglike)</td>
<td>a. Discontinuous (stalaglike)</td>
<td>c. Continuous (habits gradually increase or decrease in strength)</td>
<td>a. Discontinuous (stalaglike)</td>
<td>b. Both continuous and discontinuous</td>
<td></td>
</tr>
<tr>
<td>UNIVERSALITY—CONTEXT SPECIFICITY</td>
<td>Question 5</td>
<td>a. Universal</td>
<td>a. Universal (although stages may be expressed differently in different cultures)</td>
<td>b. Context specific (direction of development depends on experiences)</td>
<td>b. Context specific</td>
<td>a. Universal</td>
<td>b. Context specific</td>
</tr>
</tbody>
</table>
As we have emphasized, a main function of theories in any science is to guide research. Thus, Freud stimulated researchers to study inner personality conflicts, Skinner inspired them to analyze how behavior changes when its consequences change, and Piaget inspired them to explore children’s modes of thinking. Different theories make different assumptions, stimulate different kinds of research, and yield different kinds of facts about development and explanations of them, as you will see throughout this book. Theorists who view the world through different lenses not only study different things in different ways but are likely to disagree even when the same “facts” are set before them, because they will interpret those facts differently (P. H. Miller, 2010). This is the nature of science.

Theories also guide practice. As you have seen, each theory of human development represents a particular way of defining developmental issues and problems. Often, how you define a problem determines how you attempt to solve it. To illustrate, consider unwanted teenage pregnancy. How do you think major developmental theorists would explain it, and how do you think each would go about trying to reduce the rate of teenage pregnancy in our society? Application Box 2.1 offers some ideas and will serve, too, as a review of the theories.

You need not choose one favored developmental theory and reject others. Because different theories often highlight different aspects of development, one may be more relevant to a particular issue or to a particular age group than another. Many developmentalists today are theoretical eclectics who rely on many theories, recognizing that no major theory of human development can explain everything but that each has something to contribute to our understanding.

Checking Mastery

1. How have stands on the nature-nurture issue changed during the 20th century from (a) Freud to (b) Skinner to (c) Gottlieb?
2. Of the theorists discussed in this chapter, who is the only one with something specific to say about development during adulthood?

Making Connections

1. You have decided to become an eclectic and to take from each of the four major perspectives in this chapter (psychoanalytic, learning, cognitive developmental, and systems theory) only one truly great insight into human development. What four ideas would you choose, and why?
2. Think about the development of cats and the development of humans. Which of the theories in this chapter are most and least applicable to both species—and why?
Using Developmental Theories to Prevent Teenage Pregnancy

What approaches might you consider to reduce the rate of unwanted pregnancy at the high school you attended?

Although teenage pregnancy and birth rates have decreased since 1990, when more than 1 in 10 females aged 15 to 19 became pregnant each year and more than half gave birth (Guttmacher Institute, 2006), they have been creeping up again recently and are much higher in the United States than in other Western nations (Sullivan/Anderson, 2009). Valued in many traditional societies, pregnancy during the teen years is generally discouraged in modern societies like ours. Although pregnancy sometimes mobilizes a young woman's support network and helps her focus on school and work, too often it interrupts her education, limits her job prospects, and leaves her living in poverty and raising a child by herself (Furstenberg, 2005; Hoffman & Maynard, 2008).

Why are there so many unplanned teenage pregnancies, and what might we as a society do to prevent them? Think about it, and then compare your analyses to those of our main developmental theorists.

**Psychoanalytic Theory**
Teenagers get pregnant because they experience intense emotional conflicts during the genital stage of psychosexual development. Freud might say. Their new sexual urges are anxiety-provoking and may reawaken the sexual conflicts of the phallic stage. Teenagers who engage in risky sex may not have strong enough egos (to analyze the consequences) or superegos (to arouse guilt) to keep their selfish ids in check.

Erikson might also wonder about unresolved conflicts from earlier stages of development but might attribute unwanted teen pregnancy primarily to the adolescent psychosocial conflict of identity versus role confusion. In Erikson's view, adolescents seek a sense of identity by experimenting with different roles and behaviors to see what suits them; they try drugs, dye their hair orange, join radical groups, change majors every semester, and yes, have sex. Some adolescents may also try to find an easy resolution to their role confusion by prematurely latching onto an identity as the other's boyfriend or girlfriend rather than doing the hard work of experimenting to find out who they are (Erikson, 1968).

Psychoanalytic theorists tend to locate the causes of problems within the person. They would want to identify and target for intervention teenagers who are experiencing especially difficult psychic conflicts. High-risk teenagers might then be treated through psychoanalysis aimed at helping them resolve their conflicts. Although the psychoanalytic approach
might work with teenagers who are psychologically disturbed, most teenagers who become pregnant are not (Farber, 2003).

**Piaget's Cognitive Developmental Theory**
Cognitive limitations, failure to anticipate consequences, and lack of knowledge may all influence sexual decision making, Piaget would say. Adolescents who are not yet solidly into the stage of formal operations may not be able to think through the long-range consequences of their sexual behavior. And misconceptions (pun intended!) about sex and contraception are rampant among adolescents (Aarons & Jenkins, 2002). In one study of 13- to 15-year-olds, more than 60% did not know that urinating after sex will not prevent pregnancy (Carrera et al, 2000).

According to Jean Piaget's cognitive developmental perspective, the solution to teenage pregnancy would be improved sex education programs—programs that correct misconceptions, provide teenagers with accurate information and strategies for avoiding unwanted and unprotected sex, and help even teens who have not yet reached the formal operations stage to think through the consequences of their sexual decisions. Carefully designed and comprehensive sex education programs can indeed delay initiation of sex, decrease number of sexual partners, and increase contraception use (Franklin & Corcoran, 2000; Kirby & Laris, 2009). However, education alone is not often enough, so perhaps we need to consider solutions that locate the causes of teenage pregnancy in the environment rather than in the individual's psychological weaknesses or cognitive deficiencies.

**Learning Theorists**
Through classical conditioning, John Watson might argue, teenagers may learn to associate the very presence of a partner with the pleasurable sensations associated with sexual activity. And, as B. F. Skinner might observe, teenagers probably have unprotected sex because having sex is reinforcing, whereas using contraceptives is not. Finally, Albert Bandura might note that if a male believes that using a condom will decrease his sexual enjoyment, his belief may decrease the chances that he and his partner will use protection. Bandura would also emphasize observational learning, noting that teens who are exposed to a lot of sexually explicit material on television and in other media are more sexually active than other teens (Brown et al., 2006) and more prone to be involved in pregnancies (Chandra et al., 2008).

Learning theorists believe that changing the environment will change the person. In support of this belief, it appears that one effective approach to teenage pregnancy prevention is to make contraceptives readily available to teens through health clinics and to teach them how to use them (Franklin & Corcoran, 2000). This approach reflects a Skinnerian philosophy of encouraging desired behavior by making it more reinforcing and less punishing.

Albert Bandura's social cognitive theory suggests that it might also help to provide teenagers with more role models of responsible sexual behavior and fewer examples of irresponsible sexual behavior to help them learn that the consequences of safe sex are likely to be more desirable than the consequences of early parenthood (Unger, Molina, & Teran, 2000).

**Gottlieb's Epigenetic Psychobiological Systems Theory**
Finally, Gilbert Gottlieb would first place behavior in its evolutionary context: sexual behavior is adaptive, after all; it has allowed humans to reproduce themselves for centuries. He would also look for multiple, interacting causes, analyzing the ongoing interactions between developing adolescents (the activity of their genes, their neural activity, and their behavior are all rapidly changing) and the changing world in which they are developing (their physical, social, and cultural environment). He would expect biocultural influences throughout the developmental system; for example, he would not be surprised to learn that just as poor parent and peer relations can increase the likelihood of risky sexual behavior, risky sexual behavior can negatively affect parent and peer relations (Hennrich et al., 2006)

Gottlieb might also ask whether teenagers' cultural environment influences the way that they consider teenage pregnancy. It is a normal step in development or a social problem, in some cultures, including some lower-income subcultures in the United States, early motherhood is viewed as adaptive and teenage pregnancy is common (Davies et al., 2003; Farber, 2003). He might also consider whether the school environment engages or alienates students and whether a teenager's family environment is supportive or stressful. Mainly, he would recognize that there is not one cause of teenage pregnancy; there is a whole system of interacting causes.

Systems theorists such as Gilbert Gottlieb would recommend comprehensive programs that attempt to change both the person and the environment—or really, to change the whole system of interacting influences on development (Gottlieb & Haipern, 2008). Quick fixes are unlikely to work. The solution may require more than changing sexual behavior; it may need to address teenagers' broader socioemotional needs (Allen, Seitz, & Apfel, 2007). The solution may also require changing the social context—for example, changing how adolescents and their parents, peers, and partners interact and enabling youth in all segments of society to perceive opportunities to succeed in life if they postpone parenthood and pursue their educations (Farber, 2003).

You can see, then, that the theoretical position one takes has a profound effect on how one attempts to optimize development. In all likelihood, multiple approaches will be needed to address complex problems such as unwanted teenage pregnancy—and to achieve the larger goal of understanding human development.
Chapter Summary

2.1. Developmental Theories and the Issues They Raise
- Theories organize and explain the facts of human development and should be internally consistent, falsifiable, and supported by data.
- The five major issues in the study of human development are the goodness and badness of human nature, nature and nurture, activity and passivity, continuity and discontinuity, and universality and context specificity.

2.2. Freud: Psychoanalytic Theory
- In Freud's psychoanalytic theory, humans are irrational beings primarily driven by inborn biological instincts of which they are largely unconscious. The personality is partitioned into the id, ego, and superego (which emerge in that order).
- Libido is rechanneled across five psychosexual stages—oral, anal, phallic, latent, and genital. Each stage involves psychic conflicts that can result in fixation at a stage, create the need for defense mechanisms such as repression and regression, and can have lasting effects on personality.
- Biological needs drive development, but parents affect a child's success in dealing with conflicts and can contribute to emotional problems, especially if they are overly punitive.
- Although Freud called attention to the unconscious, to early experiences in the family, and to emotional development, his theory is not easily falsifiable and many of its specifics lack support.

2.3. Erikson: Neo-Freudian Psychoanalytic Theory
- Compared with Freud, neo-Freudian Erik Erikson emphasized biological urges less and social influences more; emphasized id less and ego more; held a more optimistic view of human nature and people's ability to overcome early problems; and theorized about the whole life span.
- According to Erikson, development proceeds through eight psychosocial stages involving issues of trust, autonomy, initiative, industry, identity, intimacy, generativity, and integrity. Parents, peers, and the larger culture influence how conflicts are resolved.
- The theories of both Freud and Erikson have been influential but are difficult to test and tend to describe development better than they explain it.

2.4. Learning Theories
- Learning theorists maintain that humans change gradually and can develop in many directions depending on environmental influences.
- Behaviorist Watson focused on the role of Pavlov's classical conditioning in the learning of emotional responses, and Skinner highlighted operant conditioning and the roles of reinforcement in strengthening behavior and punishment in weakening behavior.
- Bandura's social cognitive theory emphasizes the importance of cognitive processes in learning; observational learning, as well as human agency, including self-efficacy, and reciprocal determinism among person, behavior, and environment.
- Learning theories are well supported and applicable across the life span, but they do not necessarily explain normal developmental changes and underemphasize biological influences on development.

2.5. Piaget: Cognitive Developmental Theory
- Piaget's cognitive developmental perspective holds that intelligence is an adaptive process through which humans create new understandings of the world through their active interactions with it (constructivism).
- The interaction of biological maturation and experience causes children to progress through four universal, invariant, and qualitatively different stages of thinking: sensorimotor, preoperational, concrete operational, and formal operational.
- Despite Piaget's immense influence, developmentalists question whether development is as stagelike and universal as he claimed.

2.6. Systems Theories
- Systems theories view development as the product of ongoing transactions and mutual influence between the individual and his environment.
- Ethology asks how species-specific behaviors may have evolved, and Gottlieb's epigenetic psychobiological systems perspective highlights mutual influences among genes, neural activity, behavior, and environment—both over the course of evolution and during the epigenetic process.
- Systems theories are incomplete, however, and do not provide a coherent picture of human development.

2.7. Theories in Perspective
- During the 20th century, stage theories such as Freud's emphasizing biological forces gave way to learning theories emphasizing environmental influences and then to Piaget's cognitive developmental theory, which emphasizes the interaction of nature and nurture.
- Piaget's concept of universal stages has given way to more complex systems theories such as those of Brackenbrenner and Gottlieb, who expect developmental outcomes to be more or less probable depending on multiple factors.
- Theories influence both research and practice, and many developmentalists are theoretical eclectics.

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Jean Piaget Society
The Jean Piaget Society provides biographical information, links to other Piaget resources on the web, and lists of suggested readings for those who would like to learn more about Piaget's research and writings. To access, see "web links" in Psychology CourseMate at www.cengagebrain.com

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A collection of links to resources related to Sigmund Freud and his works. The list includes links to libraries, museums, and biographical materials. To access, see "web links" in Psychology CourseMate at www.cengagebrain.com

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