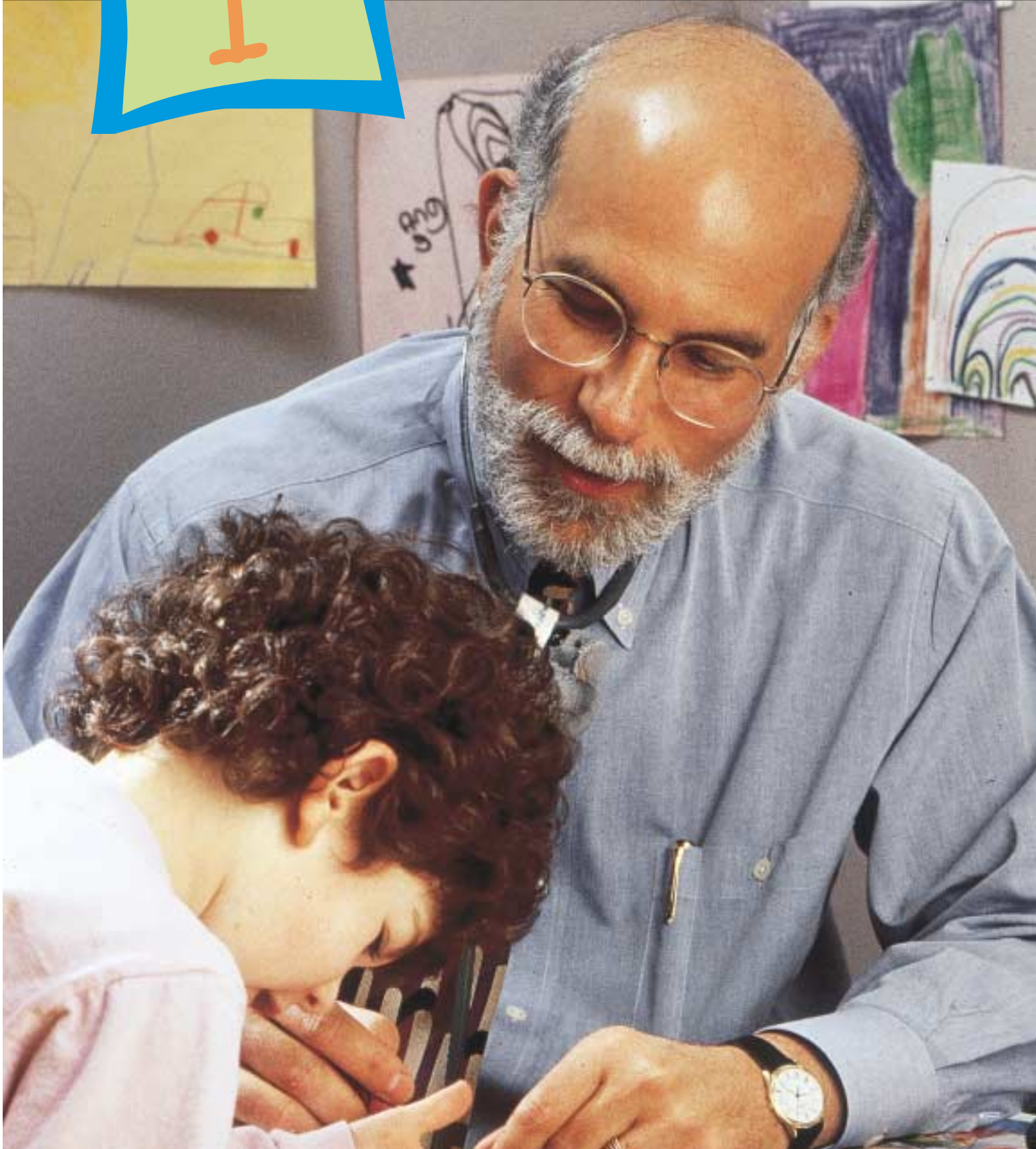


chapter

1



Studying A Child's World



There is nothing permanent except change.

Heraclitus, fragment (sixth century B.C.)

Focus Victor, the Wild Boy of Aveyron*



Victor

On January 8, 1800, a naked boy, his face and neck heavily scarred, appeared on the outskirts of the village of Saint-Sernin in the sparsely populated province of Aveyron in south central France. The boy, who was only four and a half feet tall but looked about 12 years old, had been spotted several times during the previous two and a half years, climbing trees, running on all fours, drinking from streams, and foraging for acorns and roots.

When the dark-eyed boy came to Saint-Sernin, he neither spoke nor responded to speech. Like an animal accustomed to living in the wild, he spurned prepared foods and tore off the clothing people tried to put on him. It seemed clear that he had either lost his parents or been abandoned by them, but how long ago this had occurred was impossible to tell.

The boy appeared during a time of intellectual and social ferment, when a new, scientific outlook was beginning to replace mystical speculation. Philosophers debated questions about the nature of human beings—questions that would become central to the study of child development. Are the qualities, behavior, and ideas that define what it means to be human inborn or acquired, or both? How important is social contact during the formative years? Can its lack be overcome? A study of a child who had grown up in isolation might provide evidence of the relative impact of “nature” (inborn characteristics) and “nurture” (up-bringing, schooling, and other societal influences).

After initial observation, the boy, who came to be called Victor, was sent to a school for deaf-mutes in Paris. There, he was turned over to Jean-Marc-Gaspard Itard, an ambitious 26-year-old practitioner of the emerging science of “mental medicine,” or psychiatry. Itard believed that Victor’s development had been limited by isolation and that he simply needed to be taught the skills that children in civilized society normally acquire.

Itard took Victor into his home and, during the next five years, gradually “tamed” him. Itard first awakened his pupil’s ability to discriminate sensory experience through hot baths and dry rubs. He then moved on to painstaking, step-by-step training of emotional responses and instruction in moral and social behavior, language, and thought. The methods Itard used—based on principles of imitation, conditioning, and behavioral modification, all of which we discuss in Chapter 2—were far ahead of their time, and he invented many teaching devices used today.

But the education of Victor (which was dramatized in Francois Truffaut’s film *The Wild Child*) was not an unqualified success. The boy did make remarkable progress: he learned the names of many objects and could read and write simple sentences; he could express desires, obey commands, and exchange ideas. He showed affection, especially for Itard’s housekeeper, Madame Guérin, as well as such emotions as pride, shame, remorse, and the desire to please. However, aside from uttering some vowel and consonant sounds, he never learned to speak. Furthermore, he remained totally focused on his own wants and needs and never seemed to

*Sources of information about the wild boy of Aveyron were Frith (1989) and Lane (1976).

Focus Victor, the Wild Boy of Aveyron

The Study of Child Development: Then and Now

- Early Approaches
- Studying the Life Span
- New Frontiers
- An Emerging Consensus

The Study of Child Development: Basic Concepts

- Developmental Processes: Change and Stability
- Domains of Development
- Periods of Development

Influences on Development

- Heredity, Environment, and Maturation
- Major Contextual Influences
- Normative and Nonnormative Influences
- Timing of Influences: Critical or Sensitive Periods

lose his yearning “for the freedom of the open country and his indifference to most of the pleasures of social life” (Lane, 1976, p. 160). When the study ended, Victor—no longer able to fend for himself, as he had done in the wild—went to live with Madame Guérin until his death in his early forties in 1828.



Why did Victor fail to fulfill Itard’s hopes for him? The boy may have been a victim of brain damage, autism (a brain disorder involving lack of social responsiveness), or severe early maltreatment. Itard’s instructional methods, advanced as they were, may have been inadequate. Itard himself came to believe that the effects of long isolation could not be fully overcome, and that Victor may have been too old, especially for language learning.

Although Victor’s story does not yield definitive answers to the questions Itard set out to explore, it is important because it was one of the first systematic attempts to study child development. Since Victor’s time, we have learned much about how children develop, but developmental scientists are still investigating such fundamental questions as the relative importance of nature and nurture and how they work together. Victor’s story dramatizes the challenges and complexities of the scientific study of child development—the study on which you are about to embark.

In this chapter, we describe how the field of child development has itself developed as scientists have learned more about infants, children, and adolescents. We present the goals and basic concepts of the field today. We identify aspects of development and show how they interrelate. We summarize major developments during each period of a child’s life. We look at influences on development and the contexts in which it occurs.

After you have read and studied this chapter, you should be able to answer each of the Guidepost questions that appear at the top of the next page. Look for them again in the margins, where they point to important concepts throughout the chapter. To check your understanding of these Guideposts, review the end of chapter summary. Checkpoints located at periodic spots throughout the chapter will help you verify your understanding of what you have read.



Guideposts for Study

1. What is child development, and how has its study evolved?
2. What are six fundamental points on which consensus has emerged?
3. What do developmental scientists study?
4. What are the three major aspects and five periods of child development?
5. What kinds of influences make one child different from another?

The Study of Child Development: Then and Now

From the moment of conception, human beings undergo processes of development. The field of **child development** is the scientific study of those processes. Developmental scientists—people engaged in the professional study of child development—look at ways in which children change from conception through adolescence, as well as at characteristics that remain fairly stable.

Child development has, of course, been going on as long as children have existed, but its formal scientific study is relatively new. Looking back, we can see dramatic changes in the ways of investigating the world of childhood.

Early Approaches

Early forerunners of the scientific study of child development were *baby biographies*, journals kept to record the early development of a single child. One early journal, published in 1787 in Germany, contained Dietrich Tiedemann's (1797/1787) observations of his son's sensory, motor, language, and cognitive behavior during the first 2½ years. Typical of the speculative nature of such observations was Tiedemann's conclusion, after watching the infant suck more continuously on a cloth tied around something sweet than on a nurse's finger, that sucking appeared to be "not instinctive, but acquired" (Murchison & Langer, 1927, p. 206).

It was Charles Darwin, originator of the theory of evolution, who first emphasized the *developmental* nature of infant behavior. In 1877, in the belief that human beings could be better understood by studying their origins—both as a species and as individuals—Darwin published an abstract of his notes on his son's sensory, cognitive, and emotional development during the first 12 months (see Focus vignette at the beginning of Chapter 7). Darwin's journal gave "baby biographies" scientific respectability; about 30 more were published during the next three decades (Dennis, 1936).

By the end of the nineteenth century, several important trends were preparing the way for the scientific study of child development. Scientists had unlocked the mystery of conception and (as in the case of the wild boy of Aveyron) were arguing about the relative importance of "nature" and "nurture" (inborn characteristics and external influences). The discovery of germs and immunization made it possible for many more children to survive infancy. Because of an abundance of cheap labor, children were less needed as workers. Laws protecting them from long workdays let them spend more time in school, and parents and teachers became more concerned with identifying and meeting children's developmental needs. The new science of psychology taught that people could understand themselves by learning what had influenced them as children.

Still, this new discipline had far to go. Adolescence was not considered a separate period of development until the early twentieth century, when G. Stanley Hall, a pioneer in child study, published a popular (though unscientific) book called *Adolescence* (1904/1916).



Guidepost 1

What is child development, and how has its study evolved?

child development Scientific study of processes of change and stability from conception through adolescence.

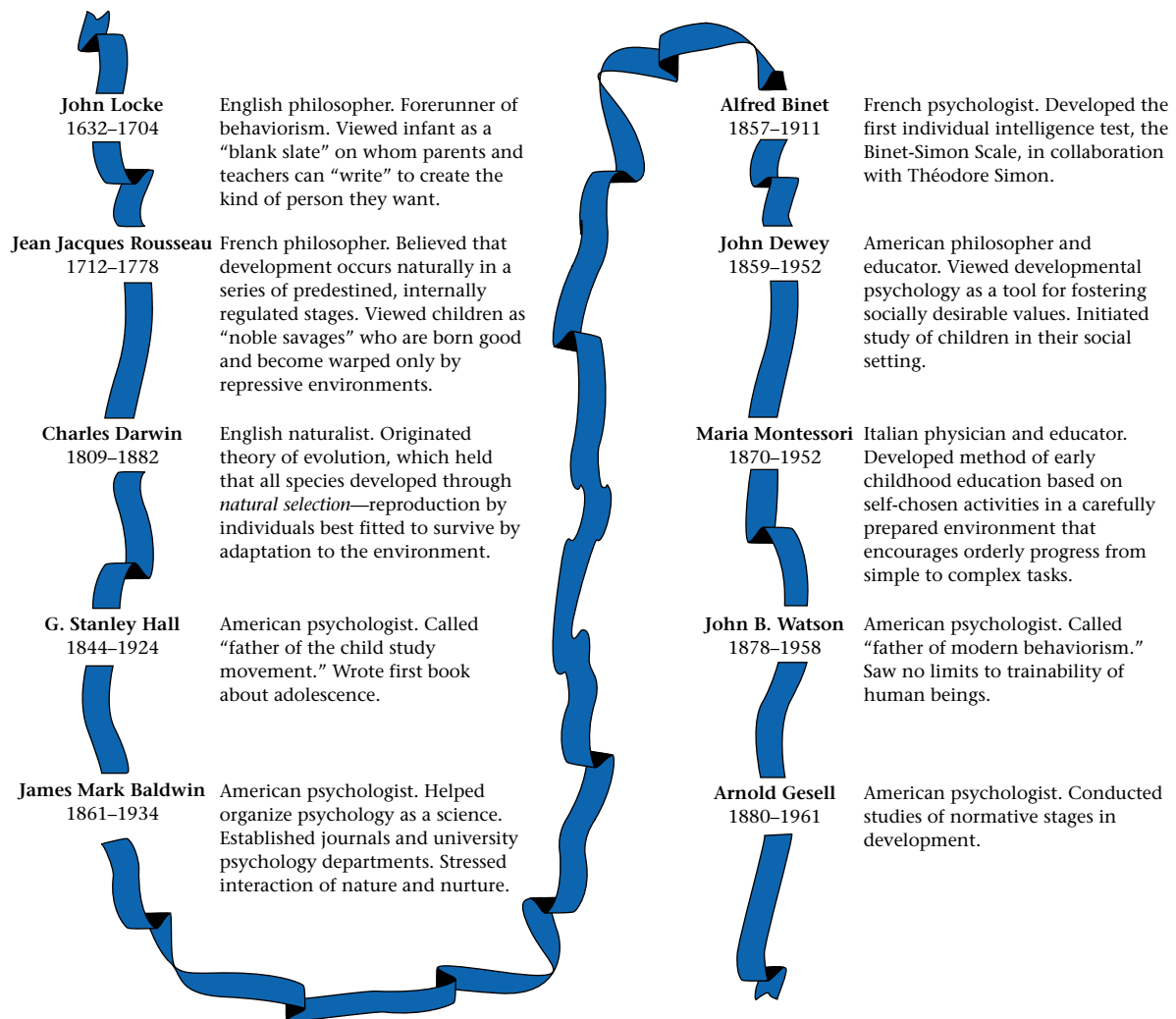


Figure 1-1
Some pioneers in the study of a child’s world: A timeline.

Figure 1-1 presents summaries, in historical order, of the ideas and contributions of Darwin, Hall, and some of the other early pioneers in the study of child development.

Studying the Life Span

Full life-span studies in the United States grew out of programs designed to follow children through adulthood. The Stanford Studies of Gifted Children (began in 1921 under the direction of Lewis M. Terman) continue to trace the development of people (now in old age) who were identified as unusually intelligent in childhood. Other major studies that began around 1930—the Fels Research Institute Study, the Berkeley Growth and Guidance Studies, and the Oakland (Adolescent) Growth Study—have given us much information on long-term development.

Today the study of child development is part of the broader study of *human development*, which covers the entire life span from conception to death. Although growth and development are most obvious in childhood, they occur throughout life. Students of child development draw on a wide range of disciplines, including psychology, psychiatry, sociology, anthropology, biology, genetics (the study of inherited characteristics), family science (the interdisciplinary study of family relations), education, history, philosophy, and medicine. This book includes findings from research in all these fields.

New Frontiers

Although children have been the focus of scientific study for more than one hundred years, this exploration is an ever-evolving endeavor. The questions that developmentalists seek to answer, the methods they use, and the explanations they propose are more sophisticated than they were even twenty-five years ago. These shifts reflect progress in understanding, as new investigations build on or challenge those that went before. They also reflect the changing cultural and technological context.

Sensitive instruments that measure eye movements are turning up intriguing connections between infant visual attentiveness and childhood intelligence. Cameras, videocassette recorders, and computers allow investigators to scan infants' facial expressions for early signs of emotions and to analyze how mothers and babies communicate. Advances in brain imaging make it possible to probe the mysteries of temperament and to pinpoint the sources of logical thought.

The classic distinction between *basic research*, the kind undertaken purely in a spirit of intellectual inquiry, and *applied research*, which addresses a practical problem, is becoming less meaningful. Increasingly, research findings have direct application to child rearing, education, health, and social policy. For example, research into preschool children's understanding of death can enable adults to help a child deal with bereavement; research on children's memory can help determine the weight to be given children's courtroom testimony; and research on factors that increase the risks of low birthweight, antisocial behavior, and teenage suicide can suggest ways to prevent these ills.

An Emerging Consensus

As the study of children has matured, a broad consensus has emerged on several fundamental points.

1. *All domains of development are interrelated.* Although developmental scientists often look separately at various *domains*, or aspects, of development, each affects the others. For example, increasing physical mobility helps a baby learn about the world. The hormonal and physical changes of puberty affect emotional development.
2. *Normal development includes a wide range of individual differences.* Each child, from the start, is unlike anyone else in the world. One is outgoing, another shy. One is agile, another awkward. How do those differences, and a multitude of others, come about? Some of the influences on individual development are inborn; others come from experience, or, most often, from a combination of the two. Family characteristics, the effects of gender, social class, and ethnicity, and the presence or absence of physical, mental, or emotional disability all affect the way a child develops.
3. *Children help shape their own development and influence others' responses to them.* Right from the start, through the responses they evoke in others, infants mold their environment and then respond to the environment they have helped create. Influence is *bidirectional*: when babies babble and coo, adults tend to talk to them, which then makes the baby "talk" more.
4. *Historical and cultural contexts strongly influence development.* Each child develops within a specific environment, bounded by time and place. A child born in the United States today is likely to have very different experiences from a child born in colonial America, and also from a child born in Morocco or Greenland.
5. *Early experience is important, but children can be remarkably resilient.* A traumatic incident or a severely deprived childhood may well have grave emotional consequences, but the life histories of countless people show that often the effects of painful experience, such as growing up in poverty or the death of a parent, can be overcome.
6. *Development in childhood is connected to development throughout the rest of the life span.* At one time, it was believed that growth and development end, as this book does, with adolescence. Today most developmental scientists agree that development goes on throughout life. As long as people live, they have the potential to change.

Checkpoint

Can you . . .

- ✓ Trace highlights in the evolution of the study of child development?
- ✓ Name some pioneers in that study and summarize their most important contributions?
- ✓ Give examples of practical applications of research on child development?



Guidepost 2

What are six fundamental points on which consensus has emerged?

Checkpoint

Can you . . .

- ✓ Summarize six fundamental points of agreement that have emerged from the study of child development?



Guidepost 3

What do developmental scientists study?

quantitative change Change in number or amount, such as in height, weight, or size of vocabulary.

qualitative change Change in kind, structure, or organization, such as the change from nonverbal to verbal communication.



Guidepost 4

What are three major aspects and five periods of child development?

social construction Concept about the nature of reality, based on societally shared perceptions or assumptions.

The Study of Child Development: Basic Concepts

The processes of change and stability that developmental scientists study occur in all aspects of development and throughout all periods of the life span.

Developmental Processes: Change and Stability

Developmental scientists study two kinds of change: *quantitative* and *qualitative*. **Quantitative change** is a change in number or amount, such as growth in height, weight, vocabulary, or frequency of communication. **Qualitative change** is a change in kind, structure, or organization. It is marked by the emergence of new phenomena that cannot easily be anticipated on the basis of earlier functioning, such as the change from a nonverbal child to one who understands words and can communicate verbally.

Despite these changes, most people show an underlying *stability*, or constancy, of personality and behavior. For example, about 10 to 15 percent of children are consistently shy, and another 10 to 15 percent are very bold. Although various influences can modify these traits somewhat, they seem to persist to a moderate degree, especially in children at one extreme or the other (see Chapter 3).

Which of a child's characteristics are most likely to endure? Which are likely to change, and why? These are among the questions that developmental scientists seek to answer.

Domains of Development

The study of child development is complicated by the fact that change and stability occur in various aspects of the self. To simplify discussion, developmental scientists talk separately about *physical development*, *cognitive development*, and *psychosocial development*. Actually, though, these domains of development are interrelated. Throughout life, each affects the others.

Growth of the body and brain, sensory capacities, motor skills, and health are part of *physical development* and may influence other aspects of development. For example, a child with frequent ear infections may develop language more slowly than a child without this problem. During puberty, dramatic physiological and hormonal changes affect the developing sense of self.

Change and stability in mental abilities, such as learning, memory, language, thinking, moral reasoning, and creativity constitute *cognitive development*. They are closely related to physical and emotional growth. The ability to speak depends on the physical development of the mouth and brain. A child who has difficulty expressing herself in words may evoke negative reactions in others, influencing her popularity and sense of self-worth.

Change and stability in personality, emotional life, and social relationships together constitute *psychosocial development*, and this can affect cognitive and physical functioning. Anxiety about taking a test can impair performance. Social support can help children cope with the potentially negative effects of stress on physical and mental health. Conversely, physical and cognitive capacities can affect psychosocial development. They contribute greatly to self-esteem and can affect social acceptance.

Although we will be looking separately at physical, cognitive, and psychosocial development, a child is more than a bundle of isolated parts. Development is a unified process. Throughout the text, we will highlight links among the three major domains of development.

Periods of Development

The concept of periods of development is a **social construction**: an idea about the nature of reality accepted by members of a particular society at a particular time on the basis of shared subjective perceptions or assumptions. There is no single, objectively definable

moment when a child becomes an adolescent, or an adolescent becomes an adult. Indeed, the concept of childhood itself can be viewed as a social construction. Some evidence indicates, though it has been disputed, that children in earlier times were regarded and treated much like small adults (Ariès, 1962; Elkind, 1986; Pollock, 1983). Even now, in some developing countries, children labor alongside their elders, doing the same kinds of work for equally long hours.

In industrial societies, as we have mentioned, the concept of adolescence as a period of development is quite recent. In some nonindustrial societies, it does not exist. The Chippewa Indians, for example, have only two periods of childhood: from birth until the child walks, and from walking to puberty. What we call adolescence is part of adulthood (Broude, 1995), as was true in western societies before industrialization.

In this book, we follow a sequence of five periods generally accepted in western industrial societies. After describing the crucial changes that occur in the first period, before birth, we trace all three aspects of development through infancy and toddlerhood, early childhood, middle childhood, and adolescence (see Table 1-1). These age divisions are approximate and somewhat arbitrary. Individual differences exist in the way children deal with the characteristic events and issues of each period. One toddler may be toilet trained by 18 months; another, not until 3 years. Despite these differences, however, developmental scientists believe that certain basic developmental needs must be met and certain developmental tasks must be mastered during each period for normal development to occur.

Infants are dependent on adults to meet their basic needs for food, clothing, and shelter, as well as for human contact and affection. They form attachments to parents or caregivers, who also become attached to them. With the development of speech and self-locomotion, toddlers become more self-reliant; they need to assert their autonomy but also need parents to help them keep their impulses in check. During early childhood, children develop more self-control and more interest in other children. During middle childhood, control over behavior gradually shifts from parent to child, and the peer group becomes increasingly important. A main task of adolescence is the search for identity—personal, sexual, and occupational. As adolescents become physically mature, they deal with sometimes conflicting needs and emotions as they prepare to separate from the parental nest.

Influences on Development

Students of development are interested in processes of development that affect every normal child, but they also want to know about **individual differences**, both in influences on development and in its outcome. Children differ in sex, height, weight, and body build; in constitutional factors such as health and energy level; in intelligence; and in personality characteristics and emotional reactions. The contexts of their lives and lifestyles differ, too: the homes, communities, and societies they live in, the relationships they have, the kinds of schools they go to (or whether they go to a formal school at all), and how they spend their free time.

All these differences, and more, may help explain why one child turns out unlike another. Because development is complex, and the factors that affect it cannot always be measured precisely, scientists cannot answer that question fully. However, they have learned much about what children need to develop normally, how they react to the many influences upon and within them, and how they can best fulfill their potential.

Heredity, Environment, and Maturation

Some influences on development originate primarily with **heredity**: the inborn genetic endowment from the biological parents. Others come largely from the inner and outer **environment**: the experiences that impinge on a person, beginning in the womb. Individual differences increase as children grow older. Many typical changes of infancy and early childhood seem to be tied to **maturation** of the body and brain—the unfolding of a natural sequence of physical changes and behavior patterns, including readiness to master new abilities such as walking and talking. As children grow into adolescents and then into adults,

Checkpoint

Can you . . .

- ✓ Distinguish between quantitative and qualitative development and give an example of each?
- ✓ Identify three domains of development and give examples of how they are interrelated?
- ✓ Name five periods of human development (as defined in this book) and list several key issues or events of each period?

What's your view?

- Why do you think various societies divide the periods of development differently?



Guidepost 5

What kinds of influences make one child different from another?

individual differences

Differences among children in characteristics, influences, or developmental outcomes.

heredity Inborn influences or traits inherited from biological parents.

environment Totality of nonhereditary, or experiential, influences on development.

maturation Unfolding of a natural sequence of physical and behavioral changes, including readiness to master new abilities.

Table 1-1

Typical Major Developments in Five Periods of Child Development

Age Period	Physical Developments	Cognitive Developments	Psychosocial Developments
<i>Prenatal Period (conception to birth)</i>	<p>Conception occurs</p> <p>The genetic endowment interacts with environmental influences from the start.</p> <p>Basic body structures and organs form.</p> <p>Brain growth spurt begins.</p> <p>Physical growth is the most rapid in the life span.</p> <p>Vulnerability to environmental influences is great.</p>	<p>Abilities to learn and remember and to respond to sensory stimuli are developing.</p>	
<i>Infancy and Toddlerhood (birth to age 3)</i>	<p>All senses and body systems operate at birth to varying degrees.</p> <p>The brain grows in complexity and is highly sensitive to environmental influence.</p> <p>Physical growth and development of motor skills are rapid.</p>	<p>Abilities to learn and remember are present, even in early weeks.</p> <p>Use of symbols and ability to solve problems develop by end of second year.</p> <p>Comprehension and use of language develop rapidly.</p>	<p>Attachments to parents and others form.</p> <p>Self-awareness develops.</p> <p>Shift from dependence to autonomy occurs.</p> <p>Interest in other children increases.</p>
<i>Early Childhood (3 to 6 years)</i>	<p>Growth is steady; appearance becomes more slender and proportions more adultlike.</p> <p>Appetite diminishes, and sleep problems are common.</p> <p>Handedness appears; fine and gross motor skills and strength improve.</p>	<p>Thinking is somewhat egocentric, but understanding of other people's perspectives grows.</p> <p>Cognitive immaturity leads to some illogical ideas about the world.</p> <p>Memory and language improve.</p> <p>Intelligence becomes more predictable.</p>	<p>Self-concept and understanding of emotions become more complex; self-esteem is global.</p> <p>Independence, initiative, self-control, and self-care increase.</p> <p>Gender identity develops.</p> <p>Play becomes more imaginative, more elaborate, and more social.</p> <p>Altruism, aggression, and fearfulness are common.</p> <p>Family is still focus of social life, but other children become more important.</p> <p>Attending preschool is common.</p>
<i>Middle Childhood (6 to 11 years)</i>	<p>Growth slows.</p> <p>Strength and athletic skills improve.</p> <p>Respiratory illnesses are common, but health is generally better than at any other time in life span.</p>	<p>Egocentrism diminishes. Children begin to think logically but concretely.</p> <p>Memory and language skills increase.</p> <p>Cognitive gains permit children to benefit from formal schooling.</p> <p>Some children show special educational needs and strengths.</p>	<p>Self-concept becomes more complex, affecting self-esteem.</p> <p>Coregulation reflects gradual shift in control from parents to child.</p> <p>Peers assume central importance.</p>
<i>Adolescence (11 to about 20 years)</i>	<p>Physical growth and other changes are rapid and profound.</p> <p>Reproductive maturity occurs.</p> <p>Major health risks arise from behavioral issues, such as eating disorders and drug abuse.</p>	<p>Ability to think abstractly and use scientific reasoning develops.</p> <p>Immature thinking persists in some attitudes and behaviors.</p> <p>Education focuses on preparation for college or vocation.</p>	<p>Search for identity, including sexual identity, becomes central.</p> <p>Relationships with parents are generally good.</p> <p>Peer groups help develop and test self-concept but also may exert an antisocial influence.</p>

differences in innate (inborn) characteristics and life experience play a greater role as children adapt to, or deal with, the internal and external conditions in which they find themselves.

Even in processes that all children go through, rates and timing of development vary. Throughout this book, we talk about average ages for the occurrence of certain behaviors: the first word, the first step, the first menstruation or “wet dream,” the development of

logical thought. But these ages are *merely* averages. Only when deviation from the average is extreme should we consider development exceptionally advanced or delayed.

In trying to understand the similarities and differences in development, then, we need to look at the *inherited* characteristics that give each person a special start in life. We also need to consider the many *environmental* factors that affect people, especially such major contexts as family, neighborhood, socioeconomic status, ethnicity, and culture. We need to see how heredity and environment interact. We need to look at influences that affect many or most children at a certain age or a certain time in history, and also at those that affect only certain individuals. Finally, we need to look at how timing can affect the impact of certain influences.

Major Contextual Influences

Human beings are social beings. Right from the start, they develop within a social and historical context. For an infant, the immediate context normally is the family; and the family in turn is subject to the wider and ever-changing influences of neighborhood, community, and society.

Family

Family may mean something different in different times and places. The dominant family unit in western societies, dating back to preindustrial times, is the **nuclear family**, a two-generational kinship, economic, and household unit consisting of two parents and their natural or adopted children (Hareven, 1986).

In many other societies, such as those of Asia and Latin America, the **extended family**—a multigenerational kinship network of grandparents, aunts, uncles, cousins, and more distant relatives—is the traditional pattern of societal organization, and many or most people live in *extended-family households*, where they have daily contact with kin. However, that pattern is now eroding in developing countries, due to industrialization and migration to urban centers (N. M. Brown, 1990; Gorman, 1993).

Among some U.S. minority groups, particularly those of African, Hispanic, Asian Pacific, and Native American origin, close extended family ties provide strong support systems, and extended-family households are common. Social roles tend to be flexible: adults often share breadwinning, and children are given responsibility for younger brothers and sisters (Harrison, Wilson, Pine, Chan, & Buriel, 1990; Levitt, Guacci-Franco, & Levitt, 1993).

Socioeconomic Status and Neighborhood

Socioeconomic status (SES) combines several related factors, including income, education, and occupation. Throughout this book, we describe many studies that relate SES to developmental processes (such as differences in mothers' verbal interaction with their children) and to developmental outcomes (such as health and cognitive performance; see Table 1-2). It is generally not SES itself that affects these outcomes, but factors associated with SES, such as the kinds of homes and neighborhoods children live in and the quality of nutrition, medical care, supervision, schooling, and other opportunities available to them. Poor children, for example, are more likely than other children to have emotional or behavioral problems, and their cognitive potential and school performance suffer even more (Brooks-Gunn, Britto, & Brady, 1998; Brooks-Gunn & Duncan, 1997; Duncan & Brooks-Gunn, 1997; McLoyd, 1998). The harm done by poverty may be indirect, through its impact on parents' emotional state and parenting practices and on the home environment they create. The challenges of poverty can strain relationships and drain time and energy from parenting. (In Chapter 14 we'll look more closely at indirect effects of poverty.)

SES limits a family's choice of where to live. Researchers have begun to study how the composition of a neighborhood affects the way children turn out. So far, the most powerful factors seem to be average neighborhood *income* and *human capital*—the presence of educated, employed adults who can build the community's economic base and provide models of what a child can hope to achieve (Brooks-Gunn et al., 1997; Leventhal & Brooks-Gunn, 2000). Threats to children's well-being multiply if several **risk factors**—conditions that

nuclear family Kinship and household unit made up of parents and their natural or adopted children.

extended family Kinship network of parents, children, and other relatives, sometimes living together in an *extended-family household*.

socioeconomic status (SES) Combination of economic and social factors describing an individual or family, including income, education, and occupation.

risk factors Conditions that increase the likelihood of a negative developmental outcome.

Outcome	Poor Children's Higher Risk Relative to Nonpoor Children
<i>Health</i>	
Death in childhood	1.5 to 3 times more likely
Stunted growth	2.7 times more likely
Iron deficiency in preschool years	3 to 4 times more likely
Partial or complete deafness	1.5 to 2 times more likely
Partial or complete blindness	1.2 to 1.8 times more likely
Serious physical or mental disabilities	About 2 times more likely
Fatal accidental injuries	2 to 3 times more likely
Pneumonia	1.6 times more likely
<i>Education</i>	
Average IQ score at age 5	9 points lower
Average achievement scores at age 3 and above	11 to 25 percentiles lower
Learning disabilities	1.3 times more likely
Placement in special education	2 or 3 percentage points more likely
Below-usual grade for child's age	2 percentage points more likely for each year of childhood spent in poverty
Dropping out between ages 16 and 24	2 times more likely than middle-income youths; 11 times more likely than wealthy youths

Source: Children's Defense Fund, 1998, p. xiv; from Sherman, 1997, p. 4.

increase the likelihood of a negative outcome—coexist. Living in a poor neighborhood with large numbers of people who are unemployed and on welfare makes it less likely that effective social support will be available (Black & Krishnakumar, 1998).

Culture and Ethnicity

culture A society's or group's total way of life, including customs, traditions, beliefs, values, language, and physical products—all learned behavior passed on from parents to children.

ethnic group Group united by ancestry, race, religion, language, and/or national origins, which contribute to a sense of shared identity.

Culture refers to a society's or group's total way of life, including customs, traditions, beliefs, values, language, and physical products, from tools to artworks—all the learned behavior passed on from parents to children. Culture is constantly changing, often through contact with other cultures. For example, when Europeans arrived on American shores, they soon learned from the native Indians how to grow corn. And today American music is popular around the world.

Some cultures have variant *subcultures*, associated with certain groups, usually ethnic groups, within a society. An **ethnic group** consists of people united by ancestry, race, religion, language, and/or national origins, which contribute to a sense of shared identity and shared attitudes, beliefs, and values. Most ethnic groups trace their roots to a country of origin, where they or their forebears had a common culture that continues to influence their way of life.

The United States has always been a nation of immigrants and ethnic groups. The European-descended "majority" actually consists of many distinct ethnic groups—German, Belgian, Irish, French, Italian, and so forth. There also is diversity within minority groups. Cubans, Puerto Ricans, and Mexican Americans—all Hispanic Americans—have different histories and cultures and varying socioeconomic status. Similarly, African Americans from the rural South differ from those of Caribbean ancestry. Asian Americans, too, hail from a variety of countries with distinct cultures, from modern, industrial Japan to communist China to the remote mountains of Nepal, where many people still practice their ancient way of life.

In large, multiethnic societies such as the United States, immigrant or minority groups *acculturate*, or adapt, to the majority culture by learning the language and customs needed to get along in the dominant culture while trying to preserve some of their own cultural

practices and values. (Acculturation is not the same as cultural *assimilation*, in which the minority simply adopts the ways of the majority.) Children often grow up in neighborhoods with other members of their own ethnic group, reinforcing shared cultural patterns. These cultural patterns may influence the composition of the household, its economic and social resources, the way its members act toward one another, the foods they eat, the games children play, the way they learn, and how well they do in school.

The Historical Context

At one time developmental scientists paid little attention to the historical context—the time in which children grow up. Then, as the early longitudinal studies of childhood extended into the adult years, investigators began to focus on how particular experiences, tied to time and place, affect the course of children’s lives. The Terman sample, for example, reached adulthood in the 1930s, during the Great Depression; the Oakland sample, during World War II; and the Berkeley sample around 1950, the postwar boom period. What did it mean to be a child in each of these periods? To be an adolescent? To become an adult? The answers differ in important ways (Modell, 1989; see Box 1-1).

Today, as we’ll discuss in the next section, the historical context is part and parcel of the study of development.

Normative and Nonnormative Influences

To understand similarities and differences in development, we must look at influences that impinge on many or most people and at those that touch only certain individuals. We also need to consider influences of time and place (Baltes, Reese, & Lipsitt, 1980).

A **normative** event is experienced in a similar way by most people in a group. *Normative age-graded influences* are highly similar for people in a particular age group. They include biological events (such as puberty) and social events (such as entry into formal education). The timing of biological events is fixed, within a normal range. (Children don’t experience puberty at age 3.) The timing of social events is more flexible and varies in different times and places, within maturational limits. Children in western industrial societies generally begin formal education around age 5 or 6; but in some developing countries, schooling begins much later, if at all.

Normative history-graded influences are common to a particular **cohort**: a group of people who share a similar experience, in this case growing up at the same time in the same place, such as in Oakland during the Great Depression (refer to Box 1-1). Depending on when and where they live, entire generations of children may feel the impact of wars, famines, or nuclear explosions. In western countries, medical advances, as well as improvements in nutrition and sanitation, have dramatically reduced infant and child mortality. As children grow up, they are likely to be influenced by computers, digital television, the Internet, and other technological developments. Social changes, such as the increase in employed mothers, have greatly altered family life. These changes are occurring more slowly in developing countries.

Nonnormative influences are unusual events that have a major impact on individual lives and may cause stress because they are unexpected. They are either typical events that happen at an atypical time of life (such as marriage in the early teens, or the death of a parent when a child is young) or atypical events (such as having a birth defect or being in an automobile crash). They can also, of course, be happy events (such as winning a scholarship). Young people may help create their own nonnormative life events—say, by driving after drinking or by applying for a scholarship—and thus participate actively in their own development.

Timing of Influences: Critical or Sensitive Periods

A **critical period** is a specific time when a given event, or its absence, has the greatest impact on development. For example, if a woman receives X rays, takes certain drugs, or contracts certain diseases at certain times during pregnancy, the fetus may show specific ill

Checkpoint

Can you . . .

- ✓ Explain why individual differences tend to increase with age?
- ✓ Give examples of the influences of family and neighborhood composition, socioeconomic status, culture, ethnicity, and historical context?

normative Characteristic of an event that occurs in a similar way for most people in a group.

cohort Group of people who share a similar experience, such as growing up at the same time and in the same place.

nonnormative Characteristic of an unusual event that happens to a particular person, or a typical event that happens at an unusual time of life.

What’s your view?

- How might you be different if you had grown up in a culture other than your own?

critical period Specific time when a given event, or its absence, has the greatest impact on development.

**Box 1-1 Studying the Life Course: Growing Up in Hard Times**

Our awareness of the need to look at the life course in its social and historical context is indebted in part to Glen H. Elder, Jr. In 1962, Elder arrived on the campus of the University of California at Berkeley to work on the Oakland Growth Study, a longitudinal study of social and emotional development in 167 urban young people born around 1920, about half of them from middle-class homes. The study had begun at the outset of the Great Depression of the 1930s, when the youngsters, who had spent their childhoods in the boom years of the Roaring '20s, were entering adolescence. Elder observed how societal disruption can alter family processes, and through them, children's development (Elder, 1974).

As economic stress changed parents' lives, it changed children's lives, too. Deprived families reassigned economic roles. Fathers, preoccupied with job losses and irritable about their loss of status within the family, sometimes drank heavily. Mothers got outside jobs and took on more parental authority. Parents argued more. Adolescent children tended to show developmental difficulties.

Still, for boys, particularly, the long-term effects of the ordeal were not entirely negative. Boys who got jobs to help out became more independent and were better able to escape the stressful family atmosphere than girls, who helped at home. As adults, they were strongly work-oriented but also valued family activities and cultivated dependability in their children.

Elder noted that effects of a major economic crisis depend on a child's stage of development. The children in the Oakland sample were already teenagers during the 1930s. They could draw

on their own emotional, cognitive, and economic resources. A child born in 1929 would have been entirely dependent on the family. On the other hand, the parents of the Oakland children, being older, may have been less resilient in dealing with the loss of a job, and their emotional vulnerability may well have affected the tone of family life and their treatment of their children.

Fifty years after the Great Depression, in the early 1980s, a precipitous drop in the value of midwestern agricultural land pushed many farm families into debt or off the land. This Farm Crisis gave Elder the opportunity to replicate his earlier research, this time in a rural setting. In 1989, he and his colleagues (Conger & Elder, 1994; Conger et al., 1993) interviewed 451 Iowa farm and small-town families with children of various ages. The researchers also videotaped family interactions.

As in the depression-era study, many of these rural parents, under pressure of economic hardship, developed emotional problems. Depressed parents were more likely to fight with each other and to mistreat or withdraw from their children. The children, in turn, tended to lose self-confidence, to be unpopular, and to do poorly in school. But whereas in the 1980s this pattern of parental behavior fit both mothers and fathers, in the 1930s it was less true of mothers, whose economic role before the collapse had been more marginal (Conger & Elder, 1994; Conger et al., 1993; Elder, 1998).

Elder's work, like other studies of the life course, gives researchers a window into processes of development and their links with socioeconomic change. The Farm Crisis study continues, with the families being reinterviewed yearly. Eventually it may enable us to see long-term effects of early hardship on the later lives of people who experienced it at different ages and in varying family situations.

Source: Unless otherwise referenced, this discussion is based on Elder, 1998.



Glen Elder's studies of children growing up during the Great Depression showed how a major sociohistorical event can affect children's current and future development.

What's your view?

Can you think of a major cultural event within your lifetime that shaped the lives of families and children? How would you go about studying such effects?

Check it out!

For more information on this topic, go to <http://www.mhhe.com/papaliacw9>. There you will be directed to a website containing oral histories of the Great Depression (Reminiscences of the Great Depression, originally published in *Michigan History Magazine*, January–February, 1982 [Vol. 66, No. 1].) Read one of the oral histories and consider how the Great Depression seems to have affected the person whose story is told.

effects. The amount and kind of damage will vary, depending on the nature of the “shock” and on its timing.

A child deprived of certain kinds of experience during a critical period is likely to show permanent stunting of physical development. For example, if a muscle problem interfering with the ability to focus both eyes on the same object is not corrected early in life, the brain mechanisms necessary for binocular depth perception will not develop (Bushnell & Boudreau, 1993).

**Box 1-2** *Is There a Critical Period for Language Acquisition?*

In 1970, a 13½-year-old girl named Genie (not her real name) was discovered in a suburb of Los Angeles (Curtiss, 1977; Fromkin, Krashen, Curtiss, Rigler, & Rigler, 1974; Pines, 1981; Rymer, 1993). The victim of an abusive father, she had been confined for nearly twelve years to a small room in her parents' home, tied to a potty chair and cut off from normal human contact. She weighed only 59 pounds, could not straighten her arms or legs, could not chew, had no bladder or bowel control, and did not speak. She recognized only her own name and the word *sorry*.

Only three years before, Eric Lenneberg (1967, 1969) had proposed that there is a critical period for language acquisition, beginning in early infancy and ending around puberty. Lenneberg argued that it would be difficult, if not impossible, for a child who had not yet acquired language to do so after that age.

The discovery of Genie offered the opportunity for a test of Lenneberg's hypothesis. Could Genie be taught to speak, or was it too late? The National Institutes of Mental Health (NIMH) funded a study, and a series of researchers took over Genie's care and gave her intensive testing and language training.

Genie's progress during the next few years (before the NIMH withdrew funding and her mother regained custody and cut her off from contact with the professionals who had been teaching her) both challenges and supports the idea of a critical period for language acquisition. Genie did learn some simple words and could string them together into primitive, but rule-governed, sentences. She also learned the fundamentals of sign language. But she never used language normally, and "her speech remained, for the most part, like a somewhat garbled telegram" (Pines, 1981, p. 29). When her mother, unable to care for her, turned her over to a series of abusive foster homes, she regressed into total silence.

What explains Genie's initial progress and her inability to sustain it? The fact that she was just beginning to show signs of puberty at age 13½ may indicate that she was still in the critical period, though near its end. The fact that she apparently had learned a few words before being locked up at the age of 20 months may mean that her language-learning mechanisms may have been triggered early in the critical period, allowing later learning to occur. On the other hand, the fact that she was so abused and neglected may have retarded her so much—emotionally, socially, and cognitively—that, like Victor, the wild boy of Aveyron, she cannot be considered a true test of the critical period (Curtiss, 1977).

The concept of critical periods is more controversial when applied to cognitive and psychosocial development. In these domains there seems to be greater **plasticity**, or modifiability of performance. Although the human organism may be particularly *sensitive* to certain psychological experiences at certain times of life, later events often can reverse the effects of early ones. One investigator (Lenneberg, 1967, 1969) did propose a critical period for language development, before puberty, and this concept has been advanced as one explanation for the "wild boy's" limited progress in learning to talk (Lane, 1976; see Box 1-2).

Newer research suggests, however, that the capacity for language acquisition may be fairly resilient. Even if the parts of the brain best suited to language processing are damaged, nearly normal language development can occur—though the child may have to keep playing catch-up with normal children at each new stage of language development

Case studies like those of Genie and Victor dramatize the difficulty of acquiring language after the early years of life, but they do not permit conclusive judgments because there are too many complicating factors. Researchers seeking study participants who lack early exposure to language, but whose environment and development are otherwise normal, have therefore turned to deaf persons for whom American Sign Language (ASL) is the primary language. In one cross-sectional study, the older a person had been when first exposed to ASL, the more likely that person was to sign ungrammatically and inconsistently (Newport, 1991).

A cross-sectional study of Chinese and Korean immigrants supports a critical period for second-language learning as well. The later their age of arrival, up to late adolescence, the worse their mastery of English, which held steady at a low level among those who had arrived as adults (Newport, 1991).

If a critical period for language learning exists, what explains it? Do the brain's mechanisms for acquiring language decay as the brain matures? That would seem strange, since other cognitive abilities improve. An alternative hypothesis is that this very increase in cognitive sophistication interferes with an adolescent's or adult's ability to learn a language. Young children acquire language in small chunks that can be readily digested. Older learners, when they first begin learning a language, tend to absorb a great deal at once and then may have trouble analyzing and interpreting it (Newport, 1991).

What's your view ?

Do you see any ethical problems in the studies of Genie and Victor? Is the knowledge gained from such studies worth any possible damage to the individuals involved? (Keep this question, and your answer, in mind when you read the section on ethics of research in Chapter 2.)

Check it out !

For more information on this topic, go to <http://www.mhhe.com/papaliacw9>. There you will be directed to a website developed by Professor Robert Beard of the Linguistics Program at Bucknell University. The page at that URL gives a brief, accurate overview of the nature-nurture question as it concerns language acquisition. Links to other related sites of interest are also given.

plasticity Modifiability of performance.

What's your view ?

- In view of the critical effect of undernourishment on infants' brain development, does society have a responsibility to prevent it?

Checkpoint

Can you . . .

- ✓ Give examples of normative age-graded, normative history-graded, and nonnormative influences? (Include some normative history-graded influences that impacted different generations.)
- ✓ Explain the concept of “critical” periods and give examples?

(M. H. Johnson, 1998). Further research may help delineate which aspects of development are decisively formed during critical periods and which aspects remain modifiable.

Now that you have had a brief introduction to the field of child development and some of its basic concepts, it’s time to look more closely at the issues developmental scientists think about and how they do their work. In Chapter 2, we discuss some influential theories of how development takes place and the methods investigators commonly use to study it.

Summary and Key Terms

The Study of Child Development: Then and Now

Guidepost 1 What is child development, and how has its study evolved?

- Child development is the scientific study of processes of change and stability.
- The scientific study of child development began toward the end of the nineteenth century. Adolescence was not considered a separate phase of development until the twentieth century. The field of child development is now part of the study of the entire life span, or human development.
- Ways of studying child development are still evolving, making use of advanced technologies.
- The distinction between basic and applied research has become less meaningful.

Guidepost 2 What are six fundamental points on which consensus has emerged?

- Consensus has emerged on several important points. These include (1) the interrelationship of domains of development, (2) the existence of a wide range of individual differences, (3) bidirectionality of influence, (4) the importance of history and culture, (5) children’s potential for resilience, and (6) continuity of development throughout life.

child development (5)

Child Development Today: An Introduction to the Field

Guidepost 3 What do developmental scientists study?

- Developmental scientists study developmental change, both quantitative and qualitative, as well as stability of personality and behavior.
- quantitative change (8) qualitative change (8)**

Guidepost 4 What are three major aspects and five periods of child development?

- The three major domains, or aspects, of development are physical, cognitive, and psychosocial. Each affects the others.
- The concept of periods of development is a social construction. In this book, child development is divided into five periods: the prenatal period, infancy and toddlerhood, early childhood, middle childhood, and adolescence. In each period, children have characteristic developmental needs and tasks.

social construction (8)

Influences on Development

Guidepost 5 What kinds of influences make one child different from another?

- Influences on development come from both heredity and environment. Many typical changes during childhood are related to maturation. Individual differences increase with age.
- In some societies, the nuclear family predominates; in others, the extended family.
- Socioeconomic status (SES) affects developmental processes and outcomes through the quality of home and neighborhood environments, of nutrition, medical care, supervision, and schooling. The most powerful neighborhood influences seem to be neighborhood income and human capital. Multiple risk factors increase the likelihood of poor outcomes.
- Important environmental influences stem from ethnicity, culture, and the historical context. In large, multiethnic societies, immigrant groups often acculturate to the majority culture while preserving aspects of their own.

individual differences (9) heredity (9) environment (9) maturation (9)
nuclear family (11) extended family (11) socioeconomic status (SES) (11) risk factors (11) culture (12) ethnic group (12)

- Influences may be normative (age-graded or history-graded) or nonnormative.
- There is strong evidence of critical periods for certain kinds of early development.

normative (13) nonnormative (13) cohort (13) critical period (13) plasticity (15)

OLC Preview

Chapter 1

The official website for *A Child's World, 9/e*, offers additional information on language acquisition; historic views of childhood; and "Growing Up in Hard Times," complete with recommended

hot links to oral histories of the Great Depression. Check out <http://www.mhhe.com/papaliacw9>.