CHAPTER 1

Themes and Theories

*A**ndrew had spent an enormous amount of time carefully aligning the beams, braces, and other equipment at just the right locations on his building project. He was fascinated by how he could make the crane swing up and down and how it would lift and drop the small metal pieces with the magnet. But six-year-old Andrew was so absorbed in his play that he failed to notice his one-year-old sister, Heather, rapidly crawling toward these shiny new objects. Fourteen-year-old Benjamin, the oldest member of the family, placed in charge of watching both Andrew and Heather as their parents prepared dinner in the kitchen, had also become distracted by the challenging new computer game he had just borrowed from his friend.*

As she crawled within reach of Andrew's construction set, Heather grabbed the truck on which the crane was mounted and pulled it sharply, pitching beams, equipment, and everything else into a chaotic heap. For one brief instant, Andrew froze in horror as he observed the devastation his little sister had just wrought. Then came the almost reflexive, inevitable shriek at the top of his lungs: "HEATHER! GET OUTTA HERE!" as he simultaneously swung his arm in Heather's direction in an uncontrollable burst of emotion. Andrew's shout was more than enough to produce a wail from Heather, but the sting across her back from Andrew's hand didn't help, either. Benjamin, startled by the uproar, anticipated the melee about to begin and raced to the kitchen, knowing full well that his mother and father were the only ones who would be able to reinstate tranquility after this unfortunate exchange between his little brother and sister.

*A*lthough the specifics may be very different, this type of exchange between siblings is probably not uncommon in families and households around the world. The sequence of events serves to introduce a few of the many issues central to this book. For example, consider some of the developmental differences displayed by Heather, Andrew, and Benjamin during this interaction. Heather, only one year of age, does not move about or handle objects in the same way as her older siblings. Perhaps more important for our purposes, Heather seems to have very little appreciation for the consequences her impulsive reach might have on both Andrew and the construction set. Her six-year-old brother displays far greater physical dexterity and more sophisticated planning and thinking about the toys that are part of his play. Andrew also has excellent verbal skills with which to express his thoughts and emotions, although he still has some difficulty regulating the latter. Yet Andrew's reasoning about his world pales in comparison with that of his older brother, Benjamin, who is captivated by a complex computer game. Moreover, at the age of fourteen, Benjamin has been given increased responsibility, such as that of looking after both younger siblings. Although he is not always as careful and conscientious in this task as his mother and father might like, his parents feel reasonably assured that if things are not going well, Benjamin knows where to seek assistance.

How did these enormous developmental differences come about? That is a primary question that we address in this book. But there are other questions of interest to us in the sequence of events described here. How should their parents now deal with the conflict in order to bring about peace between Heather and Andrew? How would you? How should his parents respond to the angry outburst from Andrew? How might they have encouraged Benjamin to take his baby-sitting responsibilities more seriously?

When we think about trying to understand how children develop and become competent individuals in interactions with one another and their physical environment, common sense seems like the place to start. For generations common sense provided the parenting wisdom by which caregivers understood and reared children. For example, when Heather, Andrew, and Benjamin could not get along with each other, their parents often spanked the child whom they thought might be at fault. They followed a commonly accepted approach to dealing with conflict, a method that seems to be shared in many cultures. As an illustration, among the proverbs expressed by the

Ovambo of southwest Africa is the saying, "A cranky child has not been spanked," and Korean parents may say, "Treat the child you love with the rod; treat the child you hate with another cake." Proverbs like these promoting physical discipline for children can be found in many cultures around the world (e.g., Palacios, 1996).

Although common sense is extremely important in child rearing, in some circumstances it may yield unexpected and perhaps even undesirable consequences. For example, is physical punishment the best way to prevent unacceptable behaviors in children? Caregivers in many societies believe spanking is an effective method of dealing with angry outbursts such as that displayed by Andrew. However, researchers have found that the children of parents who routinely resort to physical punishment often initiate more aggressive acts than do the children of parents who rely on alternative methods of disciplining undesirable conduct (Bandura & Walters, 1959; Dodge, Pettit, & Bates, 1994). This relationship has been observed in Native American (McCord, 1977) and British working-class homes (Farrington, 1991), as well as in families in the United States, Australia, Finland, Poland, and Israel (Eron, Huesmann, & Zelli, 1991). In other words, under some circumstances, physical punishment appears to encourage rather than discourage aggressive actions and may escalate into increasingly coercive interactions between parent and child. Thus the common-sense practice of disciplining by physical punishment, a practice supported by various cultural proverbs and recommendations, may need to be examined more closely. This is precisely the point at which the need for the scientific study of children and their development enters.

What Is Development?

Development, as we use the term, means all the physical and psychological changes a human being undergoes in a lifetime, from the moment of conception until death. The study of human development is, above all, the study of change (Overton, 1998). From the very moment of birth, changes are swift and impressive. Within a few short months, the newborn who looked so helpless (we will see that the true state of affairs is otherwise) comes to control his or her own body, to locomote, and to master simple tasks such as self-feeding. In the years that follow, the child begins to understand and speak a language, engages in more and more complex thinking, displays a distinct personality, and develops the skills necessary to interact with other people as part of a social network. The range and complexity of every young person's achievements in the first two decades of life can only be called extraordinary.

One of the goals of this book is to give you an overview of the most significant changes in behavior and thinking processes that occur in this time span. In the pages that follow we describe the growing child's accomplishments in many domains of development. For example, we detail the basic physical and mental capabilities in infants and children and examine the social and emotional skills children acquire as they reach out to form relationships with their family members, peers, and others. In addition, we discuss more thoroughly, for example, the issue of aggressive behavior and what research suggests about how parents, teachers, and society might address this problem. A second important goal is to help you appreciate just why children develop in the specific ways they do. That is, we also try to explain developmental outcomes in children. How do the genetic blueprints inherited from parents shape the growing child? What is the role of the environment? How does the society or culture in which the child lives influence development? Does the child play a passive or an active role in his or her own development? We are repeatedly concerned with some other questions about development. Do the changes that take place occur gradually or suddenly? Do all children follow a common developmental pathway, and if not, what factors explain these individual differences? And how do the many facets of development influence one another? As you may imagine, although we often seek simple answers to these questions, they are neither simple nor always obvious (Horowitz, 2000).

development Physical and psychological changes in the individual over a lifetime.

As suggested here, the activity of reading together provides a context for learning that extends to sharing thoughts about mutual interests and ideas between friends. Among the many topics of interest to developmental psychologists are understanding how children establish close relationships with one another. In *theorizing* about this developmental accomplishment, researchers may explore what the members of a group gain from their peers, the cognitive skills that are required to form friendships, and how various kinds of experiences help children to become sensitive and responsive to others.

Developmental psychology is the discipline concerned with the scientific study of changes in human behaviors and mental activities as they occur over a lifetime. *Developmental psychologists* rely on research to learn about growth and change in children. This approach has its limitations: researchers have not studied every important aspect of child development, and sometimes studies do not point to clear, unambiguous answers about the nature of development. Indeed, psychologists often *disagree* on the conclusions they draw from a given set of data. Nonetheless, scientific fact-finding has the advantage of being verifiable and is also more objective and systematic than personal interpretations of children's behavior. As you read about development in the chapters that follow, the controversies as well as the unequivocal conclusions, we hope you will use them to sharpen your own skills of critical analysis.

An essential ingredient of the scientific process is the construction of a **theory,** a set of ideas or propositions that helps to organize or explain observable phenomena. For many students, theories seem far less interesting than the vast assortment of intellectual, linguistic, social, physical, and other behaviors and capabilities that undergo change with time. However, by describing children's accomplishments in a systematic, integrated way, theories *organize* or make sense of the enormous amount of information researchers have gleaned. Theories of development also help to *explain* our observations. Is your neighbor's little boy shy because he inherited this trait, or did his social experiences encourage him to become this way? Did your niece's precocious mathematical skills develop from her experience with her home computer, or does she just have a natural flair for numbers? Was Andrew's angry reaction to his baby sister a biological response or something he had learned? Psychologists are interested in understanding the factors that contribute to the emergence of behavioral skills and capacities, and their theories are ways of articulating ideas about what causes various behaviors to develop in individual children.

A good theory goes beyond description and explanation, however. It leads to *predictions* about behavior, predictions that are clear and easily tested. If shyness results from social experiences, for example, the withdrawn four-year-old should profit from a training program that teaches social skills. If, on the other hand, shyness is a stable, unchangeable personality trait, even extensive training in sociability may have very little impact. Explaining and predicting behavior is not only gratifying but also essential for translating ideas into applications—creating meaningful programs and ways to assist parents, teachers, and others who work to enhance and promote the development of children. For example, when a theory proposes that adults are an im-

developmental psychology
Systematic and scientific study of changes in human behaviors and mental activities over time.

theory   Set of ideas or propositions that helps to organize or explain observable phenomena.

portant source of imitative learning and that parents who display aggressive behavior provide a model for responding to a frustrating situation, we can begin to understand why common proverbs such as "spare the rod and spoil the child" sometimes need to be reevaluated.

The knowledge that developmental psychologists acquire through their research can also address many concerns about **social policy.** *Social policies* are plans and efforts established by local, regional, or national organizations and agencies. These are often government programs, but businesses, private foundations, and other groups attempt to implement social policies that are designed to achieve a particular purpose with respect to the members of a society as well. The goals of many of these policies are geared to alleviating social problems. Social policies may, for example, be concerned with increasing the effectiveness of education for children, improving their health, reducing teenage pregnancy, eliminating child abuse, reducing low birth weight and infant deaths, preventing young people from smoking cigarettes, encouraging parents to enforce the use of seat belts, promoting self-esteem, and a host of other goals. Research can help identify social problems that limit or interfere with children's development and can assist policymakers in establishing programs to reduce or eliminate the factors that hinder psychological health and competence in children. At the same time, research may shed further light on the mechanisms and processes that underlie behavior. We have the opportunity to consider many social policies that bear on children in the chapters that follow.

In this chapter, our discussion focuses on several broad theories, and some of their historical antecedents, that have influenced explanations of children's behavior. No one theory is sufficient to provide a full explanation of all behavior. Some theories strive to make sense of intellectual and cognitive development; others focus on social, emotional, personality, or some other aspect of development. Theories also vary in the extent to which they present formalized, testable ideas. Thus some are more useful than others in providing explanations for behavior that can be rigorously evaluated. And they often disagree in their answers to the fundamental questions of development. In fact, before we examine specific theories, let us consider a cluster of basic questions that all theories of development must address.

Six Major Themes in Developmental Psychology

As you read about different aspects of child development—language acquisition, peer relationships, motor skills, emergence of self-worth, and many others—you will find that certain questions about development surface again and again. We call these questions the *themes in development*. Various theories provide different answers to these questions. Good theories, grounded in careful research, help us to think about and understand these major themes. What are these key questions?

What Roles Do Nature and Nurture Play in Development?

We have all heard expressions such as "He inherited a good set of genes" or "She had a great upbringing" to explain some trait or behavior. These explanations offer two very different answers to a basic question that has fueled controversy among theorists since the beginnings of psychology and that continues to rage even today. Dubbed the **nature-nurture debate,** the dispute centers on whether the child's development is the result of genetic endowment or environmental influences.

Do children typically crawl at nine months and walk at twelve months of age as part of some inborn unfolding program or because they have learned these motor responses? Do they readily acquire language because their environment demands it or because they are genetically predisposed to do so? Are boys more aggressive than girls because of cultural conditioning or biological factors? In some areas, such as the

social policy Programs and plans established by local, regional, or national public and private organizations and agencies designed to achieve a particular social purpose or goal.

nature-nurture debate Ongoing theoretical controversy over whether development is the result of the child's genetic endowment or the kinds of experiences the child has had.

development of intelligence and the emergence of gender roles, the debate over nature versus nurture has been particularly heated.

Why all the uproar about such a question? One reason is that the answer has major implications for children's developmental outcomes, for parenting practices, for the organization of schooling, and for other practical applications concerning research. If, for example, experiments support the view that intelligence is guided largely by heredity, providing children with rich learning experiences may have minimal impact on their eventual levels of intellectual skill. If, on the other hand, research and theory more convincingly show that intellectual development is shaped primarily by environmental events, it becomes vital to provide children with experiences designed to optimize their intellectual growth. Answers to this type of question are likely to have an impact on social policy by affecting how funds are allocated to health, educational, and many other programs.

Psychologists now recognize that both nature and nurture are essential to all aspects of behavior and that these two forces combine to mold what the child becomes. Thus the controversy has shifted away from a concern with identifying *which* of these two factors is critical in any given situation. Instead, the question is *how,* specifically, each contributes to development. The problem for researchers is to determine the manner in which heredity and environment *interact* to fashion the behaviors we see in children and eventually in adults. As will soon be apparent, developmental theories have taken very different positions on this question.

How Does the Sociocultural Context Influence Development?

Development is influenced by more than just the immediate environment of the family. Children grow up within a larger social community, the *sociocultural context*. The sociocultural context includes unique customs, values, and beliefs about the proper way to rear children and the ultimate goals for their development. Think back to your family and the cultural standards and values that determined how you were reared. Were you allowed to be assertive and to speak your mind, or were you expected to be compliant toward adults and never challenge them? Were you encouraged to fend for yourself, or were caregivers, relatives, and even cultural institutions such as the school, church, or some other agency expected to assist with your needs throughout childhood, adolescence, and perhaps even into your early adult years?

Children grow up in many different cultures and social settings. This Malaysian American family, celebrating the Chinese New Year at their home in San Francisco, has adopted some customs and values from American culture, yet maintains many traditions and practices brought with them from their native country. Various sociocultural contexts provide the backdrop in which specific parenting practices are carried out. Researchers must consider these different kinds of experiences to fully understand development.

How was your development affected by your family's economic status and educational attainments? By your gender and ethnic identity?

Sociocultural factors affect everything from the kinds of child-rearing practices parents engage in to the level of health care and education children receive; they affect, for example, children's physical well-being, social standing, sense of self-esteem, "personality," and emotional expressiveness. As you explore the various domains of development, you will come to appreciate that many developmental outcomes are heavily influenced by the sociocultural context. And, as with the nature-nurture debate, the precise relationship of sociocultural context to various areas of development has generated much heated discussion among theorists.

How Does the Child Play an Active Role in Development?

Do children learn to speak by passively listening to their language and reproducing it as if they were playing back a tape recording? Or are they actively operating on the sounds, grammar, and meanings of words to express themselves in new ways? Do children exhibit masculine and feminine gender stereotypes simply by mirroring the behaviors of males and females around them? Or do they construct mental interpretations of "male" and "female" activities that in turn drive their own behavior? Do parents establish the emotional tone for interactions with their young infants? Or do infants take some initiative in determining whether playing or bathing will be stressful or happy events? In other words, do infants and children somehow regulate and determine their own development?

Most researchers today believe that children take an active role in their own growth and development. That active role may be evident at two different levels. The first begins with certain attributes and qualities that children possess and exhibit, such as curiosity about and eagerness to engage in the physical and social world surrounding them. By virtue of being a male or a female, being placid or active, being helpful or refusing to cooperate, and by eventually taking an interest in such things as dinosaurs, music, or sports, children elicit reactions from others. Thus children are not simply passive recipients of the environment or blank slates on which it writes; their own capacities and efforts to become immersed in, to get "mixed up" with, their physical and social world often modify what happens to them and can affect their development in profound ways.

A second, perhaps more fundamental, way in which children contribute to their own development is through actively constructing and organizing ways of thinking, feeling, communicating, and so forth to assist them in making sense of their world. Children may formulate these conceptualizations to help them respond to and understand the rich array of physical and social events they experience. As you will soon see, questions about how children directly influence their own development are theoretically controversial as well.

Is Development Continuous or Discontinuous?

Everyone agrees that children's behaviors and abilities change, sometimes in dramatic ways. However, there is much less consensus on how best to explain these changes. On the one hand, development can be viewed as a *continuous* process in which new attainments in thinking, language, and social behavior are characterized by gradual, steady, small *quantitative* advances. For example, substantial progress in reasoning or problem solving may stem from the ability to remember more and more pieces of information. Or, as neural coordination and muscle strength gradually increase, the infant may advance from crawling to walking—a progression that, by anyone's account, has substantial consequences for both child and caregiver. Thus, even though at two given points in time the child's ability to think or locomote may look very different, the transformation may arise from gradual, quantitative improvements in the speed, efficiency, or strength with which mental or physical processes are carried out rather than from a dramatic reorganization of some underlying capacity.
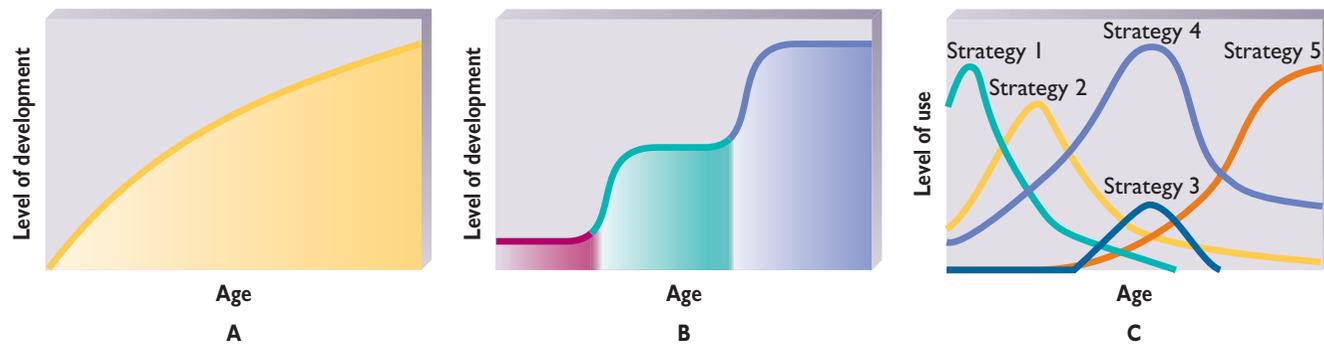
FIGURE 1.1
Development as a Continuous Versus a Discontinuous Process

Children display many changes in their abilities and behaviors throughout development. According to some, the best way to explain these changes is in terms of the gradual acquisition of the structures and processes that underlie growth (A). Others believe development undergoes a series of stagelike transformations during which underlying structures and processes exhibit rapid reorganization followed by a period of relative stability (B). However, other approaches suggest that at any given time children may exhibit multiple ways of demonstrating some ability or capacity, as is evident in the "overlapping waves" (Siegler, 1998) depiction of development (C). According to this view, the ability or capacity displayed by children will depend on a variety of situational and developmental factors.

stage Developmental period during which the organization of thought and behavior is qualitatively different from that of an earlier or later period.

Alternatively, some theories explain development in terms of the child's progress through a series of **stages,** or periods during which innovative developmental accomplishments abruptly surface, presumably because some fundamental reorganizations in thinking or other capacities underlying behavior have taken place. In this view, development undergoes rapid transitions as one stage ends and a new one begins, followed by relatively stable periods during which the child's behaviors and abilities change very little (see Figure 1.1). Abrupt or rapid changes resulting in a dramatic reorganization in how children perceive, think, feel, or behave are interpreted as *qualitative advances* in development. From this perspective, children establish new ways of thinking—for instance, during the early school years—that change problem solving, moral judgment, interactions with peers, and other activities. In adolescence they move to yet another level of thinking that influences these various domains of behavior in still different ways.

Evidence to support continuity or discontinuity in human development is difficult to obtain. Perhaps one reason is that these perspectives have underestimated the variability that exists in individual children's skills. Many ways of behaving and thinking are available to children at any given time. Which one will be expressed depends on a variety of circumstances. Robert Siegler (1996, 1998) has suggested that different strategies or ways of responding can best be described as "overlapping waves" because they often coexist in the child's repertoire. Some methods of responding may be exhibited more frequently at younger ages and others at older ages. Although some strategies may be lost as the child gains more experience and as others are freshly formulated, at any particular time children are likely to be able to use several competing approaches for responding to a situation. For example, when young children demonstrate the ability to add two numbers, say 4 plus 3, they may do so using several different strategies such as counting from one, counting beginning with the larger of the pair of numbers, comparing the problem to another whose answer is already known, or directly retrieving the information from memory. Which specific strategy is employed will depend on how much experience the child has had with the problem, how familiar he or she is with each of the numbers, how quickly the answer must be determined, and how much effort is required to carry out the strategy, among other things. Thus to conclude that a child has moved into a stage or phase in which he or she is able to carry out addition profoundly underestimates the variety of competencies he or she can draw on to demonstrate that capacity.

Few, if any, aspects of human growth appear to mimic the dramatic transformations found in the life cycle of an insect as it changes from egg to larva to pupa and finally to adult periods in which a stable physical organization is followed by rapid reorganization and emergence of a new period in the life cycle. Yet over the months and years, children do become quite different. Whether these changes are best understood as quantitative or qualitative advances are points of frequent disagreement among theories of development.

How Prominent Are Individual Differences in Development?

Parents of two or more children frequently comment on how unique each child is. One child may have learned to speak before reaching one year of age, another not until eighteen months. One may have shown an interest in music, another in athletics. Perhaps one child repeatedly challenged the parent's authority, whereas another cheerfully complied with parental demands and requests. No "average" or "typical" child exists.

Biological and experiential differences certainly contribute to wide variations in behavior and competency displayed by children, even those born to and reared by the same set of parents. Although human growth must go forward within certain constraints, development may proceed along many paths and at quite different rates from one individual to another. One especially important reason that differences emerge is that individual children are exposed to various kinds and levels of benefits and risks during their development. For example, risk may be a consequence of genetic or biological complications, as well as rearing or cultural events, that promote development in less than optimal ways. An accidental head injury, exposure to a disease such as AIDS, being reared by an abusive parent, experiencing parents' divorce, attending an unstimulating daycare center, and the absence of close friends are just a few of the many factors that can affect the course of development and may limit healthy progress. Individual children, because of their genetic or biological makeup or because of other resources available in their environment, respond to these risks in different ways. *Resilient* children, those who seem able to most effectively resist the negative consequences of risk, tend to have a constellation of individual qualities that include a relatively relaxed, self-confident character that permits them to adapt and to respond intelligently in difficult situations and circumstances. In addition, they are likely to have the benefits of a close, encouraging relationship with at least one member of their family and with others beyond the family, such as a teacher or close friend, through their membership in some supportive agency or organization such as a club or church (Luthar, Ciccheti, & Becker, 2000; Masten & Coatsworth, 1998; Runyan et al., 1998; Rutter, 1990; Werner, 1995). Theories differ as to how and to what extent this diversity is emphasized and can be explained.

Individual differences in development arise from many influences. Genetic, biological, parenting, and social factors can play a role. For example, not all children have a grandparent available to directly influence their lives. For this preschooler, her grandmother is an important person who encourages and inspires an interest in reading. As a result of her grandmother's influence, she gains some of the skills necessary to succeed when she enters school.

How Do the Various Domains of Development Interact?

Many times the child's development in one domain will have a direct bearing on her attainments in other domains. Consider just one example: how a child's physical growth might influence her social and emotional development. A child who has become taller than her peers may experience very different interactions with adults and peers than a child who is small for his age. The taller child might be given more responsibilities by a teacher or be asked by peers to lead the group more frequently. These opportunities may instill a sense of worth and offer occasions to practice social skills less frequently available to the smaller child. As these social skills are exercised and become more refined and advanced, the taller child may receive still more opportunities that promote social and even cognitive development. Our ultimate aim is to understand the child as a whole individual, not just as someone who undergoes, for example, physical, perceptual, emotional, cognitive, or social development. To do so, we must keep in mind that no single component of development unfolds in isolation from the rest.

In the discussions that follow concerning various historical contributions to developmental psychology and the major theoretical approaches still important to the field today, it will be apparent that answers pertaining to the themes often differ. Moreover, the themes, summarized in Figure 1.2, will continue to have an important influence on our discussion of developmental psychology throughout this book. Perhaps one of the best ways to review them is to take a few minutes to consider your stand on each of these themes.

FIGURE 1.2
Six Major Themes in Developmental Psychology

The study of children and their development must address a number of questions, or what are identified here as themes in development. Answers to these issues are often influenced by the theoretical orientations that guide research. Throughout this chapter and the chapters that follow, we repeatedly consider these themes and the ways developmental psychologists attempt to answer these questions. Charts like the one here will appear in every chapter dealing with particular areas of development.

Key Themes in Child Development

■ **Nature/Nurture**
What roles do nature and nurture play in development?

■ **Sociocultural Influence**
How does the sociocultural context influence development?

■ **Child's Active Role**
How does the child play an active role in the process of development?

■ **Continuity/Discontinuity**
Is development continuous or discontinuous?

■ **Individual Differences**
How prominent are individual differences in development?

■ **Interaction Among Domains**
How do the various domains of development interact?

FOR YOUR REVIEW

• What do we mean by the debate between nature and nurture? Do you think development is more greatly influenced by one or the other?

• How and to what extent do you feel that society's concerns, values, and resources affect an individual's development?

• To what extent do you think that children actively influence their own development?

• Do you find it easier to understand development in terms of continuous or discontinuous stagelike change?

• In your view, how pervasive and important are individual differences in children's development?

• To what extent do you think advances or difficulties in one domain affect the child's development in other domains?

The Study of the Child: Historical Perspectives

Human development became a focus of serious study comparatively late in the history of science, having its origins only a little over one hundred years ago. Despite its relatively short history, however, developmental psychology has grown at an astonishing rate in the last several decades and is a thriving modern-day field of study. Each year hundreds of books and thousands of articles about children's growth are published for professionals interested in specific theoretical issues and for parents or teachers. Scientists and laypersons, however, have not always had such a focused and conscious desire to understand the process of child development. In fact, societal attitudes toward childhood *as a concept* have shifted considerably over the last several centuries.

The Concept of Childhood

Contemporary society views childhood as a separate, distinct, and unique period, a special time when individuals are to be protected, nurtured, loved, and kept free of most adult responsibilities and obligations. Child labor laws try to ensure that children are not abused in the work world, and the institution of public education signals a willingness to devote significant resources to their academic training. But childhood was not always viewed in this way (Borstelmann, 1983).

In many regions of the world, children spend much of their time engaged in physical labor. This girl, helping to harvest rice in Cambodia, very likely had little opportunity to learn to read or write. Historically, and in some cultures yet today, attitudes about childhood differ greatly from those held in recent times in most Western societies.

● **Children in Medieval and Renaissance Times**   From the Middle Ages through premodern times, European society's attitudes toward children differed strikingly from those of our contemporary society. Though their basic needs to be fed and clothed were tended to, children were not coddled or protected in the same way infants in our society are. As soon as they were physically able, usually at age seven or so, children were incorporated into the adult world of work; they harvested grain, learned craft skills, and otherwise contributed to the local economy. In medieval times, Western European children did not have special clothes, toys, or games. Once they were old enough to shed swaddling clothes, they wore adult fashions and pursued adult pastimes such as archery, chess, and even gambling (Ariès, 1962).

In certain respects, however, premodern European society regarded children as vulnerable, fragile, and unable to assume the full responsibilities of adulthood. Medical writings alluded to the special illnesses of young children, and laws prohibited marriages of children under age twelve (Kroll, 1977). Religious movements of this era proclaimed the innocence of children and urged that they be educated. Children's souls, as well as adults', must be saved, said clerics, and they held that parents were morally responsible for their children's spiritual well-being. Parents recognized that children were also a financial responsibility and helped them to set up their own households as they approached adulthood and marriage (Pollock, 1983; Shahar, 1990). Thus, even though medieval children were incorporated quickly into the adult world, they were recognized both as different from adults and as possessing special needs.

A noticeable shift in attitudes toward children occurred in Europe during the sixteenth century. In 1545, English physician and lawyer Thomas Phayre published the first book on pediatrics. In addition, the advent of the printing press during that century made possible the wide distribution of other manuals on the care of infants and

In premodern Europe, children often dressed like adults and participated in many adult activities. At the same time, though, children were seen as fragile and in need of protection.

children. The first grammar schools were established to educate upper-class boys in economics and politics. Upper-class girls attended convent schools or received private instruction intended to cultivate modesty and obedience as well as other skills thought to be useful in their future roles as wives and mothers (Shahar, 1990).

Probably one of the most significant social changes occurred as a result of the transition from agrarian to trade-based economies in the sixteenth and seventeenth centuries and the subsequent growth of industrialization in the eighteenth century. As people relocated from farms to towns and as the production of goods shifted outside the home, the primary role of the family in Western society changed from ensuring economic survival to the nurturing of children (Hareven, 1985). Closeness and emotional attachment increasingly became the hallmarks of parent-child relations.

● **The Age of Enlightenment**   The impact of these sweeping social changes was consolidated by the writings of several key thinkers who shaped the popular understanding of childhood. In the seventeenth and eighteenth centuries, two philosophers proposed important but distinctly different ideas about the nature and education of children. In his famous treatise *An Essay Concerning Human Understanding* (1961), originally published in 1690, the British philosopher John Locke (1632–1704) described his views on the acquisition of human knowledge. Virtually no information is inborn, according to Locke. The newborn's mind is a *tabula rasa,* literally a "blank slate," on which perceptual experiences are imprinted. Locke's philosophy of **empiricism,** the idea that environmental experiences shape the individual, foreshadowed the modern-day psychological school of behaviorism. Locke believed that rewards and punishments from others, imitation, and the associations the child forms between stimuli are key elements in the formation of the mind.

In a second work, *Some Thoughts Concerning Education* (1693/1964), Locke expounded further on his philosophy of training children:

> *The great mistake I have observed in people's breeding their children . . . is that the mind has not been made obedient to discipline and pliant to reason when it was most*

empiricism   Theory that environmental experiences shape the individual; more specifically, that all knowledge is derived from sensory experiences.

tender, most easy to be bowed. . . . He that is not used to submit his will to the reason of others when he is young, will scarce hearken to submit to his own reason when he is of an age to make use of it.

Locke further argued in support of the importance of early experiences and proper training but also that child rearing and education should proceed through the use of reason rather than harsh discipline. In his view, parents must find a balance between being overly indulgent and overly restrictive as they manage their child's behavior. As we will see, many of these same themes resound in contemporary research on good parenting and represent a contrast to the strict discipline characteristic of Western society before the eighteenth century.

The second influential philosopher of the Enlightenment was Jean Jacques Rousseau (1712–1778), a French thinker who embraced the ideal of the child as a "noble savage." According to Rousseau, children are born with a propensity to act on impulses, but not necessarily with the aim of wrongdoing. They require the gentle guidance of adult authority to bring their natural instincts and tendencies in line with the social order. In *Émile* (1762/1895), Rousseau set forth these beliefs about child rearing:

Never command him to do anything whatever, not the least thing in the world. Never allow him even to imagine that you assume to have any authority over him. Let him know merely that he is weak and that you are strong; that by virtue of his condition and your own he is necessarily at your mercy.

. . . Do not give your scholar any sort of verbal lesson, for he is to be taught only by experience. Inflict on him no species of punishment, for he does not know what it is to be in fault.
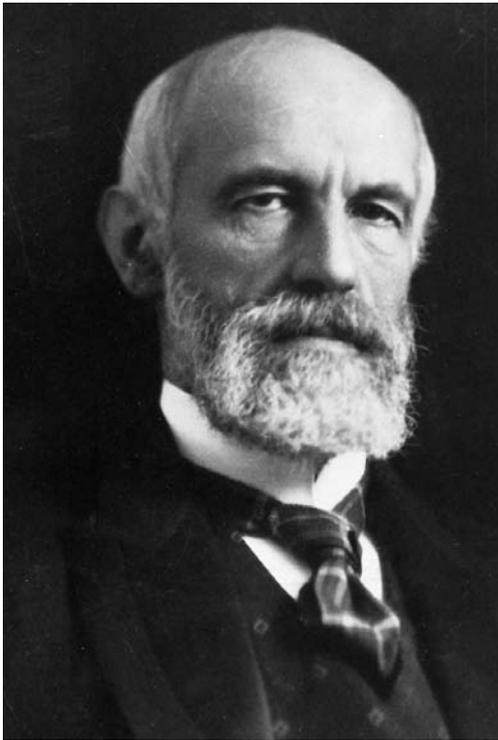
Rousseau emphasized the dynamic relationship between the curious and energetic child and the demands of his or her social environment as represented by adults. Adults should not stifle the child's natural development and spirit through domination. Contemporary theories that acknowledge the active role of the child in the process of development have distinct roots in Rousseau's writings.

Rousseau also advanced some radical ideas about education. Children, he held, should not be forced to learn by rote the vast amounts of information that adults perceive as important. Instead, teachers should capitalize on the natural curiosity of children and allow them to discover on their own the myriad facts and phenomena that make up the world. Rousseau's ideas on the nature of education would be incorporated in the twentieth-century writings of Jean Piaget.

Both Locke and Rousseau emphasized the notion of the child as a developing, as opposed to a static, being. Both challenged the supposition that children are merely passive subjects of adult authority, and both advanced the idea that children should be treated with reason and respect. Having been elevated by the efforts of these worthy thinkers to an object of intellectual interest, the child was now ready to become the subject of scientific study.

The Origins of Developmental Psychology

By the mid to late 1800s, scholars in the natural sciences, especially biology, saw in the study of children an opportunity to support their emerging theories about the origins of human beings and their behaviors. Charles Darwin, for example, hypothesized that the similarities between the behaviors of humans and those of other species were the result of common evolutionary ancestors. Similarly, Wilhelm Preyer, another biologist, was initially interested in the physiology of embryological development but soon extended his investigations to behavioral development after birth. In the United States and Europe, key researchers who participated in the birth of psychology as an academic discipline also began to show an interest in studying children. By the beginning of the twentieth century, developmental psychology was established as a legitimate area of psychological inquiry.

G. Stanley Hall is considered to be the founder of modern child psychology.

● **The Baby Biographers: Charles Darwin and Wilhelm Preyer**   One of the first records of the close scrutiny of a child for the purpose of scientific understanding comes from the writings of Charles Darwin. Eager to uncover important clues about the origins of the human species, Darwin undertook to record in great detail his infant son's behaviors during the first three years of life. Darwin documented the presence of early reflexes, such as sucking, as well as the emergence of voluntary motor movements, language, and emotions such as fear, anger, and affection. When he saw similarities, he linked the behaviors of the young child to other species, such as when, for example, he concluded that the infant's comprehension of simple words was not unlike the ability of "lower animals" to understand words spoken by humans (Darwin, 1877).

In 1882, the German biologist Wilhelm Preyer published *The Mind of the Child* (1882/1888–1889), a work that described in great detail the development of his son Axel during his first three years of life. Preyer wrote meticulously of his son's sensory development, motor accomplishments, language production, and memory, even noting indications of an emerging concept of self. Although Preyer followed in the footsteps of several previous "baby biographers," including Darwin, he was the first to insist that observations of children be conducted systematically, recorded immediately and unobtrusively, and repeated several times each day. By advocating the application of scientific techniques to the study of children, the baby biographers, and Preyer in particular, set in motion the beginnings of the child development movement in the United States.

● **G. Stanley Hall: The Founder of Modern Child Psychology**   The psychologist perhaps most responsible for launching the new discipline of child study in the United States was G. Stanley Hall, who, in 1878, became the first American to obtain a Ph.D. in psychology. Hall is also known for founding the first psychological journal in the United States in 1887 and, in 1891, the first journal of developmental psychology, *Pedagogical Seminary* (now called the *Journal of Genetic Psychology*). In addition, he founded and served as the first president of the American Psychological Association.

As the first American to study in Europe with the pioneer psychologist Wilhelm Wundt, G. Stanley Hall returned to the United States in 1880 with an interest in studying the "content of children's minds." Adopting the questionnaire method he had learned about in Germany, he had teachers ask about two hundred kindergarten-age children questions such as "Have you ever seen a cow?" or "What are bricks made of?" The percentage of children who gave particular answers was tabulated, and comparisons were made between the responses of boys and girls, city children and country children, and children of different ethnic backgrounds (Hall, 1891). For the first time, researchers were collecting data to compare groups of children, in contrast to previous approaches that had emphasized the detailed examination of individual children.

● **Alfred Binet: The Study of Individual Differences**   The French psychologist Alfred Binet is known primarily as the developer of the first formal assessment scale of intelligence. Binet was a pioneer in the study of **individual differences,** those unique characteristics that distinguish one person from others in the larger group.

Binet's original interest lay in the general features of children's thinking, including memory and reasoning about numbers. To that end, he closely scrutinized the behaviors of his two daughters as they progressed from toddlerhood to the teenage years. He noted, in particular, how one daughter, Madeleine, was serious and reflective as she tried to solve problems, whereas the other daughter, Alice, was more impulsive and temperamental (Fancher, 1998). His studies of children's thinking had two significant outcomes: first, they demonstrated that a description of individual differences contributed to the understanding of human development, and second, they provided the basis for more formal tests of children's mental abilities (Cairns, 1998). In response to a request from the Ministry of Public Instruction in Paris for a tool to screen for students with learning problems, Binet and another colleague, Théodore Simon, developed a series of tasks to systematically measure motor skills,

individual differences   Unique characteristics that distinguish a person from other members of a larger group.

vocabulary, problem solving, and a wide range of other higher-order thought processes (Binet & Simon, 1905). This instrument could identify patterns in mental capabilities that were unique to each child.

The idea of mental testing caught on very quickly in the United States, especially among clinicians, school psychologists, and other professionals concerned with the practical side of dealing with children. For the first time, it was legitimate, even important, to consider variation in mental abilities from person to person.

● **James Mark Baldwin: Developmental Theorist**   Considered the founder of academic psychology in Canada (Hoff, 1992), James Mark Baldwin established a laboratory devoted to the systematic study of movement patterns, handedness, and color vision in infants at the University of Toronto (Cairns, 1992). Soon, however, his interests shifted away from gathering empirical data. He became one of the most important developmental theorists of the early twentieth century.

One of Baldwin's most important propositions was that development is a dynamic and hierarchical process such that "every genetic change ushers in a real advance, a progression on the part of nature to a higher mode of reality" (Baldwin, 1930, p. 86). Baldwin applied these ideas to the domain of cognitive development by suggesting that mental advances occur in a stagelike sequence in which the earliest thought is prelogical but gives way to logical and eventually hyperlogical or formal reasoning— ideas that today are often linked to Piaget.

Baldwin is also recognized for his unique perspective on social development and the formation of personality. Instead of characterizing the child as a passive recipient of the behaviors and beliefs endorsed by the larger society, he described the child's emerging self as a product of continual reciprocal interactions between the child and others. The proposition that development results from a mutual dynamic between the child and others took a long time to catch on among psychologists, but this idea, so popular today—and one of the themes of development we emphasize throughout this text—is actually almost a century old (Cairns & Ornstein, 1979).

By the start of the 1900s, the foundations of developmental psychology as a scientifically based discipline were firmly established. Psychologists were well poised to begin the study of differences among groups of children, individual differences among children, and the hypotheses generated by emerging theories of development.

● **Sigmund Freud: The Importance of Early Experience**   During the early decades of the twentieth century, Sigmund Freud's theory also became extremely influential, particularly with respect to explaining emotional and personality development. Freud proposed in his psychosexual theory of development that many aspects of the individual's personality originate in an early and broad form of childhood sexuality. The fuel that powers human behavior, according to Freud, is a set of biological instincts. The psychological tension induced by these instincts, called *libido* or *libidinal energy,* gradually builds and requires eventual discharge. Under many circumstances, this energy is reduced as rapidly as possible. Sometimes, however, tensions such as those associated with hunger or pain in infants cannot be eliminated immediately. Because of these delays, mental structures and behavioral responses eventually organize into more satisfactory ways of decreasing tension. For example, behavioral acts might include calling out to the caregiver as a signal to be fed or eventually learning to feed oneself, responses that normally lead to a reduction in libidinal urges by effective, rational, and socially acceptable means.

The locus of tension and the optimal ways to reduce needs undergo change with age. Freud identified five stages of psychosexual development, periods during which libidinal energy is usually associated with a specific area of the body. During the *oral stage*, lasting until about one year of age, libidinal energy is focused around the mouth and is reduced through sucking, chewing, eating, and biting. Throughout the subsequent *anal stage*, from about one to three years of age, this energy is centered on the anal region and is lessened via satisfactory expelling of body wastes. The *phallic stage*, typically bridging the period between three and five years of age, is

characterized as a time of desire for the opposite-sex parent and other forms of immature gratification surrounding the genitals. A relatively long *latency* period lasts from about five years of age to adolescence, and is a time in which libidinal energy is submerged or expressed, for example, via a more culturally acceptable focus on the acquisition of social or intellectual skills. During the final stage, the *genital stage,* which occurs in adolescence and continues throughout adulthood, mature forms of genital satisfaction are theorized to be an important source of tension reduction.

Freud believed that the individual's progression through these stages is greatly influenced by maturation. However, the environment also plays a critical role. Lack of opportunity to meet needs adequately or to express them during a stage could lead to negative consequences in the way the child relates to others and to feelings of low self-worth. For example, the infant whose sucking efforts are not gratified may become *fixated,* that is, preoccupied with actions associated with the mouth for the rest of his or her life. A child whose toilet training is too lax may become messy, disorderly, or wasteful, whereas one whose toilet training is too strict may display a possessive, retentive (frugal and stingy) personality or show an excessive concern with cleanliness and orderliness in later adulthood.

Freud's view of development has been criticized extensively for its emphasis on libidinal gratification, as well as for its cultural and gender limitations. So also has his method for arriving at his theory, that of asking adults to reflect on their earliest experiences. As a consequence, his contributions have often been discounted. Nevertheless, for Freud, as is true for many developmental psychologists today, events that occur during the earliest years of development and that involve interactions with the family were of paramount importance in understanding and explaining behavior throughout the later years of an individual's life.

The Continued Growth of Developmental Psychology in the Twentieth Century

From the beginning of this century to the mid-1940s, psychologists interested in development increasingly concentrated their efforts on gathering descriptive information about children. At what ages do most children achieve the milestones of motor development such as sitting, crawling, and walking? When do children develop emotions such as fear and anger? What are children's beliefs about punishment, friendship, and morality? It was during this era of intensive fact gathering that many *norms* of development—that is, the ages at which most children are able to accomplish a given developmental task—were established. For example, Arnold Gesell established the norms of motor development for the first five years of life, guidelines that are still useful to psychologists, pediatricians, and other professionals who work with children in diagnosing developmental problems or delays (Gesell & Thompson, 1934, 1938).

Over the years, questions about norms gave way to research on the variables that might be related to specific aspects of development or cause it to occur in the way it does. For example, is maturation or experience responsible for the sequence of motor behaviors most children seem to display? Even almost seventy years ago, researchers found that the answer was not simple. Myrtle McGraw (1935, 1939), in her classic studies of twins Johnny and Jimmy, reported that training Johnny (and not Jimmy) to reach for objects, crawl, and swim during infancy accelerated motor development, but only when he was already showing signs of physiological maturity. Similarly, does the predictable sequence of language development occur because of biological influences or learning? What factors lead to the emergence of emotional ties children form with caregivers? Researchers today continue to ask questions of these sorts, recognizing more and more the complexities of the influences on child development.

The first half of the twentieth century also saw the founding of a number of major institutes or research centers that attracted bright young scholars who dedicated their lives to the scientific study of children. A further sign of the professionalization

In her classic studies of a pair of twins, Myrtle McGraw found that both maturation and experience contributed to motor skill development.

of the discipline was the formation of the Society for Research in Child Development (SRCD) in 1933 for scientists who wished to share their growing knowledge of child behavior and development. Today the membership of this society numbers about five thousand (SRCD, 2002) and includes developmental researchers, practitioners, and professionals working in settings such as colleges, universities, research institutes, and hospitals.

Scholars now approach child development from an assortment of disciplines, including anthropology, sociology, education, medicine, biology, and several subareas of psychology (e.g., neuropsychology, comparative psychology, and clinical psychology), as well as the specialized area of developmental psychology. Each discipline has its own biases, as defined by the questions each asks about development and the methodological approaches it employs to answer those questions. Nonetheless, our pooled knowledge gives us a better understanding of development than we might expect from a field that officially began only a century ago.

A number of major theories also influence our understanding of development today. We introduce them and briefly highlight some of the major concepts and principles associated with each in the sections that follow. However, their contributions will be a major part of our discussion in later chapters as well. In considering these theories in this first chapter, we focus in particular on where each stands with respect to the major themes in developmental psychology.

FOR YOUR REVIEW

- How have views of childhood changed from medieval and Renaissance times to today?

- What were John Locke's and Jean Jacques Rousseau's views of childhood?

- How did Charles Darwin, Wilhelm Preyer, G. Stanley Hall, Alfred Binet, and James Mark Baldwin contribute to developmental psychology?

- What was Sigmund Freud's pyschosexual theory of development?

- What new emphases emerged in research on children during the first half of the twentieth century?

Learning Theory Approaches

Learning theorists study how principles of learning cause the individual to change and develop. **Learning,** the relatively permanent change in behavior that results from experience, undoubtedly contributes to why the infant smiles as her mother approaches, the three-year-old says a polite "thank you" on receiving his grandmother's present, the five-year-old displays newfound skill in tying her shoes, and the adolescent expresses a clear preference about the most fashionable item of clothing to wear.

In the extreme view, some learning theorists believe, as John B. Watson did, that learning mechanisms can be exploited to create virtually any type of person:

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, 1930, p. 104)

Although present-day supporters of learning seldom take such a radical position, they are in agreement that basic principles of learning can have a powerful influence on child development (Bijou, 1989; Gewirtz & Peláez-Nogueras, 1992; Schlinger, 1992).

learning   Relatively permanent change in behavior as a result of such experiences as exploration, observation, and practice.

Behavior Analysis

Behavior analysis is a theoretical account of development that relies on several basic principles of learning to explain developmental changes in behavior. Behavior analysis sprang from the radical learning position introduced by John B. Watson and was extended in more recent years by B. F. Skinner (1953, 1974) and others. Nearly a century ago, the Russian physiologist Ivan Pavlov observed that dogs would often begin to salivate at the sound of a bell or some other arbitrary stimulus when the stimulus was accompanied by food. In this type of learning, called *classical conditioning*, a neutral stimulus begins to elicit a response after being repeatedly paired with another stimulus that already elicits that response. We learn certain behaviors and emotions as a result of classical conditioning. For example, children and adults may become anxious on entering a dental office because of its association with previous painful treatments performed by the dentist.

To understand a second basic principle of learning, consider two babies who smile as their caregivers approach. With one baby, the caregiver stops, says "Hi, baby!" and briefly rocks the cradle. With the other baby, the caregiver walks on past, preoccupied. Which baby is more likely to repeat his smiling response when the caregiver nears again? If you reasoned that the first is more likely than the second because the behavior was followed by a positive event (attention or approval) that often increases the frequency of a behavior, you know something about the principle of operant conditioning. *Operant conditioning* (also called *instrumental conditioning*) refers to the process by which the frequency of a behavior changes depending on response consequences in the form of a desirable or undesirable outcome. Behavior analysts have used this principle to account for the emergence of such straightforward behaviors as the one-year-old's waving good-bye to far more sophisticated skills involving memory, language, social interaction, and complex problem solving.

Operant and classical conditioning have been shown to have enormous potential to change behavior. *Behavior modification*, sometimes called *applied behavior analysis,* involves the systematic application of operant conditioning to modify human activity. To illustrate, Jason Stricker and his colleagues (Stricker et al., 2001) investigated whether thumb sucking could be reduced in children who engaged in such activity at an age when it is no longer considered appropriate. They identified a seven-year-old child with an attention deficit hyperactivity disorder who often sucked his thumb while watching television and in other situations. Would consistent feedback to the child help him to become aware of this activity and reduce this behavior? To test this possibility, the researchers attached two small transmitters to the child, one to his wrist and a second to his shirt, just below his mouth. When the child raised his hand to his mouth to engage in thumb sucking, bringing the wrist and shirt transmitter close to each other, the transmitters triggered a nearby device that began to produce a beeping tone. The researchers recorded the percentage of time the child engaged in thumb sucking during ten-minute sessions of television viewing over a number of weeks. During a baseline period the child did not wear the transmitters. In other sessions, he wore transmitters that were either activated or not activated to provide feedback. The findings of this experiment are shown in Figure 1.3. The results clearly demonstrate the elimination of the thumb sucking when the transmitters produced feedback about the activity. The feedback may have helped the child to become aware of his thumb sucking; in addition, the sound also may have been annoying enough to yield the change in his behavior.

Applied behavior analysis has become a powerful approach used by teachers, therapists, and caregivers to bring about changes in behavior ranging from the elimination of temper tantrums and other disruptive responses to encouraging healthy diets and safe driving habits. Even some of its detractors have suggested that behavior analysis may have done more to benefit human welfare than any other psychological theory (Hebb, 1980). For this reason alone, learning theory has appealed to many in their efforts to understand development. Yet behavior analysis has drawn extensive criticism. Its critics, including some learning theorists, remain unconvinced that a

behavior analysis   Learning theory perspective that explains the development of behavior according to the principles of classical and operant conditioning.

Source: Stricker et al., 2001.

FIGURE 1.3
A Behavioral Approach to Reducing Thumb Sucking in Children

The seven-year-old child observed in this study often sucked his thumb. During the baseline period sessions in which he was simply observed watching television, he engaged in this activity a high percentage of time. Next, a set of transmitters, called an awareness enhancement device (AED), was attached to the child. When the device did not activate a beeping tone (Inactive AED), he continued to display such behavior frequently. However, when the tone was activated whenever the child sucked his thumb (Active AED), the practice ceased. As predicted by behavorial theories, response consequences can have a powerful effect on behavior.

behavior can be understood without taking into account the child's feelings and reasons for engaging in that behavior. In other words, mental, emotional, and motivational factors also play a prominent role in how a child interprets and responds to stimulation. Among various learning perspectives, social learning theory attempts to incorporate these factors into its explanation of behavior and development.

Social Learning Theory

Social learning theory emphasizes the importance of learning through observation and imitation of the behaviors displayed by others. Social learning theorists start with the assumption that whether an individual will be friendly, outgoing, confident, and honest rather than shy and perhaps hostile and untrustworthy largely depends on the socialization practices of parents and caregivers throughout that person's childhood. Although operant and classical conditioning play a substantial role, social learning theorists underscore **observational learning,** the acquisition of behaviors from listening to and watching other people, as a particularly important means of acquiring new behaviors. The two-year-old who stands before a mirror pretending to shave in imitation of his father is displaying observational learning. Similarly, you may have witnessed the embarrassment of a parent whose three-year-old has uttered a profanity, a behavior probably acquired by the same process.

According to Albert Bandura, psychology's best-known spokesperson for social learning, a society could never effectively convey complex language, social and moral customs, or other achievements to its younger members without extensively relying on observational learning. Bandura (1965) notes that significant learning occurs, often completely without error, through the act of watching and imitating another person, a *model*. For example, girls in one region of Guatemala learn to weave simply by watching an expert, an approach to learning new skills common to the fields, homes, and shops of communities all over the world. Social learning theorists propose that many kinds of complex social activities, including the acquisition of gender roles, aggression, prosocial responses (such as willingness to assist others), resistance to temptation, and other facets of moral development, are learned primarily through observing others (Bandura & Walters, 1963).

In accounting for the acquisition of complex behaviors, Bandura has often referred to cognitive processes within his theory, now known as *social cognitive theory*. Bandura (1989) believes that four sets of cognitive processes are especially important

social learning theory
Theoretical approach emphasizing the importance of learning through observation and imitation of behaviors modeled by others.

observational learning
Learning that takes place by simply observing another person's behavior.

Social learning theory emphasizes the important role that observation of another person's behavior plays in learning. By brushing her doll's hair, this preschooler is imitating the same activity that she herself is experiencing—having her own hair brushed by her mother. Social learning provides an important mechanism by which she and others acquire many desirable customs and behaviors in their society.

in observational learning. Attentional processes determine what information will be acquired from models, and memory processes convert these observations into stored mental representations. Production processes then transform these mental representations into matching behaviors, and motivational processes define which behaviors are likely to be performed. As each of these processes becomes more sophisticated, observational and other forms of learning become increasingly refined and proficient, and the child becomes more effective in regulating his or her own behavior (Grusec, 1992).

Learning Theory and Themes in Development

As our discussions of behavior analysis and social cognitive theory suggest, not all learning theorists share the same views about the prime determinants of development. What stance do behavior analysts and social cognitive theorists take on the six major developmental themes we introduced at the beginning of this chapter?

■ *Nature/Nurture*   Behavior analysts believe that although biological and genetic factors may limit the kinds of responses that can be performed and help to define which events are reinforcing or punishing, it is the environment that controls behavior. For behaviorists, a child's functioning is the outcome of a history of associated behaviors and consequences. In social cognitive theory, biological and other internal factors along with the environment are believed to play a mutual, interactive role in contributing to development (Bandura, 1989).

■ *Sociocultural Influence*   Behaviorists believe that although societies differ in the responses viewed as desirable or unacceptable, the mechanisms of learning are universal for individuals in all cultures. Rewards and punishments delivered in the immediate environment are a key to understanding development. Social learning theorists give sociocultural context more emphasis than behaviorists do by pointing out, for example, that advances in communication technology such as television expand the opportunity for children and adults to acquire many novel skills and patterns of behavior through observational learning.

■ *Child's Active Role*   In keeping with their strong experiential emphasis, behaviorists believe the child's role in development is passive. Skinner claimed that "a person does not act upon the world, the world acts upon him" (1971, p. 211). According to Skinner, psychologists should abolish references to unobservable mental or cognitive constructs such as motives, goals, needs, or thoughts in their explanations of behavior. Bandura's social cognitive theory differs from behavior analysis by embracing mental and motivational constructs and processes for interpreting and understanding others as well as the self. Social cognitive theory therefore confers a much more active status on the child than does behavior analysis.

■ *Continuity/Discontinuity*   Both behavior analysts and social learning theorists consider development to be continuous rather than stagelike. Any departure from this pattern would stem from abrupt shifts in environmental circumstances, such as when the child enters school or the adolescent enters the work environment.

■ *Individual Differences*   The general principles of learning apply to all individuals. Individual differences arise primarily from the unique kinds of experiences each person receives, for example, the specific models she or he is exposed to or the particular behaviors rewarded by others in the environment.

■ *Interaction Among Domains*   Whereas behavior analysts explain development in all domains in terms of the basic principles of learning, social cognitive theorists stress that learning is linked to the child's physical, cognitive, and social development. Thus this latter perspective acknowledges the interaction among different domains of development by recognizing that the child's learning is a consequence of what he or she feels, believes, and thinks.

Cognitive-Developmental Approaches

According to **cognitive-developmental theory,** behavior reflects the emergence of various cognitive *structures,* organized units or patterns of thinking, that influence how the child interprets experience. Cognitive-developmental theories tend to share the fundamental assumption that normal children display common intellectual, emotional, and social capacities despite widely varying experiences. Most three- and four-year-olds around the world, for example, believe that a gallon of water, when poured from one container to another of a different shape, changes in amount or quantity, an error children rarely make once they reach seven or eight years of age. Cognitive-developmental theorists explain this profound change in reasoning in terms of children acquiring new ways of understanding their world.

The most extensive and best-known cognitive-developmental theory was put forward by Jean Piaget. His vigorous defense of physical and mental *action* as the basis for cognitive development (Beilin & Fireman, 1999) and his belief that intellectual capacities undergo *qualitative* reorganization at different stages of development have had a monumental impact, not only on developmental psychologists but also on educators and other professionals working with children.

Piaget's Theory

Piaget's vision of human development was based on two overriding assumptions about intelligence: (1) it is a form of biological adaptation, and (2) it becomes organized as the individual interacts with the external world (Piaget, 1971). Thus, for Piaget, thinking exhibits two inborn qualities. The first is **adaptation,** a tendency to adjust or become more attuned to the conditions imposed by the environment. The second is **organization,** a tendency for intellectual structures and processes to become more systematic and coherent. Just as arms, eyes, lungs, heart, and other physical structures assemble and take shape to carry out biological functions, so do mental structures array themselves in ever more powerful patterns to support more complex thought. These changes, however, depend on the opportunity to look and touch, handle and play with, and construct and order the rich assortment of experiences stemming from action on the environment. From the abundant encounters provided in commonplace physical and social experiences, the child confronts unexpected and puzzling outcomes that ultimately lead to reorganizations in thought.

● **Schemes**   The basic mental structure in Piaget's theory is a **scheme,** a coordinated and systematic pattern of action or way of reasoning. A scheme is a kind of template for acting or thinking applied to similar classes of objects or situations. The infant who sucks at her mother's breast, at her favorite pacifier, and at her thumb is exercising a scheme of sucking. The toddler who stacks blocks, pots and pans, and then shoe boxes is exercising a scheme of stacking. The six-year-old who realizes that his eight Matchbox cars can be stored in an equal number of boxes regardless of how they are scattered about the floor is also exercising a scheme, this time one concerned with number.

The infant's schemes are limited to patterns of action applied to objects: sucking, grasping, shaking, and so forth. The older child's schemes will often involve mental processes and be far more complex as he or she reasons about such things as classes of objects, number, or spatial relations, and, by adolescence, the meaning of life and the origins of the universe. For Piaget, earlier schemes set the stage for constructing new and more sophisticated schemes. From simple reflexes such as grasping and sucking emerge schemes for holding or hugging or hitting. And from these actions children construct new schemes—for categorizing objects, for relating to family and friends, and so forth.

● **Assimilation and Accommodation**   Piaget believed that schemes change through two complementary processes. The first, **assimilation,** refers to the process

Jean Piaget's keen observations and insights concerning the behavior of children laid the groundwork for his theory of cognitive development. Piaget's ideas about how thinking develops have influenced psychologists, educators, and many others in their attempts to understand children.

cognitive-developmental theory   Theoretical orientation, most frequently associated with Piaget, emphasizing the active construction of psychological structures to interpret experience.

adaptation   In Piagetian theory, the inborn tendency to adjust or become more attuned to conditions imposed by the environment; takes place through assimilation and accommodation.

organization   In Piagetian theory, the inborn tendency for structures and processes to become more systematic and coherent.

scheme   In Piagetian theory, the mental structure underlying a coordinated and systematic pattern of behaviors or thinking applied across similar objects or situations.

assimilation   In Piagetian theory, a component of adaptation; process of interpreting an experience in terms of current ways (schemes) of understanding things.

of interpreting an experience in terms of current ways of understanding things. The second, **accommodation,** refers to the modifications in behavior and thinking that take place when the old ways of understanding, the old schemes, no longer fit. To illustrate these two processes, consider the toddler who has begun to walk. He freely moves about the floor of his home, but when approaching the steps leading to either the bedroom upstairs or the basement below, he pauses, says "Stairs," and turns away. He does the same thing when coming across sets of stairs while visiting his grandmother's or neighbor's house. He recognizes, in other words, perhaps after repeatedly hearing his parents say, "Stop! You'll fall down!" and maybe even experiencing a fall on some steps, that stairs are forbidden and *assimilates* other instances of staircases within this scheme or knowledge of "things that can cause me to fall."

One early winter day, when the temperature has dropped below freezing, this same toddler and his father go for a walk outdoors. Following some distance behind, the father suddenly shouts, "Stop! You'll fall down!" The toddler appears puzzled, looks around as if searching for something, and utters, "Stairs." His father, sensing his son's confusion, points to the ice on the sidewalk and adds, "There aren't any stairs here, but you can fall down on ice, too." Through this new encounter, the child comes to *accommodate* his understanding of "things that cause me to fall" to include not just stairs but also ice and, eventually, perhaps a slippery rug or toys left lying about on the floor. So, too, when the baby first begins to drink from a cup instead of feeding from her mother's breast, she must accommodate to this new experience: shape her lips and mouth in new ways to take in the milk. In a similar manner throughout development, the child's intellectual capacities become reshaped and reorganized as the child attempts to adjust—that is, accommodate—to new experiences.

For Piaget, assimilation and accommodation are complementary aspects of all psychological activity, processes engaged in a constant tug of war in the never-ending goal of acquiring understanding (Valsiner, 1998). Fortunately, adaptation in the form of newer and more complex schemes is the result of this continuous dynamic. The outcome of adaptation is a more effective fitting together of the many pieces of knowledge that make up the child's understanding. The process by which assimilation and accommodation bring about more organized and powerful schemes for thinking is called **equilibration.** Each new experience can cause imbalance, which can be corrected only by modification of the child's schemes. In trying to make sense of his or her world, the child develops more adaptive ways of thinking.

● **The Piagetian Stages**   During some periods of development, schemes may undergo rapid and substantial modification and reorganization. The more effective levels of knowledge that emerge from these restructurings are the basis for different stages in Piaget's theory of development. Piaget proposed that development proceeds through four stages: *sensorimotor, preoperational, concrete,* and *formal*. Much more will be said about each of these stages in the chapter titled "Cognition: Piaget and Vygotsky"; however, Table 1.1 briefly identifies them. Each higher stage is defined by the appearance of a qualitatively different level of thinking, an increasingly sophisticated form of knowledge through which the child displays greater intellectual balance for responding to the environment. However, each new stage does not suddenly appear full-blown; it arises from the integration and incorporation of earlier ways of thinking.

Piaget's wide range of observations, his frequently surprising findings about what infants and children can and cannot do, and his challenging theoretical explanations and assumptions have sparked a wealth of research on cognitive, social, and moral development. Many researchers applaud his innovative conceptualizations concerning development but disagree with Piaget's specific interpretations for them. For example, Piaget vigorously embraced the notion of children as active participants in their own development, a viewpoint that others have widely adopted (Siegler & Ellis, 1996). However, the central concept of qualitative differences in thinking between children and adults, and particularly of stagelike transformations, has been far less favorably received (Fischer & Bidell, 1998; Thelen & Smith, 1994). We will consider

accommodation   In Piagetian theory, a component of adaptation; process of modification in thinking (schemes) that takes place when old ways of understanding something no longer fit.

equilibration   In Piagetian theory, an innate self-regulatory process that, through accommodation and assimilation, results in more organized and powerful schemes for adapting to the environment.

TABLE 1.1	Piaget's Stages of Cognitive Development	
Stage	**Emerging Cognitive Structure (schemes)**	**Typical Achievements and Behaviors**
Sensorimotor (birth until 1½–2 years)	Sensory and motor actions, initially reflexes, quickly differentiate by means of accommodation and co-ordinate to form adaptive ways of acting on the environment.	Infants suck, grasp, look, reach, and so forth, responses that become organized into complex activities such as hand-eye coordination, knowledge of space and objects, and eventually rudimentary symbols designed to solve problems and understand the physical world.
Preoperational (1½–7 years)	Symbols stand for or represent objects and events, but communication and thought remain relatively inflexible.	Children begin to acquire language and mental representations, but thought remains unidimensional and oriented around the self.
Concrete Operational (7–11 years)	Cognitive operations permit logical reasoning about concrete objects, events, and relationships.	Children are no longer fooled by appearance, and they can reason more systematically with respect to classes, number, and other characteristics of their physical and social world.
Formal Operational (11 years and above)	Operations can be performed on operations. Thought becomes abstract, and all possible outcomes can be considered.	Adolescents and adults are able to reason about hypothetical outcomes. Abstract issues (e.g., religion, morality, alternative lifestyles) are systematically evaluated.

Piaget's theory and the many pieces of evidence that support or challenge his views more fully in the chapter titled "Cognition: Piaget and Vygotsky."

Piaget's Theory and Themes in Development

How does Piaget's theory address the six major themes of development?

■ *Nature/Nurture*   Piaget theorized that a number of biologically based factors contribute to cognitive development. Among them is maturation, the gradual unfolding over time of genetic programs for development. Another factor is the child's inherent tendency to act, physically or mentally, on the environment. Nevertheless, for Piaget development is clearly the product of the interaction of these factors with experience.

■ *Sociocultural Influence*   For Piaget, children develop in much the same way in all cultures around the world because of their similar biological makeups and the common physical and social world to which all humans must adapt. Different cultural or educational opportunities, however, can affect the speed and ultimate level of achievement in cognitive development.

■ *Child's Active Role*   In Piaget's theory, knowledge is *constructed,* that is, created and formed by the continuous revision and reorganization of intellectual structures in conjunction with experience. Piaget's constructivist model depicts a mind actively engaged in knowing and understanding its environment. Thinking is active. That activity leads to increasingly effective ways of thinking. Children, then, are highly active participants in determining what they learn and how they understand reality.

■ *Continuity/Discontinuity*   Although recognizing continuous changes, Piaget's theory focuses on the ways schemes undergo reorganization and change to form distinctive stages in development. In his later writings and conversations, Piaget began to downplay the importance of stages (Piaget, 1971; Vuyk, 1981). He believed that an overemphasis on stages had led to too much concern with describing periods of intellectual stability or equilibrium when, in fact, cognition is always undergoing

development. Cognitive development, he eventually concluded, is more like a spiral in which change constantly occurs, although sometimes at faster rates than at other times (Beilin, 1989).

■ *Individual Differences*   Piaget placed very little emphasis on individual differences in development. His goal was to identify the principles that applied to cognitive and other aspects of development in all children.

■ *Interaction Among Domains*   Piaget's theory has implications for many domains of development. For example, his ideas about cognitive development have been used to explain changes in communication, moral thinking, and aspects of *social cognition* such as how children understand the thoughts, intentions, feelings, and views of others. Nevertheless, Piaget has been criticized for paying relatively little attention to how social and emotional domains influence cognitive development.

Information-Processing Approaches

Computer information processing as a metaphor for human thinking has generated so many models and theories that it is difficult to single out any one approach as a prototype (Klahr & MacWhinney, 1998). However, one common thread evident in any **information-processing** point of view is the notion that humans, like computers, have a *limited capacity* for taking in and operating on the vast amount of information available to them. Thus changes in cognitive structures (for example, short- and long-term memory) and processes (e.g., strategies, rules, and plans associated with attending, remembering, and decision making) are an essential component to explaining how older children might process information more fully and effectively than younger children.

What sets an information-processing theory apart from many other theories is its detailed effort to explain exactly how the child comes to identify the letters of the alphabet, remember the multiplication tables, recall the main ideas of a story, give a classmate directions to his or her home, or decide whether it is safe to cross the street. For example, how does a six-year-old solve addition problems? She may have practiced this activity over and over and learned the answer to each particular problem by rote over many months of exposure to them. Or she may rely on some kind of strategy that permits her to consistently arrive at the correct answer. For example, she could start with the first number of the addition problem and then add one unit the number of times indicated by the second number. Thus, for the problem 3 + 5, she may begin at 3 and add 1 to it the necessary five times to arrive at the correct answer.

How could we tell whether one child was engaging in the first procedure, retrieving information from long-term rote memory, and another child the second procedure of utilizing a rule to determine the answer? One clue could come from the length of time it takes to solve various addition problems. If a child is using the first technique, she can be expected to solve each problem in about the same length of time. If she uses the second technique, however, she will likely take somewhat longer to answer a problem in which the second number is very large than when it is very small. We may also see the child producing other observable behaviors, such as holding up three fingers to begin with and counting off additional fingers to arrive at the correct answer.

As this example illustrates, information-processing theorists frequently attempt to describe the rules, strategies, and procedures that children employ to complete a task and that help them to remember, make inferences, and solve problems. Why has this approach become popular in developmental psychology? One reason is disenchantment with learning, Piagetian, and other perspectives for explaining behavior. For instance, although learning theories attempt to identify which abilities are learned, they have offered few insights into how the child's mind changes with age in learning these abilities. Piaget's cognitive-developmental theory is concerned with this issue,

information processing
Theoretical approach that views humans as having a limited ability to process information, much like computers.

but his explanations have been difficult to translate into ideas about how the mind actually functions. Moreover, the information-processing approach can be extended to account for development in many other domains, including language acquisition, peer relationships, and even social and personality development. Not surprisingly, given its breadth of application, information-processing approaches are discussed further in a number of the chapters that follow.

Information-Processing Approaches and Themes in Development

Because of the wide variety of information-processing models theorized to account for changes in cognitive development, we can draw only broad conclusions concerning their positions on the various themes in development.

■ *Nature/Nurture*   Information-processing models have said little about the nature versus nurture debate. Some basic capacities to perceive and process information are assumed at or before birth, and the system may be attuned to respond in certain ways, for example, to language and other kinds of information. The environment has an obvious impact on development because it provides input for processing by the mind. The implicit assumption in most models is that basic cognitive structures and processes interact with experience to produce changes in the system.

■ *Sociocultural Influence*   As in the case of learning theory, the sociocultural context of development has largely been ignored by information-processing theorists. This is probably because researchers have typically focused on identifying how the mind operates on specific problems rather than on how the mind is affected by the kinds of problems a culture presents to it.

■ *Child's Active Role*   The computer is often viewed as a metaphor for human information processing and is generally perceived as a passive machine that must be programmed. However, few information-processing theorists extend this notion to the human mind. Although we do, of course, react to the environment, we also initiate and construct strategies and procedures that assist in processing information more effectively. From this perspective, children take an increasingly active role in controlling their own learning and development.

■ *Continuity/Discontinuity*   In most information-processing models, cognitive development is theorized to undergo quantitative rather than qualitative changes. For example, children retain increasing numbers of items in both short-term and long-term memory and interpret information and apply various strategies more efficiently and effectively with development. Similarly, the acquisition of new strategies for storing and retrieving information, new rules for problem solving, and new ways of thinking about and processing information are interpreted as shifts in ability that come about because of relatively small, continuous improvements in the capacity to process information.

■ *Individual Differences*   Many information-processing theories pay little heed to individual differences in development. However, their potential to explain such differences in terms of variations in rules, strategies, and other procedures for processing information is considerable.

■ *Interaction Among Domains*   A notable limitation of many information-processing models is their failure to consider emotional, motivational, and other domains of behavior. How social factors such as instructions, modeling, and the cultural context of learning lead to developmental changes in processing information is also rarely spelled out (Klahr, 1989). However, as already noted, information-processing approaches have been extended to other domains of development including language and social and personality development.

TABLE 1.2	Erikson's Stages of Psychosocial Development	
Stage	**Adaptive Mode**	**Significant Events and Outcomes**
Basic Trust Versus Mistrust (birth to 1 year)	Incorporation—to take in (and give in return)	Babies must find consistency, predictability, and reliability in their caregivers' behaviors to gain a sense of trust and hope.
Autonomy Versus Shame and Doubt (1–3 years)	Control—to hold on and to let go	The child begins to explore and make choices in order to understand what is manageable and socially acceptable.
Initiative Versus Guilt (3–6 years)	Intrusion—to go after	The child begins to make plans, set goals, and persist in both physical and social exchanges to gain a sense of purpose and remain enthusiastic even in the face of inevitable frustration.
Industry Versus Inferiority (6 years to puberty)	Construction—to build things and relationships	The child acquires skills and performs "work" in the form of becoming educated and supporting the family in order to feel competent and attain a sense of achievement.
Identity Versus Identity Confusion (puberty to adulthood)	Integration—to be oneself (or not be oneself)	The adolescent attempts to discover his or her identity and place in society by trying out of many roles in order to answer the question, "Who am I?"
Intimacy Versus Isolation (young adulthood)	Solidarity—to lose and find oneself in another	Having achieved a sense of identity, the young adult can now share himself or herself with another to avoid a sense of isolation, self-absorption, and the absence of love.
Generativity Versus Stagnation (middle adulthood)	Productivity—to make and to take care of	The adult produces things and ideas through work and creates and cares for the next generation to gain a sense of fulfillment and caring.
Integrity Versus Despair (old age)	Acceptance—to be (by having been) and to face not being	The older adult reviews and evaluates his or her life and accepts its worth, even if he or she has not reached all goals, to achieve a sense of wisdom.

Erikson's Psychosocial Approach

For the most part, the theoretical models we have examined so far have been concerned with learning and cognitive development. With *psychosocial* models, we shift to a substantially greater focus on emotions and personality. At one time, Freud's theory of personality was extremely influential in explaining emotional and personality development. However, Erikson's theory has gained far greater attention in recent years. Like Freud, Erikson theorized that personality development progresses through stages. During each stage, the child must resolve conflicts between needs or feelings and external obstacles. The satisfactory resolution of these conflicts leads to a healthy personality and a productive lifestyle. But in contrast to Freud, Erikson included several additional stages during adulthood, and he gave socialization and society far greater importance in his theory.

Psychosocial Theory

In his classic work *Childhood and Society* (1950), Erikson outlined eight stages of development, as summarized in Table 1.2. During the first stage, for example, Erikson theorized that *incorporation* or taking in is the primary mode for acting adaptively toward the world. In Erikson's view, this mode of activity extends beyond the mouth and includes other senses, such as looking and hearing, and motor systems, such as reaching and grasping, systems designed to expand the infant's resources for absorbing and responding to reality. Each subsequent stage identified another important mode for adapting to the environment.

Society, according to Erikson, plays a critical role in shaping and forming reality for the child. Communities create their own demands and set their own criteria for socializing the child. In one society an infant may be permitted to breast-feed whenever hungry over a period of several years, whereas infants in another society may be nursed or bottle-fed on a rigid schedule and weaned within the first year of life. In another example, the timing and severity of toilet training, as well as the means by which caregivers initiate it, may differ vastly from one society to another. Cultures differ in the requirements imposed on the child, yet each child must adapt to his own culture's regulations. Thus Erikson's **psychosocial theory of development** highlights the child's composite need to initiate adaptive modes of functioning while meeting the variety of demands framed by the society in which she lives.

Erikson theorized that the individual confronts a specific crisis as society imposes new demands in each stage. The resolution of each crisis may or may not be successful, but triumphs at earlier stages lay the groundwork for the negotiation of later stages. Moreover, each society has evolved ways to help individuals meet their needs. Caregiving practices, educational programs, social organizations, occupational training, and moral and ethical support are examples of cultural systems established to foster healthy, productive psychosocial development.

A common theme underlying the various features of Erikson's theory is the search for **identity,** or the acceptance of both self and one's society. At each stage, this search is manifested in a specific way. The needs to develop a feeling of trust for a caregiver, acquire a sense of autonomy, initiate exchanges with the world, and learn and become competent in school and other settings are examples of how the infant and child discovers who and what she or he is and will become. During adolescence, the individual confronts the issue of identity directly. But the answer to "Who am I?" is elaborated and made clearer as the individual progresses through each psychosocial stage.

In summary, Erikson's views of personality development highlighted the practices society uses to encourage and promote healthy social and personality development. However, he painted development with a broad brush, and consequently his theory is frequently criticized for its vagueness. Still, just as Piaget identified meaningful issues in cognitive development, Erikson—regardless of the precision of his specific formulations—had a flair for targeting crucial issues in social and personality development.

Erik Erikson outlined eight stages of personality development. His psychosocial theory emphasized that at each stage, individuals must successfully adapt to new forms of demands placed on them by society. He also stressed that cultures frequently differ in how they help individuals to negotiate these demands.
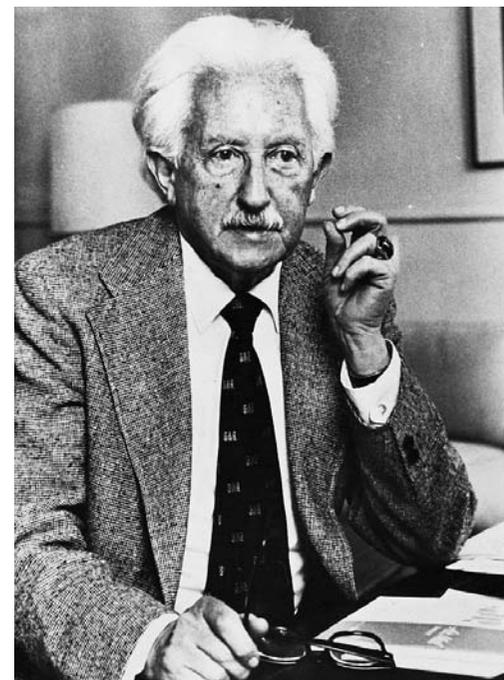
Psychosocial Theory and Themes in Development

Our discussion of Erikson's theory has already focused on a number of themes in development, but let's consider them once more.

■ *Nature/Nurture*   A biological contribution to behavior, extended from Freud's theory, is evident in Erikson's positions as well. Yet psychosocial theory must be considered interactionist, given the momentous role the presence and absence of appropriate socializing experiences play in resolving conflicts that arise at every stage.

■ *Sociocultural Influence*   The broader sociocultural context in which caregivers encourage children to master, explore, and engage in their physical and social environment, especially during the early years of life, plays a critical role in Erikson's theory of development. For Erikson, the sociocultural context is a key factor in understanding an individual's personality and social relationships.

■ *Child's Active Role*   In Erikson's theory, the emphasis on establishing an identity for self within society suggests an active role for the child in development. Each stage, in fact, identifies a particular task or way to effectively adapt to sustain a healthy personality.

■ *Continuity/Discontinuity*   Erikson identified eight stages in personality development. The successful negotiation of earlier stages lays the groundwork for continued psychological growth. The individual unable to work through a crisis at one time, however, may still effectively resolve it at a later stage.

psychosocial theory of development Erikson's theory that personality develops through eight stages of adaptive functioning to meet the demands framed by society.

identity In Eriksonian psychosocial theory, the acceptance of both self and society, a concept that must be achieved at every stage but is especially important during adolescence.

■ *Individual Differences*   The psychosocial stages are common to every individual in every culture. However, the success with which each stage is negotiated can vary dramatically from one individual to another and from one society to another. Although not specifically focused on individual differences in development, Erikson's theory offers many insights into how and why these differences might come about.

■ *Interaction Among Domains*   Erikson links social, emotional, and cognitive development together in the individual's efforts to achieve identity. For example, a sense of trust emerges from taking in through the senses as well as the motor system; a sense of industry reflects intellectual competence as well as the ability to interact effectively with others; and discovering one's identity requires the integration of all of one's psychological skills and competencies.

Contextual Approaches

Psychologists have long recognized that children live in vastly different circumstances and that these differences can have a dramatic influence on development. Some children grow up in households with a single parent, others with two parents, and still others with grandparents and perhaps aunts and uncles; children in foster care, on the other hand, may be shuffled frequently from one family to another. In addition, siblings within the same family may receive quite different experiences as a function of being the eldest or youngest or being singled out for certain kinds of treatment and expectations by family members. Number of siblings, economic resources, space and privacy, independence, and emotional atmosphere are among the vast assortment of factors that vary in the immediate surroundings of children.

Differences in the contexts of development extend far beyond a child's immediate family, however. Physical surroundings, access to schools, job opportunities, technological innovations, natural disasters, political systems, and war, as well as the cultural dictates of the community, influence the way children are reared. Some of these circumstances will be more supportive of development than others. Apart from the physical and sociocultural contexts in which each child lives is still another factor: the innate and species-specific predispositions, the biological context that equips the child to learn and develop.

Developmental theories usually focus on immediate experience, defined narrowly in terms of contemporary circumstances and recent events, and how it affects devel-

Contextual approaches to development give recognition to the dramatic impact that broad sociocultural factors can have on children's lives. These children in Ethiopia attend an overcrowded school with few educational resources, a setting far different from classrooms in most Western countries. Schooling and work, family structure, economic resources, and many other social contexts vary tremendously for children living in different cultures. Researchers need to consider these types of broad factors affecting children's lives in order to fully understand development.
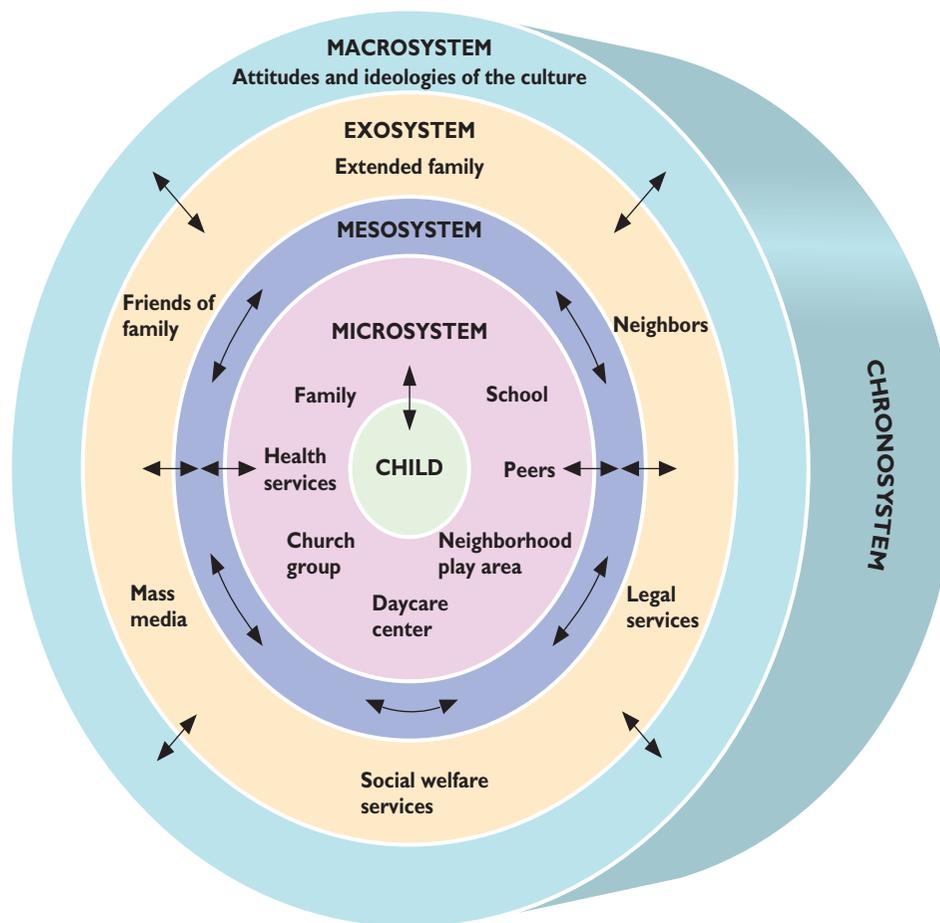
At the core of Bronfenbrenner's ecological model is the child's biological and psychological makeup, based on individual genetic and developmental history. This makeup continues to be affected and modified by the child's immediate physical and social environment (*microsystem*), as well as interactions among the systems within this environment (*mesosystem*). Other broader social, political, and economic conditions (*exosystem*) influence the structure and availability of microsystems and the manner in which they affect the child. Social, political, and economic conditions are themselves influenced by the general beliefs and attitudes (*macrosystem*) shared by members of the society, and all of these systems are affected by changes that occur over time (*chronosystem*).

Source: Adapted from Garabino, 1982.

opment. Yet culture, the historical legacy of earlier generations of a given social group, as well as the evolutionary pressures that have shaped humans to exist in their natural environment, are also major factors affecting growth. Put another way, the transformation from infant to child to adult takes place via a complex, multidirectional system of influences (Gottlieb, Wahlsten, & Lickliter, 1998). Contextual models, sometimes called *systems views,* are concerned with understanding this broad range of biological, physical, and sociocultural settings and how they affect development.

Ecological Systems Theory

The most extensive description of the context in which development proceeds has been put forth in the **ecological systems theory** proposed by Urie Bronfenbrenner (1989, 1995). Ecological theories in general stress the need to understand development in terms of the everyday environment in which children are reared, a concern that is seldom the focus of many other theories. For example, Bronfenbrenner claims that "much of contemporary developmental psychology is the science of the strange behavior of children in strange situations with strange adults for the briefest possible periods of time" (Bronfenbrenner, 1977, p. 513). Development, Bronfenbrenner believes, must be studied not only in the laboratory but also in the homes, schools, neighborhoods, and communities in which it takes place.

One of Bronfenbrenner's major theoretical contributions has been his comprehensive portrait of the environment—the ecological forces and systems that exist at several different but interrelated levels—and the bidirectional and reciprocal relationships that exist among them. These levels are shown in Figure 1.4. At the center

ecological systems theory
Bronfenbrenner's theory that development is influenced by experiences arising from broader social and cultural systems as well as a child's immediate surroundings.

is the child's biological and psychological makeup, including her cognitive capacities and socioemotional and motivational propensities (e.g., temperament and personality) for responding to and acting on the environment. Settings with the most immediate and direct impact on an individual's biological and psychological qualities make up the **microsystem.** These settings include the home and members of the household, social and educational circumstances (including classmates, teachers, and classroom resources), and neighborhoods (including physical layout, friends, and acquaintances).

The **mesosystem** includes the many interrelationships among the various settings within the microsystem. For example, opportunities and expectations within the family, such as access to books and learning to read or an emphasis on acquiring basic academic and socialization skills, may critically influence the child's experiences and success in another microsystem, the school. As another example, a child of divorced parents living in separate neighborhoods may undergo frequent moves between the two homes. Such a living arrangement may have repercussions for the range and kinds of friendships the child can establish with peers.

Social, economic, political, religious, and other settings can affect development either directly or indirectly via their impact on those who care for the child. These wider contexts make up the **exosystem.** In many countries today, for example, the child seldom is part of either parent's work environment. Nevertheless, the parent who encounters a difficult problem at work may bring frustrations home and express them through angry exchanges with members of the family. Urban renewal planned at city hall may have dramatic consequences for children and their interactions with peers, hopefully for the better, but perhaps not always with that effect. Skirmishes between rival villages or countries may bring poverty if the family breadwinner is killed in fighting.

The broadest context is the **macrosystem.** The macrosystem includes the spiritual and religious values, legal and political practices, and ceremonies and customs shared by a cultural group. Cultural beliefs about child rearing, the role of schools and family in education, the importance of maintaining kinship affiliations, tolerance for different lifestyles, and the ethical and moral conventions of a society affect the child both directly (through the socialization practices of the caregivers) and indirectly (through the cultural norms and strictures defining acceptable and desirable behavior).

These four systems do not remain constant over time. Historical events such as famines, wars, or other natural disasters can disrupt and devastate conventional microsystems such as schools and neighborhoods, as well as the social, economic, political, and religious framework of a community provided by the exosystem. The arrival of a new family member, the separation of parents, the move to a new home, and the loss of a peer are examples of other changes a child may experience at different times. The **chronosystem** is Bronfenbrenner's (1995) term for this temporal dimension of influence. Change is always taking place, and these time-linked shifts and transitions may have greater or lesser impact depending on when they occur during the child's development. Thus temporal events, too, have far-reaching consequences for each individual's psychological development.

Vygotsky's Sociohistorical Theory

Bronfenbrenner's ecological systems theory highlights the many different contexts in which development proceeds. Lev Vygotsky's sociohistorical theory blends these different levels into one overarching concept: culture. What is culture? It is, of course, the many facets of the environment that humans have created and continue to produce, including physical artifacts such as tools and furnishings. But even more important, culture includes language and the practices, values, and beliefs accumulated and communicated from one generation to the next via that language system. Culture, in other words, is the human-generated, historical accumulation of one's surroundings, and it has an enormous influence on the way children are reared. Vygotsky's **sociohistorical theory** emphasizes the unique collective wisdom com-

microsystem   In Bronfenbrenner's ecological systems theory, the immediate environment provided in such settings as the home, school, workplace, and neighborhood.

mesosystem   In Bronfenbrenner's ecological systems theory, the environment provided by the interrelationships among the various settings of the microsystem.

exosystem   In Bronfenbrenner's ecological systems theory, environmental settings that indirectly affect the child by influencing the various microsystems forming the child's immediate environment.

macrosystem   In Bronfenbrenner's ecological systems theory, major historical events and the broad values, practices, and customs promoted by a culture.

chronosystem   In Bronfenbrenner's ecological systems theory, the constantly changing temporal component of the environment that can influence development.

sociohistorical theory Vygotsky's developmental theory emphasizing the importance of cultural tools, symbols, and ways of thinking that the child acquires from more knowledgeable members of the community.

Lev Vygotsky's sociohistorical theory emphasizes that the cultural experiences to which children are exposed become an indispensable part of their development. This Maya Indian father in Guatemala is teaching his young child how to make bricks. In doing so, the parent is transmitting important information to his offspring. By becoming aware of how communities transmit knowledge to their younger members, we can begin to appreciate how culture influences attitudes, beliefs, and values, as well as cognitive development.

piled by a culture and transmitted to the child through ongoing, daily interactions with the more knowledgeable members of that society.

A central tenet of Vygotsky's sociohistorical theory is that as children become exposed to and participate in their communities, they begin to internalize and adopt, often with the guidance of a skilled partner such as a parent or teacher, the culturally based, more mature and effective methods of thinking about and solving problems (Wertsch, 1985; Wertsch & Tulviste, 1992). For example, in sitting down with and reading to the child, the caregiver demonstrates how important this activity is so that eventually the child comes to value it in her own behavior. Vygotsky believed that language is an especially important tool in this dialogue because it too is internalized by the child to affect thinking and problem solving.

One quality that permeates both ecological systems theory and sociohistorical views of development is the seamless alloy that embodies development as the child is affected by and, in turn, actively influences his or her surroundings (Sameroff, 1994). Development is dynamic, a never-ending *transaction* involving continuing, reciprocal exchanges: people and settings transform the child, who in turn affects the people and settings surrounding him, which further reshape the child in an endless progression.

Consider the baby born with low birth weight. Such an infant often displays a sharp, shrill cry and has difficulty nursing. Because of these factors and the baby's fragile appearance, a mother who might otherwise feel confident may become anxious and uncertain about her caregiving abilities. Her apprehensions may translate into inconsistent behaviors to which the baby, in turn, responds with irregular patterns of feeding and sleeping. These difficulties further reduce the mother's confidence in her abilities and enjoyment of her baby, leading to fewer social interactions and less positive stimulation for the infant. As a consequence, achievements in other areas of development, such as language acquisition, may be delayed. But what factor, precisely, caused these delays? To answer this question, we might point to the child's low birth weight or the mother's avoidance of her infant. However, these explanations fall far short of capturing the many complex elements that contributed to the mother's behaviors and the child's development.

Consider, also, the teenager unable to resist her boyfriend's urgings to engage in sexual activity. The consequences may set in motion a course of events that dramatically alters her role from that of a student with many friends and freedoms to that of

mother with many responsibilities and little time to herself. We can single out her pregnancy and the birth of a baby as critical factors in this turn of events. However, many other factors undoubtedly contributed, and to isolate any single cause does injustice to the complexity of human development.

The importance of these complex transactions becomes especially apparent when psychologists and others attempt to modify the course of development. The mother who has avoided her low-birth-weight infant because of a widening gulf of anxious reactions brought about by disappointments and unhappy exchanges will need more than simply to be told to start talking to her child to encourage his language development. She may need to gain a greater understanding of the typical problems such babies face, receive support and reinforcement for her efforts to initiate confident caregiving skills, and acquire richer insights into how development is affected by experiences, only some of which she can control. Will, for example, telling an adolescent to "Just Say NO" be effective, or must other programs be included in efforts to reduce teenage pregnancy?

Dynamic Systems Theory

It should be evident by now that contextual theories champion the importance of many interacting events to account for development. **Dynamic systems theory** captures this idea and at the same time stresses the emergence over time of more advanced, complex behaviors from these many interactions (Lewis, 2000). Of particular interest in this theoretical orientation is the notion that development reflects more than an accumulation of past events; it is, instead, the product of reorganizations that arise from the interactions of various levels of the system that could not be observed or expected from each component level by itself. One outcome of this reorganization is a stable, more adaptive way of responding (Novak, 1996; Thelen & Smith, 1994, 1998). When the right combinations of elements are present, new, sometimes unexpected, capacities emerge.

One of the more important implications of dynamic systems theory is that development is not controlled or regulated by any one particular factor, for example, by the brain, the genes, child-rearing practices, or any other specific influence. Instead, these various components are parts of a process that induces more organized and advanced behaviors or ways of thinking. Perhaps one of the best examples illustrating a dynamic systems view is learning to walk. As Thelen and Smith indicate, "Learning to walk is less a prescribed, logically inevitable process than a confluence of available states within particular contextual opportunities" (1994, p. 72). In more concrete terms, learning to walk results from a necessary combination of inherited human anatomical and neural systems, opportunities to exercise muscles, the desire to move around more effectively, the availability of acceptable surfaces and other supportive physical environments, and parenting that fosters exploration and sensorimotor development. Walking begins when the right blend of these come together. So, too, do new accomplishments in perception, language, cognition, and social behavior.

Ethological Theory

dynamic systems theory
Theoretical orientation that explains development as the emerging organization arising from the interaction of many different processes.

ethology   Theoretical orientation and discipline concerned with the evolutionary origins of behavior and its adaptive and survival value in animals, including humans.

Development is influenced by yet one more broad context: the biological history and constraints that have been a part of human evolution. In the nineteenth century, Darwin and other biologists concluded that adaptive traits—those that improved the likelihood of survival and thus ensured a greater number of offspring for further reproduction—were more likely to be found in succeeding generations of a species. Darwin hypothesized that through *evolution,* the descent of living species from earlier species of animals, humans inherited biological traits and capacities that improved their rate of survival. **Ethology** is the discipline specifically concerned with understanding how adaptive behaviors evolved and what functions they still serve for the continuation of the species.

Ethological theory surfaced in the 1930s when European zoologists such as Konrad Lorenz (1963/1966) and Niko Tinbergen (1951) investigated aggressive actions and the courtship and mating rituals of species such as the mallard duck and stickleback fish. Their observations led to explanations that took into account the *mutual* interchange between the inherited, biological bases of behavior and the environment in which that behavior was exhibited (Hinde, 1989). Ethological studies propose answers to questions such as the following: Why do babies cry or smile? Why might the ten-year-old fight or be friendly? Ethologists point out the adaptive value of such activities for the individual in the specific environment in which he or she is growing up.

Ethological theory proposes that human infants, as well as the offspring of other species of animals, begin life with a set of innate, *species-specific* behaviors common to all members. In human babies, these include reflexes such as sucking and grasping and may also include more complex activities such as babbling, smiling, and orienting to interesting sensory events—behaviors exhibited by normal infants around the world. These species-specific behaviors help infants meet their needs either directly, as in the case of sucking as a means of ingesting food, or indirectly, as in the case of smiling, a behavior that attracts caregivers and encourages them to provide support.

Besides innate behaviors, the young of many species are predisposed to certain kinds of learning that are not easily reversed, learning that may occur only during limited sensitive or *critical* periods in development. A **sensitive period** occurs when an organism is highly responsive or vulnerable to specific kinds of environmental stimulation. One of the best-known examples is found in various species of birds, including geese. Usually, shortly after hatching, the gosling begins to follow and prefers being near a particular object. Normally, that stimulus will be another goose, its mother. In displaying this tendency, the gosling not only learns about its species more generally but also increases the likelihood of being fed and protected. This form of learning that takes place during a brief interval early in life and is difficult to modify once established is known as **imprinting.**

Do other animals show imprinting? Mammals such as horses and sheep do. What about human infants? John Bowlby's (1969) theory of attachment suggests that they do, at least to some degree. Bowlby noted that the crying, babbling, and smiling behaviors of young infants signal needs and elicit supportive and protective responses from adults. These behaviors, along with following and talking in older infants, become organized and integrated with social and emotional reactions of caregivers to form the basis for attachment, a mutual system of physical, social, and emotional stimulation and support between caregiver and young. Many experts believe that the failure to form this strong emotional bond with a caregiver in infancy is linked to serious emotional and other problems that occur later in childhood, an issue that will be discussed more fully in the chapter titled "Emotion."

Contextual Approaches and Themes in Development

Contextual models generally agree on many of the themes in development, and where differences exist, they are most often found in ethological theories.

■ *Nature/Nurture*   Contextual theories differ widely in their emphasis on nature and nurture, but all recognize the importance of both to development. For ethologists, however, behaviors are closely linked to nature because they have helped, or continue to help, humans survive.

■ *Sociocultural Influence*   Perhaps more than any other theoretical orientation, contextual theories are concerned with the ways broad sociocultural patterns affect development. Contextual approaches often search for evidence of how the larger social systems and settings in which children are reared affect their behavior and shape their minds.

■ *Child's Active Role*   Contextual models, even those having an ethological focus, tend to view the child as actively engaged with the environment. In calling for

Konrad Lorenz, an ethologist, is being followed by young geese who have imprinted to him. Imprinting in young animals typically occurs to other members of the same species who, under normal circumstances, are present shortly after hatching or the birth of an animal. One question posed by ethologists is whether human infants also show some form of imprinting.

sensitive period   Brief period during which specific kinds of experiences have significant positive or negative consequences for development and behavior. Also called *critical period*.

imprinting   Form of learning, difficult to reverse, during a sensitive period in development in which an organism tends to stay near a particular stimulus.

their caregivers, exploring and playing, and seeking out playmates, infants and children elicit reactions from the adults and peers around them. Both individual and environment change in highly interdependent ways, and the relationship between the two is *bidirectional,* each influencing the other (Bell, 1968).

■ *Continuity/Discontinuity*   Most contextual models place little emphasis on qualitative changes in development. Instead, such models describe the continuous ebb and flow of interactions that transpire throughout development to produce incremental change. However, ethologists often emphasize that particular periods in development are critical for establishing certain competencies. For example, infancy is considered a crucial time for forming emotional ties with caregivers.

■ *Individual Differences*   Aside from ethological theories, contextual perspectives focus less on highlighting universal experiences that promote development and more on the unique configuration of circumstances that foster cognitive, linguistic, social, and personality development. Given the immense number of factors potentially affecting the child, individual differences are often an important aspect to be explained by such theories.

■ *Interaction Among Domains*   Not surprisingly, most contextual models are typically concerned with the entire fabric of human growth and claim substantial interactions among cognitive, linguistic, social, and other domains. Ethological theorists especially focus on the interrelationship between biological and other aspects of development.

FOR YOUR REVIEW

• What is learning? What are some of its basic mechanisms? How do behavior analysis and social learning theory differ in explaining what takes place during learning?

• What are the primary factors underlying change in Piaget's theory of cognitive development? How do schemes, assimilation, accommodation, and equilibration help to explain the increasingly adaptive and organized nature of cognition?

• What characteristics distinguish information-processing approaches from other theories of development?

• What is the focus and a common underlying theme in Erikson's theory of psychosocial development?

• What common assumptions underlie various contextual approaches to development, for example, Bronfenbrenner's ecological systems theory, Vygotsky's sociohistorical theory, dynamic systems theory, and ethological theory? How do they differ?

What Develops?

All theories of development, of course, are ultimately concerned with the simple question, "What develops?" As you have seen in this chapter, the answers differ. For learning theorists, what develops is a set of responses. For Piaget, it is a set of cognitive structures. For information-processing enthusiasts, it is mental structures and strategies for responding. For psychosocial theorists, it is identity. For most contextual theorists, it is a pattern of mutually supportive individual and cultural relationships. For ethologists, it is adaptive behaviors.

Theories, by giving us models for observing and interpreting behavior, have had an enormous influence on the way we view children and their development. Why so many different theories? The reason is that each brings an important perspective to our understanding of development. Some remind us of the importance of emotions, others of cognitive structures. Some keep us honest about the role of our biological nature; others perform the same service for the culture in which we are born and

reared. Various theories enrich and broaden our understanding of development. We will frequently draw on their contributions for interpreting the many behaviors of children. We hope you will, too.

As we have introduced developmental theories, we have also discussed their positions on six major themes of development. Table 1.3 summarizes these positions for the major theories introduced in this chapter. As you read further, you may find yourself revising your own stand on the six themes. We trace their presence throughout the remainder of this book with marginal cues placed beside important research and discussion that bear on each theme. Beginning with the chapter titled "Genetics and Heredity," we also open each chapter with a list of the most relevant themes discussed in it and conclude by summarizing how the themes have applied to the developmental domain under discussion.

WHAT DO YOU THINK?

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TABLE 1.3	The Main Developmental Theories and Where They Stand on the Six Themes of Development				
Theme	**Learning Theories**	**Piagetian Theory**	**Information-Processing Approaches**	**Erikson's Psychosocial Approach**	**Contextual Theories**
What roles do nature and nurture play in development?	Environment is more important than heredity.	Maturation sets limits on how rapidly development proceeds, but experience is necessary for the formation of cognitive structures. Interaction between nature and nurture.	Structures and processes presumably have an inherent basis, but experience is likely to be important for their effective operation.	Erikson stressed an interactional position that emphasizes the socialization demands of the society in which a child is reared, along with a biological contribution.	A major emphasis is the environmental factors that interact with biological structures. For ethologists, the environment elicits and influences biologically based patterns of behavior.
How does the sociocultural context influence development?	Sociocultural factors determine which behaviors are reinforced, punished, or available from models, but the principles of learning are considered to be universal.	The cognitive structures underlying thought are universal. Sociocultural context might affect the rapidity or final level of thinking, but sociocultural differences are not stressed.	The rules, strategies, and procedures acquired to perform tasks may differ from one culture to another but cultural differences have received little attention.	Sociocultural context is a major component of Erikson's theory.	Culture is a critical determinant of behavior although ethological principles of development are presumed to apply in all cultures.
How does the child play an active role in development?	In behavior analysis the child is not considered to be an active agent, but in social cognitive theory the child more actively engages the environment to determine what is learned.	Knowledge is based on underlying cognitive structures constructed by the child.	The child determines what information is processed and the rules, strategies, and procedures initiated to perform tasks.	The child is actively in search of an identity.	Biologically equipped to interact with the environment, the child plays a central role in determining what kind of environment is established, how it changes, and how it further affects behavior.
Is development continuous or discontinuous?	Continuous. Development is cumulative, consisting of the acquisition of greater numbers of learned responses.	Stagelike. Four qualitatively different stages emerge, each involving a reorganization of cognitive structures that permits more effective adaptation to the world.	Usually continuous. Development consists of the acquisition of more effective structures and processes for performing tasks.	Stagelike, although the individual may return to earlier stages to work through unresolved conflicts.	Continuous. Development involves transactions between the individual and the environment. Abrupt reorganization may take place, according to dynamic systems approaches.
How prominent are individual differences in development?	Individual differences are not emphasized; the laws of learning are universal. However, variations in experience can be a major source of individual differences.	Individual differences are not a primary focus of Piaget's theory.	Little emphasis is placed on individual differences. Variations in structures, strategies, and other processes help to explain individual differences in behavior.	Psychosocial stages are universal; however, individuals may proceed through and resolve each need in quite different ways.	Stresses the unique configuration of events that contribute to individual differences in explaining behavior.
How do the various domains of development interact?	Learning proceeds on many different fronts and is highly situational.	Stagelike advances in cognition have implications not only for thinking and problem solving but also for moral and social development.	Development is usually considered to be domain specific. However, recent efforts have been made to understand social and emotional relationships in terms of information-processing models.	Failure to progress through psychosocial stages may disrupt progress in many different domains besides personality development.	Because of the strong mutual interdependence between individual and environment, all aspects of development are closely interrelated.

C H A P T E R   R E C A P

SUMMARY OF TOPICS

What Is Development?

- Development refers to all the physical and psychological changes that occur throughout a human's lifetime.

- *Developmental psychology*, the discipline concerned with these changes, has several goals. One goal is to describe changes in behavior and mental processes that occur over time. A second goal is to understand the reasons development occurs in the way that it does. Another is to assist in the creation of *social policies* that will achieve particular objectives with respect to children and their development.

- Different theories have been proposed to assist in describing, explaining, and predicting behavior and its development. These theories differ in their answers to several important questions concerning the themes of development.

Six Major Themes in Developmental Psychology

- Six recurring issues must be addressed by every developmental theory.

What Roles Do Nature and Nurture Play in Development?

- Often described as the *nature-nurture debate,* this issue is concerned with how genetic and experiential variables interact to influence behavior.

How Does the Sociocultural Context Influence Development?

- Children grow up in a social environment and cultural community that can have a tremendous impact on the behaviors that are displayed.

How Does the Child Play an Active Role in Development?

- The interests, skills, and qualities displayed by children influence those who interact with them, but in addition, children may actively construct ways of interpreting their world.

Is Development Continuous or Discontinuous?

- Changes in behavior may stem from quantitative, incremental developmental advances or qualitative reorganization. Children's behavior also may be influenced by multiple strategies or ways of responding.

How Prominent Are Individual Differences in Development?

- No "average" child exists; this issue is concerned with the extent to which children display individual differences in various domains and how those differences come about.

How Do the Various Domains of Development Interact?

- Developmental psychologists are concerned with the "whole" child; thus they are interested in how skills and capacities acquired in some area affect other aspects of behavior.

The Study of the Child: Historical Perspectives

- Attitudes toward children have changed over the centuries.

The Concept of Childhood

- In medieval times, although recognized as vulnerable, children quickly became a part of adult society.
- Philosophers such as John Locke emphasized *empiricism,* the view that experience shapes the development of the individual, whereas others such as Jean Jacques Rousseau wrote about the curious and active nature of the child.

The Origins of Developmental Psychology

- The formal establishment of developmental psychology began with the careful study of children by several influential contributors during the nineteenth and early twentieth centuries.
- Baby biographers such as Charles Darwin and Wilhelm Preyer carried out the first systematic observations of individual children.
- G. Stanley Hall introduced the questionnaire method for studying large groups of children.
- Alfred Binet initiated the movement to study *individual differences* in children's behavior and abilities.
- Theorist James Mark Baldwin viewed the child as an active participant in his or her own cognitive and social development.
- Freud emphasized the importance of early experience on development and posited a series of *psychosexual stages* that children must successfully negotiate in order to demonstrate normal personality development.

The Continued Growth of Developmental Psychology in the Twentieth Century

- For much of the first half of the twentieth century, work was carried out on gathering descriptive information about children. Arnold Gesell and others focused on establishing norms of behavior. Other research began to be initiated to investigate the variables that might cause development.

Learning Theory Approaches

- *Behavior analysis* relies on two basic forms of learning, classical and operant conditioning to bring about behavioral change. *Social cognitive theory*, as outlined by Albert Bandura, adds *observational learning* as an important mechanism by which behavior is continuously modified and changed.

Cognitive-Developmental Approaches

- Jean Piaget's *cognitive-developmental theory* highlights the child's construction of *schemes* or patterns of acting on and thinking about the world. Through *assimilation* and *accommodation,* a child's schemes actively adapt to the demands of the environment by becoming more organized, conceptual, and logical. Cognitive development progresses through a series of qualitatively different stages according to Piaget's theory.

Information-Processing Approaches

- *Information-processing models* use the computer as a metaphor in accounting for cognitive development. Developmental differences in cognitive structures and processes such as rules, strategies, and procedures account for changes in attention, memory, thinking, and problem solving.

Erikson's Psychosocial Approach

- Erikson's *psychosocial theory of development* focuses on the sociocultural context in which behavioral needs are met. Personality development proceeds through a series of stages in which self and societal demands are resolved to construct one's *identity*. Individuals who successfully negotiate these demands become contributing members of society.

Contextual Approaches

- *Contextual models* view human development from a broader framework involving multiple, bidirectionally interacting levels of influence.

Ecological Systems Theory

- *Ecological systems theory* looks beyond the immediate experiences of family, peers, and friends and considers the broader sociocultural contexts in which development proceeds.

Vygotsky's Sociohistorical Theory

- Vygotsky's *sociohistorical theory* views culture as the historical legacy of a community and emphasizes the social interactions by which this heritage is transferred from others and adopted by the child to become part of his or her way of thinking.

Dynamic Systems Theory

- *Dynamic systems theory* proposes that new, complex, and sometimes qualitatively different behaviors arise from the interaction of events at many different levels in the system.

Ethological Theory

- *Ethological theory* pays special attention to the biological, evolutionary heritage each individual brings to the world as the basis for species-specific behaviors found to be adaptive in interacting with the environment.

What Develops?

- Theories differ greatly in their answers to what develops. However, each can bring an important perspective to an understanding of development and help to interpret the many behaviors displayed by children.