History, Theory, and Applied Directions

Not long ago, I left my Midwestern home to live for a year near the small city in northern California where I spent my childhood. One morning, I visited the neighborhood where I grew up—a place I had not seen since I was 12 years old.

I stood at the entrance to my old schoolyard. Buildings and grounds that had looked large to me as a child now seemed strangely small. I peered through the window of my first-grade classroom. The desks were no longer arranged in rows but grouped in intimate clusters. Computers rested against the far wall, near where I once sat. I walked my old route home from school, the distance shrunken by my longer stride. I stopped in front of my best friend Kathryn's house, where we once drew sidewalk pictures, crossed the street to play kick ball, and produced plays in the garage. In place of the small shop where I had purchased penny candy stood a childcare center, filled with the voices and vigorous activity of toddlers and preschoolers.

As I walked, I reflected on early experiences that contributed to who I am and what I am like today—weekends helping my father in his downtown clothing shop, the year my mother studied to become a high school teacher, moments of companionship and rivalry with my sister and brother, Sunday outings to museums and the seashore, and visits to my grandmother's house, where I became someone extra special.

As I passed the homes of my childhood friends, I thought of what I knew about their present lives. Kathryn, star pupil and president of our sixth-grade class—today a successful corporate lawyer and mother of two. Shy, withdrawn Phil, cruelly teased because of his cleft lip—now owner of a thriving chain of hardware stores and member of the city council. Julio, immigrant from Mexico who joined our class in third grade—today director of an elementary school bilingual education program and single parent of an adopted Central American boy. And finally, my next-door neighbor Rick, who picked fights at recess, struggled with reading, repeated fourth grade, dropped out of high school, and (so I heard) moved from one job to another over the following 10 years.

As you begin this course in child development, perhaps you, too, are wondering about some of the same questions that crossed my mind during that nostalgic neighborhood walk:

- In what ways are children's home, school, and neighborhood experiences the same today as they were in generations past, and in what ways are they different?
- How is the infant's and young child's perception of the world the same as the adult's, and how is it different?
- What determines the features that humans have in common and those that make each of us unique—physically, mentally, and behaviorally?
How did Julio, transplanted to a new culture at 8 years of age, master its language and customs and succeed in its society, yet remain strongly identified with his ethnic community?

Why do some of us, like Kathryn and Rick, retain the same styles of responding that characterized us as children, whereas others, like Phil, change in essential ways?

How does cultural change—employed mothers, child care, divorce, smaller families, and new technologies—affect children's characteristics and skills?

These are central questions addressed by child development, a field devoted to understanding constancy and change from conception through adolescence. Child development is part of a larger discipline known as developmental psychology, or, in its interdisciplinary sense, human development, which includes all changes we experience throughout the lifespan. Great diversity characterizes the interests and concerns of investigators who study child development. But all have a common goal: to describe and identify those factors that influence the consistencies and changes in young people during the first two decades of life.

The Field of Child Development

Look again at the questions just listed, and you will see that they are not just of scientific interest. Each is of applied, or practical, importance as well. In fact, scientific curiosity is just one factor that has led child development to become the exciting field of study it is today. Research about development has also been stimulated by social pressures to better the lives of children. For example, the beginning of public education in the early part of the twentieth century led to a demand for knowledge about what and how to teach children of different ages. Pediatricians' interest in improving children's health required an understanding of physical growth and nutrition. The social service profession's desire to treat children's anxieties and behavior problems required information about personality and social development. And parents have continually asked for advice about child-rearing practices and experiences that would promote the well-being of their child.

Our large storehouse of information about child development is interdisciplinary. It has grown through the combined efforts of people from many fields. Because of the need for solutions to everyday problems concerning children, researchers from psychology, sociology, anthropology, biology, and neuroscience have joined forces with professionals from education, family studies, medicine, public health, and social service, to name just a few. The field of child development, as it exists today, is a monument to the contributions of these many disciplines. Its body of knowledge is not just scientifically important but relevant and useful.

Domains of Development

To make the vast, interdisciplinary study of human constancy and change more orderly and convenient, development often is divided into three broad domains: physical, cognitive, and emotional and social. Refer to Figure 1.1 for a description and illustration of each. In this book, we will largely consider the domains of development in the order just mentioned. Yet we must keep in mind that they are not really distinct. Instead, they combine in an integrated, holistic fashion to yield the living, growing child. Furthermore, each domain influences and is influenced by the others. For example, in Chapter 4, you will see that new motor capacities, such as reaching, sitting, crawling, and walking (physical), contribute greatly to infants' understanding of their surroundings (cognitive). When babies think and act more competently, adults stimulate them more with games, language, and expressions of delight at the child's new achieve-
ments (emotional and social). These enriched experiences, in turn, promote all aspects of development.

You will encounter instances of the interwoven nature of all domains on almost every page of this book. Also, look for the Ask Yourself feature at the end of major sections. Within it, I have included Review questions, which help you recall and think about information you have just read; Apply questions, which encourage you to apply your knowledge to controversial issues and problems faced by parents, teachers, and children; Connect questions, which help you form a coherent, unified picture of child development; and Reflect questions, which invite you to reflect on your own development and that of people you know well. The questions are designed to deepen your understanding and inspire new insights.

**Periods of Development**

Besides distinguishing and then integrating the three domains, another dilemma arises in discussing development: how to divide the flow of time into sensible, manageable parts. Researchers usually segment child development into the following five periods. Each brings new capacities and social expectations that serve as important transitions in major theories:

1. **The prenatal period:** from conception to birth. This 9-month period is the most rapid time of change, during which a one-celled organism is transformed into a human baby with remarkable capacities for adjusting to life in the surrounding world.
2. **Infancy and toddlerhood:** from birth to 2 years. This period brings dramatic changes in the body and brain that support the emergence of a wide array of motor, perceptual, and intellectual capacities; the beginnings of language; and first intimate ties to others. Infancy...
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spans the first year; toddlerhood spans the second, during which children take their first independent steps, marking a shift to greater autonomy.

3. Early childhood: from 2 to 6 years. The body becomes longer and leaner, motor skills are refined, and children become more self-controlled and self-sufficient. Make-believe play blossoms and supports all aspects of psychological development. Thought and language expand at an astounding pace, a sense of morality becomes evident, and children establish ties with peers.

4. Middle childhood: from 6 to 11 years. Children learn about the wider world and master new responsibilities that increasingly resemble those they will perform as adults. Improved athletic abilities, participation in organized games with rules, more logical thought processes, mastery of basic literacy skills, and advances in self-understanding, morality, and friendship are hallmarks of this period.

5. Adolescence: from 11 to 18 years. This period initiates the transition to adulthood. Puberty leads to an adult-size body and sexual maturity. Thought becomes abstract and idealistic, and schooling becomes increasingly directed toward preparation for higher education and the world of work. Young people begin to establish autonomy from the family and define personal values and goals.

For many contemporary youths, especially those in industrialized nations, the transition to adult roles has become increasingly prolonged, resulting in a new period of development called emerging adulthood, which spans ages 18 to 25. Although emerging adults have moved beyond adolescence, they have not yet fully assumed adult roles. Instead, they intensify their exploration of options in love, career, and personal values prior to making enduring commitments. Because the period of emerging adulthood surfaced only during the past few decades, researchers have just begun to study it (Arnett, 2000; 2003). Very likely, it is your period of development. In later chapters, we will touch on milestones of emerging adulthood, which build on adolescent attainments. To find out more about this period, consult the mini-chapter entitled Emerging Adulthood, available as a supplement to this text.

With this introduction in mind, let's turn to some basic issues that have captivated, puzzled, and sparked debate among child development theorists. Then our discussion will trace the emergence of the field and survey major theories.

Basic Issues

Research on child development is a relatively recent endeavor. It did not begin until the late nineteenth and early twentieth centuries. Nevertheless, ideas about how children grow and change have existed for centuries. As these speculations combined with research, they inspired the construction of theories of development. A theory is an orderly, integrated set of statements that describes, explains, and predicts behavior. For example, a good theory of infant–caregiver attachment would (1) describe the behaviors of babies around 6 to 8 months of age as they seek the affection and comfort of a familiar adult, (2) explain how and why infants develop this strong desire to bond with a caregiver, and (3) predict the consequences of this emotional bond for future relationships.

Theories are vital tools for two reasons. First, they provide organizing frameworks for our observations of children. In other words, they guide and give meaning to what we see. Second, theories that are verified by research often serve as a sound basis for practical action. Once a theory helps us understand development, we are in a much better position to know how to improve the welfare and treatment of children.

As we will see later, theories are influenced by cultural values and belief systems of their times. But theories differ in one important way from mere opinion and belief: A theory’s continued existence depends on scientific verification. In other words, all theories must be tested using a fair set of research procedures agreed on by the scientific community. (We will consider research strategies in Chapter 2.)

The field of child development contains many theories with very different ideas about what children are like and how they change. The study of child development provides no ulti-
mate truth because investigators do not always agree on the meaning of what they see. In addition, children are complex beings; they change physically, cognitively, emotionally, and socially. As yet, no single theory has been able to incorporate and explain all these aspects. However, the existence of many theories helps advance knowledge as researchers continually try to support, contradict, and integrate these different points of view.

Although there are many theories, almost all take a stand on three basic issues: (1) Is the course of development continuous or discontinuous? (2) Does one course of development characterize all children, or are there many possible courses? (3) Are genetic or environmental factors more important in influencing development? Let’s look closely at each of these issues.

Continuous or Discontinuous Development?

Recently, the mother of 20-month-old Angelo reported to me with amazement that her young son had pushed a toy car across the living room floor while making a motorlike sound, “Brmmm, brmmm, brmmm,” for the first time. When he hit a nearby wall with a bang, Angelo let go of the car, exclaimed, “C’ash,” and laughed heartily.

“How come Angelo can pretend, but he couldn’t a few months ago?” queried his mother. “And I wonder what ‘Brmmm, brmmm’ and ‘Crash!’ mean to Angelo? Is his understanding of motorlike sounds and collision similar to mine?”

Angelo’s mother has raised a puzzling issue about development: How can we best describe the differences in capacities and behavior between small infants, young children, adolescents, and adults? As Figure 1.2 illustrates, major theories recognize two possibilities.

One view holds that infants and preschoolers respond to the world in much the same way as adults do. The difference between the immature and mature being is simply one of amount or complexity. For example, little Angelo’s thinking might be just as logical and well organized as our own. Perhaps (as his mother reports) he can sort objects into simple categories, recognize whether he has more of one kind than another, and remember where he left his favorite toy at child care the week before. Angelo’s only limitation may be that he cannot perform these skills with as much information and precision as we can. If this is so, then Angelo’s development is continuous—a process that consists of gradually adding more of the same types of skills that were there to begin with.

According to a second view, Angelo’s thoughts, emotions, and behavior differ considerably from those of adults. If so, then his development is discontinuous—a process in which new ways of understanding and responding to the world emerge at specific times. From this perspective, Angelo is not yet able to organize objects or remember and interpret experiences as

![Figure 1.2](image-url)
we do. Instead, he will move through a series of developmental steps, each of which has unique features, until he reaches the highest level of functioning.

Theories that accept the discontinuous perspective regard development as taking place in stages—qualitative changes in thinking, feeling, and behaving that characterize specific periods of development. In stage theories, development is much like climbing a staircase, with each step corresponding to a more mature, reorganized way of functioning. The stage concept also assumes that children undergo periods of rapid transformation as they step up from one stage to the next, followed by plateaus during which they stand solidly within a stage. In other words, change is fairly sudden rather than gradual and ongoing.

Does development actually occur in a neat, orderly sequence of stages? For now, let’s note that this is a very ambitious assumption that has faced significant challenges. We will review some influential stage theories later in this chapter.

One Course of Development or Many?
Stage theorists assume that children everywhere follow the same sequence of development. For example, in the domain of cognition, a stage theorist might try to identify the common biological and environmental factors that lead children to represent their world through language and make-believe play in early childhood, to think more logically and systematically in middle childhood, and to reason abstractly in adolescence.

At the same time, the field of child development is becoming increasingly aware that children grow up in distinct contexts, or unique combinations of genetic and environmental circumstances that can result in different paths of change. For example, a shy child who fears social encounters develops in very different contexts from those of a sociable agemate who readily seeks out other people (Kagan, 2003). Children in non-Western village societies encounter experiences in their families and communities that differ sharply from those of children in large Western cities. These different circumstances result in markedly different cognitive capacities, social skills, and feelings about the self and others (Rogoff, 2003; Shweder et al., 1998).

As you will see, contemporary theorists regard the contexts that shape development as many-layered and complex. On the personal side, these include heredity and biological makeup. On the environmental side, they include immediate settings, such as home, child-care center, school, and neighborhood, as well as circumstances more remote from children’s everyday lives—community resources, societal values and priorities, and historical time period. Finally, a special interest in culture has led child development researchers to be more conscious than ever before of diversity in development.

Relative Influence Of Nature And Nurture?
In addition to describing the course of development, each theory takes a stand on a major question about its underlying causes: Are genetic or environmental factors more important? This is the age-old nature-nurture controversy. By nature, we mean inborn biological givens—the hereditary information we receive from our parents at the moment of conception. By nurture, we mean the complex forces of the physical and social world that influence our biological makeup and psychological experiences before and after birth.

Although all theories grant at least some role to both nature and nurture, they vary in emphasis. For example, consider the following questions: Is the older child’s ability to think in more complex ways largely the result of an inborn timetable of growth? Or is it primarily influenced by stimulation from parents and teachers? Do children acquire language because they are genetically predisposed to do so or
because parents intensively teach them from an early age? And what accounts for the vast individual differences among children—in height, weight, physical coordination, intelligence, personality, and social skills? Is nature or nurture more responsible?

A theory’s position on the roles of nature and nurture affects how it explains individual differences. Some theorists emphasize stability—that children who are high or low in a characteristic (such as verbal ability, anxiety, or sociability) will remain so at later ages. These theorists typically stress the importance of heredity. If they regard environment as important, they usually point to early experiences as establishing a lifelong pattern of behavior. Powerful negative events in the first few years, they argue, cannot be fully overcome by later, more positive ones (Bowlby, 1980; Johnson, 2000; Sroufe, Egeland, & Kreutzer, 1990). Other theorists are more optimistic. They believe that change is possible and likely if new experiences support it (Greenspan & Shanker, 2004; Masten & Reed, 2002; Nelson, 2002).

Throughout this book, you will see that investigators disagree, often sharply, on the question of stability or change. The answers they provide are of great practical significance. If you believe that development is largely due to nature, then providing experiences aimed at promoting change would seem to be of little value. If, on the other hand, you are convinced of the supreme importance of early experience, then you would intervene as soon as possible, offering high-quality stimulation and support to ensure that children develop at their best. Finally, if you think that environment is profoundly influential throughout development, you would provide assistance any time children or adolescents face difficulties, believing that, with the help of favorable life circumstances, they can recover from early negative events.

A Balanced Point of View

So far, we have discussed the basic issues of child development in terms of extremes—solutions on one side or the other. As we trace the unfolding of the field in the rest of this chapter, you will see that the positions of many theorists have softened. Contemporary ones, especially, recognize the merits of both sides. Some theorists believe that both continuous and discontinuous changes occur. And some acknowledge that development can have both universal features and features unique to the individual and his or her contexts. Furthermore, an increasing number of investigators regard heredity and environment as inseparably interwoven, each affecting the potential of the other to modify the child’s traits and capacities (Huttenlocher, 2002; Reiss, 2003; Rutter, 2002). We will discuss these new ideas about nature and nurture in Chapter 3.

Finally, as you will see later in this book, the relative impact of early and later experiences varies greatly from one domain of development to another and even (as the Biology and Environment box on pages 10 and 11 indicates) across individuals! Because of the complex network of factors contributing to human change and the challenge of isolating the effects of each, many theoretical viewpoints have gathered research support. Although debate continues, this circumstance has also sparked more balanced visions of child development.

Ask Yourself

**REVIEW** Why are there many theories of child development? Cite three basic issues on which almost all theories take a stand.

**APPLY** A school counselor advises a parent, “Don’t worry about your teenager’s argumentative behavior. It shows that she understands the world differently than she did as a young child.” What stance is the counselor taking on the issue of continuous or discontinuous development? Explain.

**CONNECT** Provide an example of how one domain of development (physical, cognitive, or emotional/social) can affect development in another domain.

**REFLECT** Cite an aspect of your development that differs from a parent’s or grandparent’s when he or she was your age. How might contexts explain this difference?
Historical Foundations

Contemporary theories of child development are the result of centuries of change in Western cultural values, philosophical thinking about children, and scientific progress. To understand the field as it exists today, we must return to its beginnings—to influences that long preceded scientific child study. We will see that early ideas about children linger as important forces in current theory and research.

Medieval Times

Historical artifacts and writings show that childhood was regarded as a separate period of life as early as medieval Europe—the sixth through the fifteenth centuries. Medieval painters often depicted children as childlike—dressed in loose, comfortable gowns while playing games and looking up to adults. Written texts contained terms that distinguished children under age 7 or 8 from other people and that recognized even young teenagers as not fully mature (Lett, 1997). Archeological digs have unearthed small bowls and eating utensils, toys, dolls, and other objects, which reveal that adults were sensitive to children’s physical limitations and psychological needs.

Resilient Children

John and his best friend Gary grew up in a run-down, crime-ridden inner-city neighborhood. By age 10, each had experienced years of family conflict followed by parental divorce. Reared for the rest of childhood and adolescence in mother-headed households, John and Gary rarely saw their fathers. Both dropped out of high school and were in and out of trouble with the police.

Then John and Gary’s paths diverged. By age 30, John had fathered two children with women he never married, had spent time in prison, was unemployed, and drank alcohol heavily. In contrast, Gary had returned to finish high school, studied auto mechanics at a community college, and became manager of a gas station and repair shop. Married with two children, he had saved his earnings and bought a home. He was happy, healthy, and well adapted to life.

A wealth of evidence shows that environmental risks—poverty, negative family interactions, and parental divorce, job loss, mental illness, and drug abuse—predispose children to future problems (Masten & Coatsworth, 1998). Why did Gary “beat the odds” and come through unscathed? New evidence on resilience—the ability to adapt effectively in the face of threats to development—is receiving increasing attention because investigators want to find ways to protect young people from the damaging effects of stressful life conditions (Masten & Powell, 2003). This interest has been inspired by several long-term studies on the relationship of life stressors in childhood to competence and adjustment in adolescence and adulthood (Fergusson & Horwood, 2003; Garmezy, 1993; Masten et al., 1995; Werner & Smith, 1992). In each study, some individuals were shielded from negative outcomes, whereas others had lasting problems. Four broad factors seemed to offer protection from the damaging effects of stressful life events.

Personal Characteristics of Children

A child’s biologically endowed characteristics can reduce exposure to risk or lead to experiences that compensate for early stressful events. High intelligence and socially valued talents (in music or athletics, for example) are protective factors. They increase the chances that a child will have rewarding experiences in school and in the community that offset the impact of a stressful home life. Temperament is particularly powerful. Children with easy-going, sociable dispositions have an optimistic outlook on life and a special capacity to adapt to change—qualities that elicit positive responses from others. In contrast, emotionally reactive, irritable, and impulsive children often tax the patience of people around them (Masten & Reed, 2002; Masten et al., 1999). For example, both John and Gary moved several times during their childhoods. Each time, John became anxious and angry. Gary looked forward to making new friends and exploring a new neighborhood.

A Warm Parental Relationship

A close relationship with at least one parent who provides warmth, appropriately high expectations, monitoring of the child’s activities, and an organized home environment fosters resilience. But note that this factor (as well as the next one) is not inde-
pendent of children’s personal characteristics. Children who are relaxed, socially responsive, and able to deal with change are easier to rear and more likely to enjoy positive relationships with parents and other people. At the same time, some children may develop more attractive dispositions as a result of parental warmth and attention (Conger & Conger, 2002).

Social Support Outside the Immediate Family
The most consistent asset of resilient children is a strong bond to a competent, caring adult, who need not be a parent. A grandparent, aunt, uncle, or teacher who forms a special relationship with the child can promote resilience (Masten & Reed, 2002).

Gary received support in adolescence from his grandfather, who listened to Gary’s concerns and helped him solve problems. In addition, Gary’s grandfather had a stable marriage and work life and handled stressors skillfully. Consequently, he served as a model of effective coping.

Associations with rule-abiding peers who value school achievement are also linked to resilience. But children who have positive relationships with adults are far more likely to establish these supportive peer ties.

Community Resources and Opportunities
Community supports—good schools, convenient and affordable health care and social services, libraries, and recreation centers—foster both parents’ and children’s well-being. In addition, opportunities to participate in community life help older children and adolescents overcome adversity. Extracurricular activities at school, religious youth groups, scouting, and other organizations teach important social skills, such as cooperation, leadership, and contributing to others’ welfare. As a result, participants gain in self-esteem, responsibility, and community commitment. As a high school student, Gary volunteered for Habitat for Humanity, a nonprofit organization that builds affordable housing in low-income neighborhoods. Community involvement offered Gary additional opportunities to form meaningful relationships and develop new competencies, which further strengthened his resilience (Seccombe, 2002).

Research on resilience highlights the complex connections between heredity and environment. Armed with positive characteristics, which stem from innate endowment, favorable rearing experiences, or both, children and adolescents take action to reduce stressful situations. Nevertheless, when many risks pile up, they are increasingly difficult to overcome (Quyen et al., 1998). Therefore, interventions must reduce risks and enhance relationships at home, in school, and in the community that inoculate children against the negative effects of risk. This means attending to both the person and the environment—strengthening children’s capacities as well as reducing hazardous experiences.

By the fourteenth century, manuals offering advice on many aspects of child care, including health, feeding, clothing, games, and participation in family life, had become common (Alexandre-Bidon & Lett, 1997). Laws recognized that children needed protection from people who might mistreat them. And courts exercised leniency with lawbreaking youths because of their tender years (Hanawalt, 1993).

In sum, in medieval times, if not before, clear awareness existed of children as vulnerable beings and of childhood as a distinct developmental period. Religious writings, however, contained contradictory beliefs about children’s basic nature. Sometimes infants were portrayed as possessed by the devil and in need of purification through exorcism and baptism. At other times, they were characterized as innocent and close to angels (Hanawalt, 2003). Both ideas foreshadowed views of childhood in succeeding centuries.

The Reformation
In the sixteenth century, a revised image of childhood sprang from the Puritan belief in original sin. According to Puritan doctrine, children were born evil and stubborn and had to be civilized (Shahar, 1990). Harsh, restrictive child-rearing practices were recommended to tame the depraved child. Children were dressed in stiff, uncomfortable clothing that held them in adultlike postures, and disobedient students were routinely beaten by their schoolmasters.
Although punitiveness was the prevailing child-rearing philosophy, love and affection for their children prevented many Puritan parents from exercising extremely repressive measures (Moran & Vinovskis, 1986).

As the Puritans emigrated from England to America, they brought the belief that child rearing was one of their most important obligations. Although they continued to regard the child’s soul as tainted by original sin, they tried to encourage their sons and daughters to use reason so they could separate right from wrong (Clarke-Stewart, 1998). The Puritans were the first to devise special reading materials for children that instructed them in religious and moral ideals. As they trained their children in self-reliance and self-control, Puritan parents gradually adopted a moderate balance between severity and permissiveness (Pollock, 1987).

Philosophies of the Enlightenment

The seventeenth-century Enlightenment brought new philosophies of reason and emphasized ideals of human dignity and respect. Conceptions of childhood were more humane than those of centuries past.

- **John Locke** • The writings of John Locke (1632–1704), a leading British philosopher, served as the forerunner of a twentieth-century perspective that we will discuss shortly: behaviorism. Locke viewed the child as a **tabula rasa**. Translated from Latin, this means a “blank slate.” According to this idea, children are, to begin with, nothing at all, and all kinds of experiences can shape their characters. Locke (1690/1892) described parents as rational tutors who can mold the child in any way they wish, through careful instruction, effective example, and rewards for good behavior. He was ahead of his time in recommending child-rearing practices that present-day research supports. For example, Locke suggested that parents reward children not with money or sweets but with praise and approval. He also opposed physical punishment: “The child repeatedly beaten in school cannot look upon books and teachers without experiencing fear and anger.” Locke’s philosophy led to a change from harshness toward children to kindness and compassion.

Locke’s philosophy characterizes children as doing little to influence their own destiny, which is written on “blank slates” by others. This vision of a passive child has been discarded. All contemporary theories view children as active, purposeful beings who make sense of their world and contribute substantially to their own development.

- **Jean-Jacques Rousseau** • In the eighteenth century, French philosopher Jean Jacques Rousseau (1712–1778) introduced a new view of childhood. Children, Rousseau (1762/1955) claimed, are not blank slates and empty containers to be filled by adult instruction. Instead, they are **noble savages**, naturally endowed with a sense of right and wrong and with an innate plan for orderly, healthy growth. Unlike Locke, Rousseau thought children’s built-in moral sense and unique ways of thinking and feeling would only be harmed by adult training. His was a child-centered philosophy in which adults should be receptive to the child’s needs at each of four stages: infancy, childhood, late childhood, and adolescence.

Rousseau’s philosophy includes two influential concepts. The first is the concept of stage, which we discussed earlier. The second is the concept of **maturation**, which refers to a genetically determined, naturally unfolding course of growth. In contrast to Locke, Rousseau saw children as determining their own destinies. And he took a different stand on basic develop-
mental issues. He saw development as a discontinuous, stagewise process that follows a single, unified course mapped out by nature.

**Darwin: Forefather of Scientific Child Study**

A century after Rousseau, British naturalist Charles Darwin (1809–1882) joined an expedition to distant parts of the world, where he observed infinite variation among plant and animal species. He also saw that within a species, no two individuals are exactly alike. From these observations, he constructed his famous theory of evolution.

The theory emphasized two related principles: natural selection and survival of the fittest. Darwin explained that certain species survive in particular parts of the world because they have characteristics that fit with, or are adapted to, their surroundings. Other species die off because they are not as well suited to their environments. Individuals within a species who best meet the survival requirements of the environment live long enough to reproduce and pass their more beneficial characteristics to future generations. Darwin’s emphasis on the adaptive value of physical characteristics and behavior eventually found its way into important twentieth-century theories (Cairns, 1998).

During his explorations, Darwin discovered that the early prenatal growth of many species is strikingly similar. Other scientists concluded from Darwin’s observation that the development of the human child follows the same general plan as the evolution of the human species. Although this belief eventually proved inaccurate, efforts to chart parallels between child growth and human evolution prompted researchers to make careful observations of all aspects of children’s behavior. Out of these first attempts to document an idea about development, scientific child study was born.

**Scientific Beginnings**

Research on child development evolved quickly during the late nineteenth and early twentieth centuries. Early observations of children were soon followed by improved methods and theories. Each advance contributed to the firm foundation on which the field rests today.

**THE BABY BIOGRAPHIES** Imagine yourself as a forerunner in the field of child development, confronted with studying children for the first time. How might you go about this challenging task? Scientists of the late nineteenth and early twentieth centuries did what most of us would probably do—they selected a child of their own or of a close relative. Then, beginning in early infancy, they jotted down day-by-day descriptions and impressions of the child’s behavior. By the 1890s, these baby biographies were being published regularly. In the following excerpt from one, the author reflects on the birth of her young niece:

Its first act is a cry, not of wrath, ... nor a shout of joy, ... but a snuffling, and then a long, thin tearless á—á, with the timbre of a Scotch bagpipe, purely automatic, but of discomfort. With this monotonous and dismal cry, with its red, shriveled, parboiled skin ..., it is not strange that, if the mother ..., has not come to love her child before birth, there is a brief interval occasionally dangerous to the child before the maternal instinct is fully aroused.

It cannot be denied that this unflattering description is fair enough, and our baby was no handsomer than the rest of her kind.... Yet she did not lack admirers. I have never noticed that women (even those who are not mothers) mind a few little aesthetic defects, ... with so many counterbalancing charms in the little warm, soft, living thing. (Shinn, 1900, pp. 20–21)

Can you tell from this passage why the baby biographies have sometimes been upheld as examples of how not to study children? These first investigators tended to be emotionally invested in the infants they observed, and they seldom began with a clear idea of what they wanted to find out. Not surprisingly, many of their records were eventually discarded as biased.

Nevertheless, the baby biographies were a step in the right direction. Two nineteenth-century theorists, Darwin (1877) and German biologist William Preyer (1882/1888), contributed to these early records of children’s behavior. Preyer, especially, set high standards for making observations, recording what he saw immediately and checking the accuracy of his notes against those of a second observer (Cairns, 1998). These are the same standards that
today's researchers use when observing children. As a result of the biographers' pioneering efforts, the child became a common focus of scientific research.

**THE NORMATIVE PERIOD**

G. Stanley Hall (1844–1924), one of the most influential American psychologists of the early twentieth century, is generally regarded as the founder of the child study movement (Hogan, 2003). Inspired by Darwin's work, Hall and his well-known student, Arnold Gesell (1880–1961), developed theories based on evolutionary ideas. These early leaders regarded child development as a maturational process—a genetically determined series of events that unfolds automatically, much like a blooming flower (Gesell, 1933; Hall, 1904).

Hall and Gesell are remembered less for their one-sided theories than for their intensive efforts to describe all aspects of child development. This launched the normative approach, in which measures of behavior are taken on large numbers of individuals, and age-related averages are computed to represent typical development. Using this procedure, Hall constructed elaborate questionnaires asking children of different ages almost everything they could tell about themselves—interests, fears, imaginary playmates, dreams, friendships, everyday knowledge, and more (White, 1992). And through careful observations and interviews with parents, Gesell obtained detailed normative information on infants' and young children's motor achievements, social behaviors, and personality characteristics.

Gesell was also among the first to make knowledge about child development meaningful to parents by informing them of what to expect at each age. If, as he believed, the timetable of development is the product of millions of years of evolution, then children are naturally knowledgeable about their needs. His child-rearing advice, in the tradition of Rousseau, recommended sensitivity to children's cues (Thelen & Adolph, 1992). Along with Benjamin Spock's famous *Baby and Child Care*, Gesell's books became a central part of a rapidly expanding child development literature for parents (see the From Research to Practice box on page 15).

**THE MENTAL TESTING MOVEMENT**

While Hall and Gesell were developing their theories and methods in the United States, French psychologist Alfred Binet (1857–1911) was also taking a normative approach to child development, but for a different reason. In the early 1900s, Binet and his colleague Theodore Simon were asked by Paris school officials to find a way to identify children with learning problems who needed to be placed in special classes. The first successful intelligence test, which they constructed for this purpose, grew out of practical educational concerns.

Binet's effort was unique in that he began with a well-developed theory. In contrast to earlier views, which reduced intelligence to simple elements of reaction time and sensitivity to physical stimuli, Binet captured the complexity of children's thinking. He defined intelligence as good judgment, planning, and critical reflection (Sternberg & Jarvin, 2003). Then he selected test items appropriate for each age that directly measured these abilities.

In 1916, Binet's test was adapted for use with English-speaking children at Stanford University. Since then, the English version has been known as the Stanford-Binet Intelligence Scale. Besides providing a score that could successfully predict school achievement, the Binet test sparked tremendous interest in individual differences in development. Comparisons of the intelligence test scores of children who vary in gender, ethnicity, birth order, family background, and other characteristics became a major focus of research. Intelligence tests also rose quickly to the forefront of the nature–nurture controversy.

**JAMES MARK BALDWIN: EARLY DEVELOPMENTAL THEORIST**

A final important figure, overlooked in the history of child development for decades, is American psychologist James Mark Baldwin (1861–1934), who carried out his innovative work in both Canada and the United States. More a theorist than an observer of children, Baldwin's (1897) rich interpretations of development are experiencing a revival today. He believed that children's understanding of their physical and social worlds develops through a sequence of stages, beginning with the simplest behavior patterns of the newborn infant and concluding with the adult's capacity to think abstractly and reflectively (Cairns, 1992, 1998).

Yet Baldwin regarded neither the child nor the environment as in control of development. Instead, he granted nature and nurture equal importance. Children, he argued, actively revise
Almost all parents—especially new ones—feel a need for sound advice on how to rear their children. To meet this need, experts have long been communicating with the general public through a wide variety of popular books and magazines. Prior to the 1970s, publications emphasized the central role of mothers in healthy child development. In the 1980s, fathers were encouraged to share in the full range of child-rearing responsibilities as research revealed that they influence all aspects of psychological development. Around that time, information about nonparental child care appeared. Experts reassured employed mothers that their babies did not require their continuous presence and offered advice on how to select good child care (Young, 1990).

In the mid-1990s, more working parents complained of overly demanding lives and reported spending less time with their children in joint mealtimes, conversations, and leisure activities (Hofferth & Sandberg, 1999). At the same time, many parents reported worrisome changes in their children, including reduced engagement in school and increases in emotional and behavior problems (Vandivere, Gallagher, & Moore, 2004). And in one nationally representative survey of American parents, more than half judged the job that they were doing in rearing their children as “poor.” Many of these respondents believe that children are “lacking” or “poor.” These are responses that were not uncommon among parents of previous generations who had not had the opportunity to read popular books and evaluate their impact on their children. Yet increasingly, popular advice has become more important in the lives of parents. As you study child development, you will see that parents are all-powerful, others grant supremacy to children’s biological makeup. In the face of these incompatible messages, many parents come to doubt their own importance and retreat from involvement with their children. Berk argues that in view of the many factors in American society that threaten children’s development, parenting today not only matters, but matters more than ever.

In a similar vein, James Garbarino and Claire Bedard (2001), in Parents under Siege, address youth antagonism and violence, including the recent spate of heinous crimes resulting in family and school maimings and murders. Because multiple factors—including an impulsive, explosive temperament; unfavorable school experiences; and antisocial peer influences—contribute to these tragedies, parents are not to blame for them. But, Garbarino and Bedard emphasize, parents nevertheless bear considerable responsibility. They often are unaware of everyday experiences that lead their youngsters down the path to violence.

In terms of solutions, most experts writing for parents affirm the need for greater adult involvement in children’s lives. Berk (2001) shows how essential cognitive, moral, and social capacities emerge from parent–child communication in such seemingly mundane pursuits as a bedtime story, a homework assignment, or a family dinner. Garbarino and Bedard (2001) make a case for “empowered parenting,” in which parents consider their youngster’s strengths and limitations while closely monitoring and, when necessary, intervening in the social environment. They also admonish parents to provide a “moral compass of character” by insisting that children meet standards for personal achievement and caring for others. And in The Ten Basic Principles of Good Parenting, Laurence Steinberg (2004) aims to restore in parents a philosophy of good child rearing by outlining ten research-based parenting strategies that help children become kind, secure, and competent. These include: be loving, establish rules and set limits, treat your child with respect, and foster independence by helping your child think through decisions.

Yet increasingly, popular advice has underscored that parents cannot do the job alone; they need the help of a caring community and society. As you study child development, read one or more popular books on parenting and evaluate their advice on the basis of what you have learned. How is the growing agreement of experts with the African proverb, “It takes a village to raise a child,” consistent with the focus of current theories on contexts for development, described later in this chapter?
their ways of thinking about the world, but they also learn through habit, or by copying others’ behaviors. As development proceeds, the child and her social surroundings influence each other, forming an inseparable, interwoven network.

Consider these ideas, and you will see why Baldwin (1895) argued that heredity and environment should not be viewed as distinct, opposing forces. Instead, he claimed, most human characteristics are “due to both causes working together” (p. 77). As we turn now to an overview of modern theories of child development, you will find Baldwin’s ideas represented in several, especially the more recent ones.

Mid-Twentieth-Century Theories

In the mid-twentieth century, the field of child development expanded into a legitimate discipline. Specialized research centers and professional societies devoted to the scientific study of children were founded. A leader among these is the Society for Research in Child Development, established in 1933 to promote interdisciplinary research, dissemination of information, and applications of research findings. The society’s inaugural membership of 425 grew rapidly. Today, approximately 5,500 researchers, applied professionals, and students from more than 50 countries are members.

As child development attracted increasing interest, a variety of mid-twentieth-century theories emerged, each of which continues to have followers today. In these theories, the European concern with the child’s inner thoughts and feelings contrasts sharply with the focus of American academic psychology on scientific precision and concrete, observable behavior.

The Psychoanalytic Perspective

By the 1930s and 1940s, parents increasingly sought help from professionals to deal with children suffering from emotional stress and behavior problems. The earlier normative movement had answered the question, What are children like? But now another problem had to be addressed: How and why do children become the way they are? To treat psychological problems, psychiatrists and social workers turned to an emerging approach to personality development that emphasized the unique history of each child.

According to the psychoanalytic perspective, children move through a series of stages in which they confront conflicts between biological drives and social expectations. The way these conflicts are resolved determines the person’s ability to learn, to get along with others, and to cope with anxiety. Although many individuals contributed to the psychoanalytic perspective, two have been especially influential: Sigmund Freud, founder of the psychoanalytic movement, and Erik Erikson.

• FREUD’S THEORY • Freud (1856–1939), a Viennese physician, saw patients in his practice with a variety of nervous symptoms, such as hallucinations, fears, and paralyzes, that appeared to have no physical basis. Seeking a cure for these troubled adults, Freud found that their symptoms could be relieved by having patients talk freely about painful events of their childhoods. Working with these remembrances, Freud examined the unconscious motivations of his patients and constructed his psychosexual theory. It emphasized that how parents
manage their child’s sexual and aggressive drives in the first few years is crucial for healthy personality development.

Three Parts of the Personality. In Freud’s theory, three parts of the personality—id, ego, and superego—become integrated during five stages, summarized in Table 1.1. The id, the largest portion of the mind, is the source of basic biological needs and desires. The ego, the conscious, rational part of personality, emerges in early infancy to redirect the id’s impulses so they are discharged in acceptable ways. For example, aided by the ego, the hungry baby of a few months of age stops crying when he sees his mother warm a bottle or unfasten her clothing for breastfeeding. And the more competent preschooler goes into the kitchen and gets a snack on her own.

Between 3 and 6 years of age, the superego, or conscience, develops from interactions with parents, who insist that children conform to the values of society. Now the ego faces the increasingly complex task of reconciling the demands of the id, the external world, and conscience (Freud, 1923/1974). For example, when the ego is tempted to gratify an id impulse by hitting a playmate to get an attractive toy, the superego may warn that such behavior is wrong. The ego must decide which of the two forces (id or superego) will win this inner struggle or work out a compromise, such as asking for a turn with the toy. According to Freud, the relations established between the id, ego, and superego during the preschool years determine the individual’s basic personality.

Psychosexual Development. Freud (1938/1973) believed that during childhood, sexual impulses shift their focus from the oral to the anal to the genital regions of the body. In each stage, parents walk a fine line between permitting too much or too little gratification of their child’s basic needs. If parents strike an appropriate balance, then children grow into well-adjusted adults with the capacity for mature sexual behavior, investment in family life, and rearing of the next generation.

Freud’s psychosexual theory highlighted the importance of family relationships and early experiences for children’s development. But Freud’s perspective was eventually criticized. First, the theory overemphasized the influence of sexual feelings in development. Second, because it was based on the problems of sexually repressed, well-to-do adults, it did not apply in cultures differing from nineteenth-century Victorian society. Finally, Freud had not studied children directly.
Several of Freud’s followers took what was useful from his theory and improved on his vision. The most important of these neo-Freudians for the field of child development is Erik Erikson (1902–1994). Although Erikson (1950) accepted Freud’s basic psychosexual framework, he expanded the picture of development at each stage. In his psychosocial theory, Erikson emphasized that the ego does not just mediate between id impulses and superego demands. It is also a positive force in development. At each stage, the ego acquires attitudes and skills that make the individual an active, contributing member of society. A basic psychosocial conflict, which is resolved along a continuum from positive to negative, determines whether healthy or maladaptive outcomes occur at each stage. As Table 1.2 shows, Erikson’s first five stages parallel Freud’s stages, but Erikson added three adult stages. He was one of the first to recognize the lifespan nature of development.

Finally, unlike Freud, Erikson pointed out that normal development must be understood in relation to each culture’s life situation. For example, in the 1940s, he observed that Yurok Indians of the northwest coast of the United States deprived babies of breastfeeding for the first 10 days after birth and instead fed them a thin soup from a small shell. At age 6 months, infants were abruptly weaned—if necessary, by having the mother leave for a few days. These experiences, from our cultural vantage point, seem cruel. But Erikson explained that the Yurok lived in a world in which salmon fill the river just once a year, a circumstance that requires the development of considerable self-restraint for survival. In this way, he showed that child rearing can be understood only by making reference to the competencies valued and needed by the child’s society.

<table>
<thead>
<tr>
<th>Psychosocial Stage</th>
<th>Period of Development</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic trust versus mistrust (Oral)</td>
<td>Birth–1 year</td>
<td>From warm, responsive care, infants gain a sense of trust, or confidence, that the world is good. Mistrust occurs when infants have to wait too long for comfort and are handled harshly.</td>
</tr>
<tr>
<td>Autonomy versus shame and doubt (Anal)</td>
<td>1–3 years</td>
<td>Using new mental and motor skills, children want to choose and decide for themselves. Autonomy is fostered when parents permit reasonable free choice and do not force or shame the child.</td>
</tr>
<tr>
<td>Initiative versus guilt (Phallic)</td>
<td>3–6 years</td>
<td>Through make-believe play, children experiment with the kind of person they can become. Initiative—a sense of ambition and responsibility—develops when parents support their child’s new sense of purpose. The danger is that parents will demand too much self-control, which leads to overcontrol, meaning too much guilt.</td>
</tr>
<tr>
<td>Industry versus inferiority (Latency)</td>
<td>6–11 years</td>
<td>At school, children develop the capacity to work and cooperate with others. Inferiority develops when negative experiences at home, at school, or with peers lead to feelings of incompetence.</td>
</tr>
<tr>
<td>Identity versus identity confusion (Genital)</td>
<td>Adolescence</td>
<td>The adolescent tries to answer the question, Who am I, and what is my place in society? Self-chosen values and vocational goals lead to a lasting personal identity. The negative outcome is confusion about future adult roles.</td>
</tr>
<tr>
<td>Intimacy versus isolation</td>
<td>Emerging adulthood</td>
<td>Young people work on establishing intimate ties to others. Because of earlier disappointments, some individuals cannot form close relationships and remain isolated.</td>
</tr>
<tr>
<td>Generativity versus stagnation</td>
<td>Adulthood</td>
<td>Generativity means giving to the next generation through child rearing, caring for other people, or productive work. The person who fails in these ways feels an absence of meaningful accomplishment.</td>
</tr>
<tr>
<td>Integrity versus despair</td>
<td>Old age</td>
<td>In this final stage, individuals reflect on the kind of person they have been. Integrity results from feeling that life was worth living as it happened. Old people who are dissatisfied with their lives fear death.</td>
</tr>
</tbody>
</table>
CONTRIBUTIONS AND LIMITATIONS OF THE PSYCHOANALYTIC PERSPECTIVE

A special strength of the psychoanalytic perspective is its emphasis on the individual's unique life history as worthy of study and understanding (Emde, 1992). Consistent with this view, psychoanalytic theorists accept the clinical, or case study, method, which synthesizes information from a variety of sources into a detailed picture of the personality of a single child. (We will discuss this method further in Chapter 2.) Psychoanalytic theory has also inspired a wealth of research on many aspects of emotional and social development, including infant-caregiver attachment, aggression, sibling relationships, child-rearing practices, morality, gender roles, and adolescent identity.

Despite its extensive contributions, the psychoanalytic perspective is no longer in the mainstream of child development research (Cairns, 1998). Psychoanalytic theorists may have become isolated from the rest of the field because they were so strongly committed to in-depth study of each child that they failed to consider other methods. In addition, many psychoanalytic ideas, such as psychosexual stages and ego functioning, are so vague that they are difficult or impossible to test empirically (Thomas, 2000; Westen & Gabbard, 1999).

Behaviorism and Social Learning Theory

As psychoanalytic theory gained in prominence, the child study was also influenced by a very different perspective. According to behaviorism, directly observable events—stimuli and responses—are the appropriate focus of study. North American behaviorism began with the work of psychologist John Watson (1878–1958) in the early twentieth century. Watson wanted to create an objective science of psychology and rejected the psychoanalytic concern with the unseen workings of the mind (Horowitz, 1992).

TRADITIONAL BEHAVIORISM

Watson was inspired by Russian physiologist Ivan Pavlov's studies of animal learning. Pavlov knew that dogs release saliva as an innate reflex when they are given food. But he noticed that his dogs were salivating before they tasted any food—when they saw the trainer who usually fed them. The dogs, Pavlov reasoned, must have learned to associate a neutral stimulus (the trainer) with another stimulus (food) that produces a reflexive response (salivation). As a result of this association, the neutral stimulus by itself could bring about a response resembling the reflex. Eager to test this idea, Pavlov successfully taught dogs to salivate at the sound of a bell by pairing it with the presentation of food. He had discovered classical conditioning.

Watson wanted to find out if classical conditioning could be applied to children's behavior. In a historic experiment, he taught Albert, an 11-month-old infant, to fear a neutral stimulus—a soft white rat—by presenting it several times with a sharp, loud sound, which naturally scared the baby. Little Albert, who at first had reached out eagerly to touch the furry rat, began to cry and turn his head away when he caught sight of it (Watson & Raynor, 1920). In fact, Albert's fear was so intense that researchers eventually questioned the ethics of studies like this one. Consistent with Locke's tabula rasa, Watson concluded that environment is the supreme force in development. Adults can mold children's behavior, he thought, by carefully controlling stimulus-response associations. And development is a continuous process, with the number and strength of these associations increasing with age.

B. F. Skinner (1904–1990), another noted American psychologist, is responsible for operant conditioning theory. According to Skinner, the frequency of a child's behavior can be increased by following it with a wide variety of reinforcers, such as food, drink, praise, a friendly smile, or a new toy. A behavior can also be decreased through punishment, such as withdrawal of privileges, parental disapproval, or being sent to one's room. As a result of Skinner's work, operant conditioning became a broadly applied learning principle in child psychology. We will consider these conditioning principles further when we explore the infant's learning capacities in Chapter 4.

SOCIAL LEARNING THEORY

Psychologists quickly became interested in whether behaviorism might explain the development of children's social behavior better than the less precise concepts of psychoanalytic theory. This sparked the emergence of approaches that built on the principles of conditioning, offering expanded views of how children and adults acquire new responses.
Several kinds of social learning theory emerged. The most influential, devised by Canadian-born psychologist Albert Bandura, emphasized modeling, otherwise known as imitation or observational learning, as a powerful source of development. The baby who claps her hands after her mother does so, the child who angrily hits a playmate in the same way that he has been punished at home, and the teenager who wears the same clothes and hairstyle as her friends at school are all displaying observational learning. By the 1950s, social learning theory had become a major force in child development research.

Bandura’s work continues to influence much research on children's social development. However, like the field of child development as a whole, today his theory stresses the importance of cognition, or thinking. Bandura has shown that children’s ability to listen, remember, and abstract general rules from complex sets of observed behaviors affects their imitation and learning. In fact, Bandura’s most recent revision of his theory (1992, 2001) places such strong emphasis on how children think about themselves and other people that he calls it a social-cognitive rather than a social learning approach.

According to Bandura’s revised view, children gradually become more selective in what they imitate. From watching others engage in self-praise and self-blame and through feedback about the worth of their own actions, children develop personal standards for behavior and a sense of self-efficacy—the belief that their own abilities and characteristics will help them succeed. These cognitions guide responses in particular situations (Bandura, 1999, 2001). For example, imagine a parent who often remarks, “I’m glad I kept working on that task, even though it was hard,” who explains the value of persistence, and who encourages it by saying, “I know you can do a good job on that homework!” Soon the child starts to view herself as hardworking and high achieving and selects people with these characteristics as models. In this way, as children acquire attitudes, values, and convictions about themselves, they control their own learning and behavior.

CONTRIBUTIONS AND LIMITATIONS OF BEHAVIORISM AND SOCIAL LEARNING THEORY

Behaviorism and social learning theory have had a major impact on practices with children. Behavior modification consists of procedures that combine conditioning and modeling to eliminate undesirable behaviors and increase desirable responses. It has been used to relieve a wide range of serious developmental problems, such as persistent aggression, language delays, and extreme fears (Pierce & Epling, 1995; Wolpe & Plaud, 1997). It is also effective in dealing with common, everyday difficulties, including poor time management; unwanted habits, such as nail biting and thumb sucking; disruptive behavior; and anxiety over such recurrent events as test taking and dental treatments. In one study, researchers reduced 4- and 5-year-olds’ unruliness in a preschool classroom by reinforcing them with tokens (which they could exchange for candy) when they behaved appropriately and punishing them by taking away tokens when they screamed, threw objects, attacked other children, or refused to comply with a teacher’s request (Coneyers et al., 2004). In another investigation, children’s anxious reactions during dental visits declined after an adult gave them small toys for answering questions about a story she read to them while the dentist worked (Stark et al., 1989). Because the children could not listen to the story and cry at the same time, their resistance subsided.

Nevertheless, many theorists believe that behaviorism and social learning theory do not provide a complete account of development. They argue that these approaches offer too narrow a view of important environmental influences, which extend beyond immediate reinforcement, punishment, and modeled behaviors to children’s rich physical and social worlds. In addition, behaviorism and social learning theory have been criticized for neglecting children’s contributions to their own development. In emphasizing cognition, Bandura is unique among theorists whose work grew out of the behaviorist tradition in granting children an active role in their own learning.
Piaget's Cognitive-Developmental Theory

If one individual has influenced the contemporary field of child development more than any other, it is Swiss cognitive theorist Jean Piaget (1896–1980). North American investigators had been aware of Piaget's work since 1930. However, they did not grant it much attention until the 1960s, mainly because Piaget's ideas and methods of studying children were very much at odds with behaviorism, which dominated North American psychology during the middle of the twentieth century (Zigler & Gilman, 1998). Piaget did not believe that children's learning depends on reinforcers, such as rewards from adults. According to his cognitive-developmental theory, children actively construct knowledge as they manipulate and explore their world.

Piaget's view of development was greatly influenced by his early training in biology. Central to his theory is the biological concept of adaptation (Piaget, 1971). Just as structures of the body are adapted to fit with the environment, so structures of the mind develop to better fit with, or represent, the external world. In infancy and early childhood, Piaget claimed, children's understanding is different from adults'. For example, he believed that young babies do not realize that an object hidden from view—a favorite toy or even the mother—continues to exist. He also concluded that preschoolers' thinking is full of faulty logic. For example, children younger than age 7 commonly say that the amount of milk or lemonade changes when it is poured into a differently shaped container. According to Piaget, children eventually revise these incorrect ideas in their ongoing efforts to achieve an equilibrium, or balance, between internal structures and information they encounter in their everyday worlds.

In Piaget's theory, as the brain develops and children's experiences expand, they move through four broad stages, each characterized by qualitatively distinct ways of thinking. Table 1.3 provides a brief description of Piaget's stages. In the sensorimotor stage, cognitive development begins with the baby's use of the senses and movements to explore the world. These action patterns evolve into the symbolic but illogical thinking of the preschooler in the preoperational stage. Then cognition is transformed into the more organized, logical reasoning of the school-age child in the concrete operational stage. Finally, in the formal operational stage, thought becomes the complex, abstract reasoning system of the adolescent and adult.
Ask Yourself

**REVIEW**
Cite similarities and differences between Freud’s and Erikson’s views of development.

**REVIEW**
What aspect of behaviorism made it attractive to critics of the psychoanalytic perspective? How does Piaget’s theory respond to a major limitation of behaviorism?

**APPLY**
A 4-year-old becomes frightened of the dark and refuses to go to sleep at night. How would a psychoanalyst and a behaviorist differ in their views of how this problem developed?

**CONNECT**
Although social learning theory focuses on social development and Piaget’s theory on cognitive development, each has enhanced our understanding of other domains. Mention an additional domain addressed by each theory.
New ways of understanding children are constantly emerging—questioning, building on, and enhancing the discoveries of earlier theories. Today, a burst of fresh approaches and research emphases is broadening our understanding of children’s development.

**Information Processing**

During the 1970s, researchers turned to the field of cognitive psychology for ways to understand the development of children’s thinking. The design of digital computers that use mathematically specified steps to solve problems suggested to psychologists that the human mind might also be viewed as a symbol-manipulating system through which information flows—a perspective called *information processing* (Klahr & MacWhinney, 1998). From the time information is presented to the senses at input until it emerges as a behavioral response at output, information is actively coded, transformed, and organized.

Information-processing researchers often use flowcharts to map the precise steps individuals use to solve problems and complete tasks, much like the plans devised by programmers to get computers to perform a series of “mental operations.” Let’s look at an example to clarify the usefulness of this approach. In a study of children’s problem solving, a researcher provided a pile of blocks varying in size, shape, and weight and asked 5- to 9-year-olds to build a bridge across a “river” (painted on a floor mat) that was too wide for any single block to span (Thornton, 1999). Figure 1.3 shows one solution to the problem: Two plank-like blocks span the water, each held in place by the counterweight of heavy blocks on the bridge’s towers. Whereas many children age 7 and older built successful bridges, only one 5-year-old did. Careful tracking of her efforts revealed that she repeatedly tried unsuccessful strategies, such as pushing two planks together and pressing down on their ends to hold them in place. But eventually, her experimentation triggered the idea of using the blocks as counterweights. Her mistaken procedures helped her understand why the counterweight approach worked. The findings show how a child’s actions within a task can facilitate problem solving. This child had no prior understanding of counterweight and balance. Yet she arrived at just as effective a solution as older children, who came with considerable task-relevant knowledge.

A variety of information-processing models exist. Some, like the one just considered, track children’s mastery of one or a few tasks. Others describe the human cognitive system as a whole (Atkinson & Shiffrin, 1968; Lockhart & Craik, 1990). These general models are used as guides for asking questions about broad age changes in children’s thinking. For example, does a child’s ability to search the environment for information needed to solve a problem become more organized and “planful” with age? What strategies do younger and older children use to remember new information, and how do those strategies affect children’s recall?

The information-processing approach is also being used to clarify the processing of social information. For example, flowcharts exist that track the steps children use to solve social...
problems (such as how to enter an ongoing play group) and acquire gender-linked preferences and behaviors (Crick & Dodge, 1994; Liben & Bigler, 2002). If we can identify how social problem solving and gender stereotyping arise in childhood, then we can design interventions that promote more favorable social development.

Like Piaget’s theory, the information-processing approach views children as actively making sense of their experiences and as modifying their own thinking in response to environmental demands (Halford, 2002; Klahr & MacWhinney, 1998). But unlike Piaget’s theory, there are no stages of development. Rather, the thought processes studied—perception, attention, memory, categorization of information, planning, problem solving, and comprehension of written and spoken prose—are regarded as similar at all ages but present to a lesser or greater extent. Therefore, the view of development is one of continuous change.

A great strength of the information-processing approach is its commitment to careful, rigorous research methods. Because it has provided precise accounts of how children of different ages engage in many aspects of thinking, its findings have led to teaching interventions that help children solve problems in more advanced ways (Geary, 1994; Siegler, 1998). But information processing has fallen short in some respects. Although good at analyzing thinking into its components, it has difficulty putting them back together into a comprehensive theory. In addition, aspects of cognition that are not linear and logical, such as imagination and creativity, are all but ignored by this approach (Lutz & Sternberg, 1999). Furthermore, much information-processing research has been conducted in laboratories rather than real-life situations. Recently, investigators have addressed this concern by focusing on more realistic materials and activities. Today, they study children’s conversations, stories, memory for everyday events, and academic problem solving.

An advantage of having many theories is that they encourage one another to attend to previously neglected dimensions of children’s lives. A unique feature of the final four perspectives we will discuss is a focus on contexts for development—the way children’s biological makeup combines with environmental circumstances to affect pathways of change. The first of these views emphasizes that the development of many capacities is influenced by our long evolutionary history.

**Ethology and Evolutionary Developmental Psychology**

Ethology is concerned with the adaptive, or survival, value of behavior and its evolutionary history (Dewsbury, 1992; Hinde, 1989). Its roots can be traced to the work of Darwin. Two European zoologists, Konrad Lorenz (1952) and Niko Tinbergen (1973), laid its modern foundations. Watching diverse animal species in their natural habitats, Lorenz and Tinbergen observed behavior patterns that promote survival. The best known of these is imprinting, the early following behavior of certain baby birds that ensures that the young will stay close to the mother and be fed and protected from danger. Imprinting takes place during an early, restricted period of development. If the mother goose is not present during this time, but an object resembling her in important features is, young goslings may imprint on it instead.

Observations of imprinting led to a major concept in child development: the critical period. It refers to a limited time during which the child is biologically prepared to acquire certain adaptive behaviors but needs the support of an appropriately stimulating environment. Many researchers have conducted studies to find out whether complex cognitive and social behaviors must be learned during certain periods. For example, if children are deprived of adequate food or physical and social stimulation during their early years, will their intelligence be impaired? If language is not mastered during early childhood, is the child’s capacity to acquire it reduced?

In later chapters, we will discover that the term sensitive period applies better to human development than the strict notion of a critical period (Bornstein, 1989). A **sensitive period** is a time that is optimal for certain capacities to emerge and in which the individual is especially responsive to environmental influences. However, its boundaries are less well defined than those of a critical period. Development can occur later, but it is harder to induce.
Inspired by observations of imprinting, British psychoanalyst John Bowlby (1969) applied ethological theory to the understanding of the human infant–caregiver relationship. He argued that infant smiling, babbling, grasping, and crying are built-in social signals that encourage the caregiver to approach, care for, and interact with the baby. By keeping the parent near, these behaviors help ensure that the infant will be fed, protected from danger, and provided with stimulation and affection necessary for healthy growth. The development of attachment in human infants is a lengthy process that leads the baby to form a deep affectionate tie with the caregiver (van den Boom, 2002). It is far more complex than imprinting in baby birds. In Chapter 10, we will consider how infant, caregiver, and family context contribute to attachment and will examine the impact of attachment on later development.

Observations by ethologists have shown that many aspects of children's social behavior, including emotional expressions, aggression, cooperation, and social play, resemble those of our primate relatives. Recently, researchers have extended this effort in a new area of research called evolutionary developmental psychology. It seeks to understand the adaptive value of species-wide cognitive, emotional, and social competencies as those competencies change with age. Evolutionary developmental psychologists ask such questions as, What role does the newborn's visual preference for facelike stimuli play in survival? Does it support older infants' capacity to distinguish familiar caregivers from unfamiliar people? Why do children play in sex-segregated groups? What do they learn from such play that might lead to adult gender-typed behaviors, such as male dominance and female investment in caregiving?

As these examples suggest, evolutionary psychologists are not just concerned with the genetic and biological roots of development. They recognize that the extended childhood of humans resulted from the need to master an increasingly complex social and technological environment, so they are also interested in how children learn (Bjäss & Bjorklund, 2003). And they realize that today's lifestyles differ so radically from those of our evolutionary ancestors that certain evolved behaviors (such as life-threatening risk taking in adolescents and male-to-male violence) are no longer adaptive (Bjorklund & Pellegrini, 2000, 2002). By clarifying the origins and development of such behaviors, evolutionary developmental psychology may help spark more effective interventions.

In sum, the interests of evolutionary psychologists are broad. They want to understand the entire organism–environment system. The next contextual perspective we will discuss, Vygotsky's sociocultural theory, serves as an excellent complement to the evolutionary viewpoint because it highlights the social and cultural dimensions of children's experiences.

Vygotsky's Sociocultural Theory

In recent decades, the field of child development has seen a dramatic increase in studies addressing the cultural context of children's lives. Investigations that make comparisons across cultures, and between ethnic groups within cultures, provide insight into whether developmental pathways apply to all children or are limited to particular environmental conditions. As a result, cross-cultural and multicultural research helps untangle the contributions of biological and environmental factors to the timing, order of appearance, and diversity of children's behaviors (Greenfield, 1994).

In the past, researchers focused on broad cultural differences in development—for example, whether children in one culture are more advanced in motor development or do better on intellectual tasks than children in another culture. However, this approach can lead us to conclude incorrectly that one culture is superior in enhancing development, whereas another is deficient. In addition, it does not help us understand the precise experiences that contribute to cultural differences in children's behavior.

Today, more research is examining the relationship of culturally specific practices to development. The contributions of Russian psychologist Lev Vygotsky (1896–1934) have played a major role in this trend. Vygotsky's (1934/1987) perspective is called sociocultural theory. It focuses on how culture—the values, beliefs, customs, and skills of a social group—is transmitted to the next generation. According to Vygotsky, social interaction—in particular, cooperative dialogues between children and more knowledgeable members of society—is necessary for children to acquire the ways of thinking and behaving that make up a community's culture (Rowe & Wertsch, 2002). Vygotsky believed that as adults and more expert peers help children master culturally meaningful activities, the communication between them becomes part of children's
As children internalize the features of these dialogues, they use the language within them to guide their own thought and actions and to acquire new skills (Berk, 2003). The young child instructing herself while working a puzzle or preparing a table for dinner has started to produce the same kind of guiding comments that an adult previously used to help her master important tasks.

Vygotsky’s theory has been especially influential in the study of children’s cognition. Vygotsky agreed with Piaget that children are active, constructive beings. But unlike Piaget, who emphasized children’s independent efforts to make sense of their world, Vygotsky viewed cognitive development as a socially mediated process—as dependent on the assistance that adults and more-expert peers provide as children tackle new challenges. In Vygotsky’s theory, children undergo certain stagewise changes. For example, when they acquire language, their ability to participate in dialogues with others is greatly enhanced, and mastery of culturally valued competencies surges forward. When children enter school, they spend much more time discussing language, literacy, and other academic concepts—experiences that encourage them to reflect on their own thinking (Kozulin, 2003). As a result, they gain dramatically in reasoning and problem solving.

At the same time, Vygotsky stressed that dialogues with experts lead to continuous changes in cognition that vary greatly from culture to culture. Consistent with this view, a major finding of cross-cultural research is that cultures select different tasks for children’s learning (Rogoff & Chavajay, 1995). Social interaction surrounding those tasks leads to competencies essential for success in a particular culture. For example, in industrialized nations, teachers can be seen helping people learn to read, drive a car, or use a computer. Among the Zinacanteco Indians of southern Mexico, adult experts guide young girls as they master complicated weaving techniques (Greenfield, Maynard, & Childs, 2000). In Brazil and other developing nations, child candy sellers with little or no schooling develop sophisticated mathematical abilities as the result of buying candy from wholesalers, pricing it in collaboration with adults and experienced peers, and bargaining with customers on city streets (Saxe, 1988). And as the research reported in the Cultural Influences box on the following page indicates, adults encourage culturally valued skills in children at a remarkably early age.

Vygotsky’s theory, and the research stimulated by it, reveal that children in every culture develop unique strengths. At the same time, Vygotsky’s emphasis on culture and social experience led him to neglect the biological side of development. Although he recognized the importance of heredity and brain growth, he said little about their role in cognitive change. Furthermore, Vygotsky’s focus on social transmission of knowledge meant that he placed less emphasis than other theorists on children’s capacity to shape their own development. Followers of Vygotsky stress that children actively participate in the conversations and social activities from which their development springs. From these joint experiences, they not only acquire culturally valued practices but also modify and transform those practices (Rogoff, 1998, 2003). Contemporary sociocultural theorists grant the individual and society balanced, mutually influential roles.

Ecological Systems Theory

Urie Bronfenbrenner is responsible for an approach that has moved to the forefront of the field because it offers the most differentiated and complete account of contextual influences on children’s development. Ecological systems theory views the child as developing within a complex system of relationships affected by multiple levels of the surrounding environment. Since the child’s biologically influenced dispositions join with environmental forces to mold development, Bronfenbrenner recently characterized his perspective as a bioecological model (Bronfenbrenner & Evans, 2000).
Bronfenbrenner envisions the environment as a series of nested structures that includes but extends beyond home, school, and neighborhood settings in which children spend their everyday lives (see Figure 1.4 on page 28). Each layer of the environment is viewed as having a powerful impact on development.

**THE MICROSYSTEM** • The innermost level of the environment is the microsystem, which consists of activities and interaction patterns in the child's immediate surroundings. Bronfenbrenner emphasizes that to understand child development at this level, we must keep in mind that all relationships are bidirectional. That is, adults affect children's behavior, but children's biologically and socially influenced characteristics—their physical attributes, personalities, and capacities—also affect adults' behavior. For example, a friendly, attentive child is likely to evoke positive and patient reactions from parents, whereas an irritable or distractible youngster is more likely to be a target of parental impatience, restriction, and punishment. When these reciprocal interactions occur often over time, they have an enduring impact on development (Collins et al., 2000; Crockenberg & Leerkes, 2003).

At the same time, third parties—other individuals in the microsystem—affect the quality of any two-person relationship. If they are supportive, then interaction is enhanced. For example, when parents encourage one another in their child-rearing roles, each engages in

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**CULTURAL INFLUENCES**

**!Kung Infancy: Acquiring Culture**

Interactions between caregivers and infants take different forms in different cultures. Through those interactions, adults start to transmit their society's values and skills to the next generation, channeling the course of future development.

Focusing on a culture very different from our own, researchers studied how caregivers respond to infants' play with objects among the !Kung, a hunting-and-gathering society living in the desert regions of Botswana, Africa (Bakeman et al., 1990). Daily foraging missions take small numbers of adults several miles from the campground, but most obtain enough food to contribute to group survival by working only 3 out of every 7 days. A mobile way of life also prevents the !Kung from collecting many possessions that require extensive care and maintenance. Adults have many free hours to relax around the campfire, and they spend it in intense social contact with one another and with children (Draper & Cashdan, 1988).

In this culture of intimate social bonds and minimal property, objects are valued as things to be shared, not as personal possessions. This message is conveyed to !Kung children at a very early age. Between 6 and 12 months, grandmothers start to train babies in the importance of exchanging objects by guiding them in handing beads to relatives. The child's first words generally include /"Here, take this/" and /na/ ("Give it to me").

In !Kung society, no toys are made for infants. Instead, natural objects, such as twigs, grass, stones, and nutshell, are always available, along with cooking implements. However, adults do not encourage babies to play with these objects. In fact, adults are unlikely to interact with infants while they are exploring objects independently. But when a baby offers an object to another person, adults become highly responsive, encouraging and vocalizing much more than at other times. Thus, the !Kung cultural emphasis on the interpersonal rather than physical aspects of existence is reflected in how adults interact with the very youngest members of their community.

When you next have a chance, observe the conditions under which parents in your own society respond to infants' involvement with objects. How is parental responsiveness linked to cultural values? How does it compare with findings on the !Kung?
more effective parenting. In contrast, when a marriage is tense and hostile, parents often interfere with one another’s child-rearing efforts, are less responsive to children’s needs, and criticize, express anger, and punish (Cox, Paley, & Harter, 2001; McHale et al., 2002). Similarly, children can affect their parents’ relationship in powerful ways. For example, as Chapter 14 will reveal, divorce is often associated with lasting emotional problems. Yet research reveals that long before the marital breakup, some children were impulsive and defiant. These behaviors may have contributed to, as well as been caused by, their parents’ marital problems (Hetherington, 1999; Shaw, Winslow, & Flanagan, 1999).

**Figure 1.4**
Structure of the environment in ecological systems theory. The microsystem concerns relations between the child and the immediate environment; the mesosystem, connections among immediate settings; the exosystem, social settings that affect but do not contain the child; and the macrosystem, the values, laws, customs, and resources of the culture that affect activities and interactions at all inner layers. The chronosystem (not pictured) is not a specific context. Instead, it refers to the dynamic, ever-changing nature of the person’s environment.

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Family–neighborhood connections, at the level of the mesosystem in ecological systems theory, enhance development. A young girl proudly carries the Canadian flag in the Chinese New Year parade in the Chinatown district of Vancouver, British Columbia. The event fosters self-confidence, cooperation, and identification with her community and culture.

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**THE MESOSYSTEM** The second level of Bronfenbrenner’s model, the mesosystem, encompasses connections between microsystems, such as home, school, neighborhood, and child-care center. For example, a child’s academic progress depends not just on activities that take place in classrooms. It is also promoted by parent involvement in school life and the extent to which academic learning is carried over into the home (Epstein & Sanders, 2002). Similarly, parent-child interaction at home is likely to affect caregiver-child interaction in the child-care setting, and vice versa. Each relationship is more likely to support development when there are links, in the form of visits and cooperative exchanges of information, between home and child care.

Family–neighborhood connections are especially important for economically disadvantaged children. Affluent families are not as dependent on their immediate surroundings for social support, education, and leisure pursuits. They can afford to reach beyond the streets near their homes, transporting their children to lessons and entertainment and, if necessary, to better-quality schools in distant parts of the community (Elliott et al., 1996). In low-income neighborhoods, after-school programs that provide families with child care and offer children art, music, sports, scouting, and other special experiences are linked to improved school performance and psychological adjustment in middle childhood (Posner & Vandell, 1994; Vandell & Posner, 1999). Neighborhood organizations, such as religious youth groups and special-interest clubs, contribute to favorable development in adolescence, including self-confidence, school
achievement, educational aspirations, and responsible social behavior (Gonzales et al., 1996; Kerestes & Youniss, 2003).

- **THE EXOSYSTEM** - The exosystem is made up of social settings that do not contain children but nevertheless affect their experiences in immediate settings. These can be formal organizations, such as parents’ workplaces, their religious institutions, and health and welfare services in the community. For example, flexible work schedules and paid leave for childbirth and child illness are ways that work settings can help parents rear children and, indirectly, enhance development. Exosystem supports can also be informal, such as parents’ social networks—friends and extended-family members who provide advice, companionship, and even financial assistance. Research confirms the negative impact of a breakdown in exosystem activities. Families who are socially isolated because they have few personal or community-based ties or who are affected by unemployment show increased rates of conflict and child abuse (Emery & Laumann-Billings, 1998).

- **THE MACROSYSTEM** - The outermost level of Bronfenbrenner’s model, the macrosystem, consists of cultural values, laws, customs, and resources. The priority that the macrosystem gives to children’s needs affects the support they receive at inner levels of the environment. For example, in countries that require high-quality standards for child care and workplace benefits for employed parents, children are more likely to have favorable experiences in their immediate settings. As you will see in greater detail later in this chapter and in other parts of this book, such programs are far less available in the United States than in Canada and other industrialized nations (Children’s Defense Fund, 2004; Kamerman, 2000).

- **AN EVER-CHANGING SYSTEM** - According to Bronfenbrenner, the environment is not a static force that affects children in a uniform way. Instead, it is ever-changing. Important life events, such as the birth of a sibling, the beginning of school, or parents’ divorce, modify existing relationships between children and their environment, producing new conditions that affect development. In addition, the timing of environmental change affects its impact. The arrival of a new sibling has very different consequences for a homebound toddler than for a school-age child with many relationships and activities beyond the family.

  Bronfenbrenner refers to the temporal dimension of his model as the chronosystem (the prefix chrono- means “time”). Changes in life events can be imposed on the child, as in the examples just given. Alternatively, they can arise from within the child, since as children get older they select, modify, and create many of their own settings and experiences. How they do so depends on their physical, intellectual, and personality characteristics and their environmental opportunities. Therefore, in ecological systems theory, development is neither controlled by environmental circumstances nor driven by inner dispositions. Instead, children are both products and producers of their environments, so both children and the environment form a network of interdependent effects. Notice how our discussion of resilient children on page 9 illustrates this idea. We will see many more examples throughout this book.

**New Directions: Development as a Dynamic System**

Today, researchers recognize both consistency and variability in child development and want to do a better job of explaining variation. Consequently, a new wave of theorists has adopted a dynamic systems perspective. According to this view, the child’s mind, body, and physical and social worlds form an integrated system that guides mastery of new skills. The system is dynamic, or constantly in motion. A change in any part of it—from brain growth to physical and social surroundings— disrupts the current organism–environment relationship. When this happens, the child actively reorganizes her behavior so that the components of the system work together again but in a more complex, effective way (Fischer & Bidell, 1998; Spencer & Schöner, 2003; Thelen & Smith, 1998).

Researchers adopting a dynamic systems perspective try to find out just how children attain new levels of organization by studying their behavior while they are in transition (Thelen & Corbetta, 2002). For example, when presented with an attractive toy, how does a 3-month-old baby who shows many, varied movements discover how to reach for it? On hearing a new word, how does a 2-year-old figure out the category of objects or events to which it refers?
Dynamic systems theorists acknowledge that a common human genetic heritage and basic regularities in children's physical and social worlds yield certain universal, broad outlines of development. But biological makeup, everyday tasks, and the people who support children in mastery of those tasks vary greatly, leading to wide individual differences in specific skills. Even when children master the same skills, such as walking, talking, or adding and subtracting, they often do so in unique ways. And because children build competencies by engaging in real activities in real contexts, different skills vary in maturity within the same child. From this perspective, development cannot be characterized as a single line of change. As Figure 1.5 shows, it is more like a web of fibers branching out in many directions, each of which represents a different skill area that may undergo continuous and stagewise transformations (Fischer & Bidell, 1998).

The dynamic systems view has been inspired by other scientific disciplines, especially biology and physics. In addition, it draws on information-processing and contextual theories—evolutionary developmental psychology, sociocultural theory, and ecological systems theory. At present, dynamic systems research is in its early stages. The perspective has largely been applied to children's motor and cognitive skills, but some investigators have drawn on it to explain emotional and social development as well (Fogel, 2000; Lewis, 2000). Consider the young teenager, whose body and reasoning powers are changing massively and who is also confronting the challenges of secondary school. Researchers following parent–child interaction over time found that the transition to adolescence disrupted family communication. It became unstable and variable for several years—a mix of positive, neutral, and negative exchanges. Gradually, as parent and adolescent devised new, more mature ways of relating to one another, the system reorganized and stabilized. Once again, interaction became predictable and mostly positive (Granic et al., 2003).

As dynamic systems research illustrates, today investigators are tracking and analyzing development in all its complexity. In doing so, they hope to move closer to an all-encompassing approach to understanding change.

Figure 1.5
The dynamic systems view of development. Rather than envisioning a single line of stagewise or continuous change (refer to Figure 1.2 on page 0), dynamic systems theorists conceive of development as a web of fibers branching out in many directions. Each strand in the web represents a skill within the major domains of development—physical, cognitive, and emotional/social. The differing directions of the strands signify possible variations in paths and outcomes as the child masters skills necessary to participate in diverse contexts. The interconnections of the strands within the vertical windows portray stagelike changes—periods of major transformation in which various skills work together as a functioning whole. As the web expands, skills become more numerous, complex, and effective. (Adapted from Fischer & Bidell, 1998.)
Comparing Child Development Theories

In the preceding sections, we reviewed major theoretical perspectives in child development research. They differ in many respects. First, they focus on different domains of development. Some, such as the psychoanalytic perspective and ethology, emphasize emotional and social development. Others, such as Piaget’s cognitive-developmental theory, information processing, and Vygotsky’s sociocultural theory, stress changes in thinking. The remaining approaches—behaviorism, social learning theory, evolutionary developmental psychology, ecological systems theory, and the dynamic systems perspective—discuss many aspects of children’s functioning. Second, every theory contains a point of view about development. As we conclude our review of theoretical perspectives, identify the stand each theory takes on the controversial issues presented at the beginning of this chapter. Then check your analysis against Table 1.4 on page 32.

Finally, we have seen that theories have strengths and limitations. Perhaps you found that you are attracted to some theories, but you have doubts about others. As you read more about child development in later chapters, you may find it useful to keep a notebook in which you test your theoretical likes and dislikes against the evidence. Don’t be surprised if you revise your ideas many times, just as theorists have done throughout this century. By the end of this course, you will have built your own personal perspective on child development. Very likely, it will be an eclectic position, or blend of several theories, since every viewpoint we have considered has contributed to what we know about children.

Applied Directions: Child Development and Social Policy

In recent years, the field of child development has become increasingly concerned with applying its vast knowledge base to solving pressing social problems. At the dawn of a new millennium, we know much more than ever before about family, school, and community contexts that foster physically healthy and cognitively and socially competent children. Yet a nation’s values, policies, and programs powerfully affect children’s experiences in these immediate contexts.

Social policy is any planned set of actions by a group, institution, or governing body directed at attaining a social goal. When widespread social problems arise, nations attempt to solve them through a special type of social policy called public policy—laws and government programs aimed at improving current conditions. Return to Bronfenbrenner’s ecological systems theory, and note how the concept of the macrosystem suggests that sound public policies are essential for protecting children’s well-being. For example, when poverty increases and families become homeless, a country might decide to build more low-cost housing, raise the minimum wage, and increase welfare benefits. When reports indicate that many children are not
achieving well in school, federal and state or provincial governments might grant more tax money to school districts, strengthen teacher preparation, and make sure that help reaches children who need it most.

American and Canadian public policies that safeguard children and youths have lagged behind policies in other developed nations. A striking indicator is that about 16 percent of
American and Canadian children are poor—rates that climb to 32 percent for Native-American children, 34 percent for African-American and Hispanic children, and 60 percent for Canadian Aboriginal children. Families hit hardest are parents under age 25 with young children. For single mothers with infants and preschoolers, the poverty rate in both countries is nearly 50 percent (Canada Campaign 2000, 2003, 2004; U.S. Census Bureau, 2004b).

Of all Western nations, the United States has the highest percentage of extremely poor children. More than 6 percent of American children live in deep poverty (well below the poverty threshold, the income level judged necessary for a minimum living standard), compared with 2.5 percent of Canadian children. However, these circumstances are worrisome in both countries because the earlier poverty begins, the deeper it is, and the longer it lasts, the more devastating are its effects. Children of poverty are more likely than other children to suffer from lifelong poor physical health, persistent deficits in cognitive development and academic achievement, high school dropout, mental illness, and antisocial behavior (Children’s Defense Fund, 2004; Poulton et al., 2002; Seccombe, 2002).

As Table 1.5 on page 34 reveals, the United States does not rank well on any key measure of children’s health and well-being. Canada fares somewhat better, devoting considerably more of its resources to education and health. For example, Canada grants all its citizens government-funded health care. In contrast, approximately 12 percent of American children—most of them in low-income families—have no health insurance, making children the largest segment of the U.S. uninsured population (Children’s Defense Fund, 2004).

The problems of children extend beyond the indicators included in the table. For example, the United States and Canada have been slow to move toward national standards and funding for child care. In both countries, affordable child care is in short supply, and much of it is of substandard quality (Goelman et al., 2000; NICHD Early Child Care Research Network, 2000a). In families affected by divorce, weak enforcement of child support payments heightens poverty in mother-headed households. By the time they finish high school, many North American non-college-bound young people do not have the vocational preparation they need to contribute fully to society. And about 11 percent of U.S. and Canadian adolescents leave high school without a diploma (Bushnik, Barr-Telford, & Bussière, 2004; U.S. Department of Education, 2004b). Most are from low-income families and have a long history of poor academic achievement, lack of interest in schoolwork, and low academic self-esteem. Dropouts who do not return to finish their education are at risk for lifelong poverty.

Why have attempts to help children and youths in the United States and (to a lesser extent) Canada been difficult to realize? A complex set of cultural, political, and economic forces is involved.

Culture and Public Policies

Each semester, I ask my students to think about the question, Who should be responsible for rearing young children? Here are some typical answers: “If parents decide to have a baby, then they should be ready to care for it.” “Most people want to rear their own children and are not happy about others intruding into family life.” These statements reflect a widely held opinion.

1Aboriginal peoples in Canada include three groups: (1) First Nations, or Native Canadian peoples; (2) Inuit, most of whom live in northern Canada; and (3) Métis, or mixed-blood people of both Native Canadian and European descent.
in North America—that the care and rearing of young children, and paying for that care, are the duty of parents, and only parents. This view has a long history—one in which independence, self-reliance, and the privacy of family life emerged as central North American values (Halfon & McLearn, 2002). It is one reason that the public has been slow to endorse government-supported benefits for all families, such as high-quality child care. And it has also contributed to the large number of American and Canadian children who remain poor, despite the fact that their parents are gainfully employed (Pohl, 2002; Zigler & Hall, 2000).

Consider our discussion so far, and you will see that it reflects cultural variation in values that strongly influence public policies: the extent to which individualism versus collectivism prevails. In individualistic societies, people think of themselves as separate entities and are largely concerned with their own personal needs. In collectivist societies, people define themselves as part of a group and stress group goals over individual goals (Triandis, 1995). Although individualism tends to increase as cultures become more complex, cross-national differences remain. The United States is strongly individualistic, and Canada falls in between the United States and most Western European nations, which lean toward collectivism.

Furthermore, less consensus exists among North American than among European citizens on issues of child and family policy, resulting in fewer and more limited programs—ones that target only the most economically disadvantaged and leave many needy children unserved (Ripple & Zigler, 2003). And good social programs are expensive; they must compete for a fair share of a country’s economic resources. Children can easily remain unrecognized because they cannot vote or speak out to protect their own interests, as adult citizens do (Zigler & Finn-Stevenson, 1999). Instead, they must rely on the goodwill of others to make them an important government priority.

Without vigilance from child advocates, policies directed at solving one social problem can work at cross-purposes with children’s well-being, leaving them in dire straights or worsening their condition. Consider, for example, welfare reforms aimed at returning welfare recipients to the work force. As the Social Issues box on the following page makes clear, these policies can help or harm children, depending on whether they lift a family out of poverty.

### Table 1.5 How Do the United States and Canada Compare to Other Nations on Indicators of Children’s Health and Well-Being?

<table>
<thead>
<tr>
<th>Indicator</th>
<th>U.S. Rank</th>
<th>Canadian Rank</th>
<th>Some Countries the United States and Canada Trail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood povertyb (among 23 industrialized</td>
<td>19th</td>
<td>19th</td>
<td>Australia, Czech Republic, Germany, Norway, Sweden, Spain</td>
</tr>
<tr>
<td>nations considered)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant deaths in the first year of life</td>
<td>26th</td>
<td>16th</td>
<td>Hong Kong, Ireland, Singapore, Spain</td>
</tr>
<tr>
<td>(worldwide)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teenage pregnancy rate (among 28 industrialized</td>
<td>28th</td>
<td>21st</td>
<td>For Canada: Australia, Czech Republic, Denmark, Poland, Netherlands</td>
</tr>
<tr>
<td>nations considered)</td>
<td></td>
<td></td>
<td>For the U.S.: Iceland, Portugal, Hungary, Slovak Republic</td>
</tr>
<tr>
<td>Public expenditures on education as a percentage of gross domestic product (among 22 industrialized nations considered)</td>
<td>10th</td>
<td>6th</td>
<td>For Canada: Israel, Sweden</td>
</tr>
<tr>
<td>Public expenditures on health as a percentage of gross domestic productc (among 22 industrialized nations considered)</td>
<td>16th</td>
<td>4th</td>
<td>For Canada: France, Iceland, Switzerland</td>
</tr>
</tbody>
</table>

1. a = highest, or best, rank
2. The U.S. and Canadian childhood poverty rates of 17 percent greatly exceed those of any of these nations. For example, the rate is 12 percent in Australia, 6 percent in the Czech Republic, 4 percent in Norway, and 2.5 percent in Sweden.
3. Gross domestic product is the value of all goods and services produced by a nation during a specified time period. It provides an overall measure of a nation’s wealth.

Welfare Reform, Poverty, and Child Development

In the mid-1990s, the United States and Canada recast their welfare policies, putting in place welfare-to-work programs that ended decades of guaranteed government financial aid to needy families. In these new systems, recipients must go to work or face reduced or terminated benefits. The goal is to encourage welfare families to become self-sufficient. The U.S. program is strictly time limited. A family can be on welfare for only 24 continuous months, with a lifetime limit of 60 months, and the states can further restrict these benefits. For example, a state can prevent payments from increasing if recipients have more children, and it can deny teenage single mothers any benefits. Canadian welfare policies, while strongly employment focused, are not as stringent. In Ontario, for example, welfare recipients must actively look for a job, engage in community volunteer work while acquiring work skills, and take any paid work offered that they are physically capable of performing. If these criteria are not met, eligibility for welfare ends. However, unlike the U.S. policy, a family’s benefits increase if family size increases while the family is on welfare. Nevertheless, several provinces have reduced these payments (National Forum on Welfare to Work, 2004).

Until recently, most government-sponsored evaluations of welfare-to-work focused on declines in the number of families on the welfare rolls. By these standards, welfare-to-work seemed to be a resounding success. But as researchers looked more closely, they found that in the years after welfare reform, some people made successful transitions to financial independence—typically, those who had more schooling and fewer mental health problems. Others, however, had difficulty meeting work requirements, lost their benefits, and fell deeper into poverty. Consequently, as welfare caseloads declined, the incomes of the poorest single-mother families dropped sharply (Lindsey & Martin, 2003; Primus et al., 1999).

Designers of welfare-to-work assumed that it would have positive benefits for children. But moving off welfare without increasing family income poses serious risks to child development. In one study, mothers who left welfare and also left poverty engaged in more positive parenting and had preschoolers who showed more favorable cognitive development, compared with working mothers whose incomes remained below the poverty threshold. Among these mothers, harsh, coercive parenting remained high (Smith et al., 2001). In additional research, families who moved from welfare to a combination of welfare and work experienced a greater reduction in young children’s behavior problems than families who moved to total reliance on work (Dunifon, Kalil, & Danziger, 2003; Genestian & Morris, 2003). Why was the welfare–work combination so beneficial? Most welfare recipients must take unstable jobs with erratic work hours and minimal or no benefits. Working while retaining some welfare support probably gave mothers an added sense of economic stability. In the United States, it also sustained government-provided health insurance (Medicaid), a major source of American parents’ worry about leaving welfare (Kalil, Schweingrub, & Seefeldt, 2001). The resulting lessening of financial anxiety seemed to enhance children’s adjustment.

In sum, welfare reform promotes children’s development only when it results in a more adequate standard of living. Punitive aspects of welfare-to-work that reduce or cut off benefits push families deeper into poverty, with destructive consequences for children’s well-being. Because of a shortage of affordable child care, mothers on welfare who have infants and preschoolers are least able to earn enough by working. Yet poverty is most harmful to development when it occurs early in life (see page 000).

Welfare policies in other Western nations do not just encourage parents to be better providers. They also protect children from the damaging effects of poverty. France, for example, guarantees most of its citizens a modest minimum income. Single parents receive an extra amount during their child’s first 3 years—a benefit that acknowledges a special need for income support during this period. Government-funded, high-quality child care begins at age 3, enabling mothers to go to work knowing that their children’s development is supported (Duncan & Brooks-Gunn, 2000). Canada offers working parents more generous tax refunds than are available in the United States. Still, widespread poverty in both nations underscores the need for more effective poverty prevention policies—one that help poor families rear children while they transition to financial independence.
Contributions of Child Development Research

As the evidence in the Social Issues box suggests, for a policy to be effective in meeting children's needs, research must guide it at every step—during design, implementation, and evaluation of the program. Events of the 1960s and 1970s initiated the current trend toward greater involvement of child development researchers in the policy process (Zigler & Finn-Stevenson, 1999).

For example, in 1965, research on the importance of early experiences for children's intellectual development played a major role in the founding of Project Head Start, the largest educational and family-services intervention program for poverty-stricken preschool children in the United States. In Chapter 8, we will see that several decades of research on the long-term benefits of Head Start helped the program survive, contributed to recent increased government support, and inspired the Aboriginal Head Start Program in Canada. In another instance, findings on the severe impact of malnutrition on early brain development stimulated government-sponsored supplemental food programs. Since the 1970s, the U.S. Special Supplemental Food Program for Women, Infants, and Children (WIC) and the Canadian Prenatal Nutrition Program (CPNP) have supplied poverty-stricken women and their young children with food packages, nutrition education, breastfeeding support, and referral to health and social services.

As researchers examined the impact of child and family services, they saw how settings remote from children's daily lives affect their well-being. As a result, investigators broadened their focus to include wider social contexts, such as workplace, community, mass media, and government. They also addressed the impact of societal changes on children, including high rates of poverty, divorce, family violence, teenage parenthood, and maternal employment. All these efforts have helped to refine existing policies, inspire new initiatives, and expand our understanding of child development. The field of child development now recognizes that sound public policy is among the most powerful tools for preventing developmental problems and enhancing children's quality of life.

Looking Toward the Future

Policies aimed at fostering children's development can be justified on two grounds. The first is that children are the future—the parents, workers, and citizens of tomorrow. Investing in children yields valuable returns to a nation's economy and quality of life. In contrast, failure to invest in children results in “economic insufficiency, loss of productivity, shortages in needed skills, high health care costs, growing prison costs, and a nation that will be less safe, less caring, and less free” (Heckman & Masterov, 2004; Hernandez, 1994, p. 20).

Second, child-oriented policies can be defended on humanitarian grounds—children's basic rights as human beings. In 1989, the United Nations General Assembly, with the assistance of experts from many child-related fields, drew up the Convention on the Rights of the Child, a legal agreement among nations that commits each cooperating country to work toward guaranteeing environments that foster children's development, protect them from harm, and enhance their community participation and self-determination. Examples of rights include the highest attainable standard of health; an adequate standard of living; freedom of thought, conscience, and religion, subject to appropriate parental guidance and national law. Canada's Parliament ratified the Convention in 1991, shortly after the United Nations completed it. Although the United States played a key role in drawing up the Convention, it is one of only two countries in the world whose legislature has not yet ratified it. (The other nation is Somalia, which currently does not have a recognized national government.) American individualism has stood in the
way. Opponents of the Convention maintain that its provisions would shift the burden of child rearing from the family to the state (Woodhouse, 2001).

Despite the worrisome condition of many children and families, efforts are being made to improve their condition. Throughout this book, we will discuss many successful programs that could be expanded. Also, growing awareness of the gap between what we know and what we do to better children’s lives has led experts in child development to join with concerned citizens as advocates for more effective policies. As a result, several influential interest groups devoted to the well-being of children have emerged.

In the United States, the most vigorous of these groups is the Children’s Defense Fund. This private, nonprofit organization founded by Marion Wright Edelman in 1973 engages in research, public education, legal action, drafting of legislation, congressional testimony, and community organizing. Each year, it publishes The State of America’s Children, which provides a comprehensive analysis of children’s condition, including government-sponsored programs that serve children and families and proposals for improving those programs. To learn more about the Children’s Defense Fund, visit its website at www.childrensdefense.org.

In 1991, Canada initiated a public education movement, called Campaign 2000, to build nationwide awareness of the extent and consequences of child poverty and to lobby government representatives for improved policies benefiting children. Diverse organizations—including professional, religious, health, and labor groups at national, provincial, and community levels—have joined forces to work toward campaign goals. These include raising basic living standards so no child lives in poverty, ensuring each child affordable, appropriate housing, and strengthening child care and other community resources that assist families in rearing children. Consult www.campaign2000.ca to explore the work of Campaign 2000, including its annual Report Card on Child Poverty in Canada.

Finally, more researchers are collaborating with community and government agencies to enhance the social relevance of their investigations. They are also doing a better job of disseminating their findings to the public, through television documentaries, newspaper stories, magazine articles, websites, and direct reports to government officials. As a result, they are helping to create the sense of immediacy about the condition of children and families that is necessary to spur a society into action.

**Ask Yourself**

| REVIEW | Explain why both strong advocacy and policy-relevant research are vital for designing and implementing public policies that meet children’s needs. |
| APPLY | Check your local newspaper or one or two national news magazines to see how often articles on the condition of children and families appear. Why is it important for researchers to communicate with the general public about children’s needs? |
| CONNECT | Give an example of how cultural values and economic decisions affect child-oriented public policies? What level of Bronfenbrenner’s ecological systems theory contains these influences? |
| REFLECT | Do you agree with the widespread North American sentiment that government should not intrude in family life? Explain. |
The Field of Child Development

What is the field of child development, and what factors stimulated expansion of the field?

- Child development is an interdisciplinary field devoted to the study of human constancy and change from conception through adolescence. It is part of a larger discipline known as developmental psychology, or human development, which includes the entire lifespan. Child development research has been stimulated by both scientific curiosity and social pressures to better the lives of children.

How is child development typically divided into manageable domains and periods?

- Child development often is divided into three domains. (1) physical development, (2) cognitive development, and (3) emotional and social development. These domains are not really distinct; they form an integrated whole.

- Researchers generally segment child development into five periods, each of which brings with it new capacities and social expectations that serve as important transitions in major theories: (1) the prenatal period, (2) infancy and toddlerhood, (3) early childhood, (4) middle childhood, and (5) adolescence. Many contemporary youths experience an additional period of development called emerging adulthood, in which they engage in further exploration prior to assuming adult roles.

Basic Issues

Identify three basic issues on which child development theories take a stand.

- Almost all child development theories take a stand on the following controversial issues: (1) Is development a continuous process, or does it follow a series of discontinuous stages? (2) Does one general course of development characterize all children, or do many possible courses exist, depending on the contexts in which children grow up? (3) Is development primarily influenced by nature or nurture, and is it stable or open to change?

- More recent theories take a balanced stand on these issues. And contemporary researchers realize that answers may vary across domains of development and even, as research on resilience illustrates, across individuals.

Historical Foundations

Describe major historical influences on current theories of child development.

- Contemporary theories of child development have roots extending far into the past. As early as medieval times, childhood was regarded as a separate phase of life. In the descriptive facts about children. Binet and Simon constructed the first successful intelligence test, which sparked interest in individual differences in development and led to a heated controversy over nature versus nurture. Baldwin’s theory was ahead of its time in granting nature and nurture equal importance and regarding children and their social surroundings as mutually influential.

Mid-Twentieth-Century Theories

What theories influenced the study of child development in the mid-twentieth century?

- In the 1930s and 1940s, psychiatrists and social workers turned to the psychoanalytic perspective for help in treating children’s emotional and behavior problems. Freud’s psychosexual theory, children move through five stages, during which three parts of the personality—id, ego, and superego—become integrated. Erikson’s psychosocial theory builds on Freud’s theory by emphasizing the ego as a positive force in development, the development of culturally relevant attitudes and skills, and the lifespan nature of development.

- As the psychoanalytic perspective gained in prominence, behaviorism and social learning theory emerged, emphasizing principles of conditioning and modeling and practical procedures of behavior modification to eliminate undesirable behaviors and increase desirable responses. But behaviorism and social learning theory have been criticized for offering too narrow a view of important environmental influences and disregarding children’s contributions to their own development.

- Piaget’s cognitive-developmental theory emphasizes that children actively construct knowledge as they manipulate and explore their world. According to Piaget, children move through four stages, beginning with the baby’s sensorimotor action patterns and ending with the elaborate, abstract reasoning system of the adolescent and adult. Piaget’s theory has stimulated a wealth of research on children’s thinking and encouraged educational programs that emphasize discovery learning. Nevertheless, his stagewise view of development has been challenged for underestimating the competencies of young children and for paying insufficient attention to social and cultural influences.

Recent Theoretical Perspectives

Describe recent theoretical perspectives on child development.

- Information processing views the mind as a complex, symbol-manipulating system, much like a computer. This approach helps researchers achieve a detailed understanding of what children of different ages do when faced with tasks and problems. Information processing has led to teaching interventions that help children approach tasks in more advanced ways. As yet, however, it has not generated a comprehensive theory of development.
Four perspectives emphasize contexts for development. Ethology stresses the evolutionary origins and adaptive value of behavior and inspired the sensitive period concept. In evolutionary developmental psychology, researchers have extended this emphasis, seeking to understand the adaptiveness of species-wide competencies as they change over time.

Vygotsky’s sociocultural theory has enhanced our understanding of cultural influences, especially in the domain of cognitive development. Through cooperative dialogues with more knowledgeable members of society, children come to use language to guide their own thought and actions and acquire culturally relevant knowledge and skills. But Vygotsky’s emphasis on culture and social experience led him to neglect the biological side of development.

In ecological systems theory, nested layers of the environment—microsystem, mesosystem, exosystem, and macrosystem—are seen as major influences on children’s well-being. The chronosystem represents the dynamic, ever-changing nature of children and their experiences.

Inspired by ideas in other sciences and recent perspectives in child development, a new wave of theorists has adopted a dynamic systems perspective to account for wide variation in development. According to this view, the mind, body, and physical and social worlds form an integrated system that guides mastery of new skills. A change in any part of the system prompts the child to reorganize her behavior so the various components work together again, but in a more complex, effective way.

Comparing Child Development Theories

Identify the stand taken by each major theory on the basic issues of child development.

Theories that are major forces in child development research vary in their focus on different domains of development, in their view of development, and in their strengths and limitations. (For a full summary, see Table 1.4 on page 00.)

Applied Directions: Child Development and Social Policy

Explain the importance of social policies for safeguarding children’s well-being, and cite factors that affect the policy-making process, noting the role of child development research.

The field of child development has become increasingly concerned with applying its vast knowledge base to solving pressing social problems. When widespread problems arise, nations attempt to solve them through a special type of social policy called public policy. Favorable laws and government programs are essential for safeguarding children’s well-being. American and (to a lesser extent) Canadian public policies favoring children and youths have lagged behind policies in other developed nations.

Many factors influence supportive public policies, including cultural values that stress collectivism over individualism, a nation’s economic resources, and organizations and individuals that advocate for children’s needs. Policy-relevant research helps refine existing policies, forge new policy directions, and expand our understanding of child development.

Important Terms and Concepts

behavior modification (p. 20)
behaviorism (p. 19)
child development (p. 4)
chronosystem (p. 29)
cognitive-developmental theory (p. 21)
collectivist society (p. 34)
contexts (p. 8)
continuous development (p. 7)
developmental psychology (p. 4)
discontinuous development (p. 7)
dynamic systems perspective (p. 29)
ecological systems theory (p. 26)
ethology (p. 24)
evolutionary developmental psychology (p. 25)
exosystem (p. 29)
human development (p. 4)
individualistic society (p. 34)
information processing (p. 23)
macrosystem (p. 29)
maturational (p. 12)
mesosystem (p. 28)
microsystem (p. 27)
nature–nurture controversy (p. 8)
noble savage (p. 12)
normative approach (p. 14)
psychoanalytic perspective (p. 16)
psychosexual theory (p. 16)
psychosocial theory (p. 18)
public policy (p. 31)
resilience (p. 10)
sensitive period (p. 24)
social learning theory (p. 20)
social policy (p. 31)
sociocultural theory (p. 25)
stage (p. 8)
tabula rasa (p. 12)
three
theory (p. 6)