1

CHAPTER ONE

Studying A Child's World

There is nothing permanent except change.

—Heraclitus, fragment (sixth century B.C.E)

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, behaviour, 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" (upbringing, 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 behaviour, language, and thought.

But the education of Victor (which was dramatized in François 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 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.

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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.

*Sources of information about Victor were Frith (1989) and Lane (1976).

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

2. What aspects and periods of development do developmental scientists study?

3. What kinds of influences make one child different from another?

4. What are six fundamental points about child development on which consensus has emerged?

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

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

The Study of Child Development: Then and Now

The field of **child development** is the scientific study of processes of change and stability in human children. 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.

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

Along with changes such as these, most people show an underlying *stability,* or constancy, in aspects of personality and behaviour. 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, they tend 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.

Early Approaches

The formal *scientific* study of child development is relatively new. Looking back, we can see dramatic changes in the ways of investigating the world of childhood.

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 (1897/1787) observations of his infant son's sensory, motor, language, and cognitive development. 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 behaviour. 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 (Keegan & Gruber, 1985; 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).

Developmental Psychology Becomes a Science

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 Victor) 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 labour, 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). Hall was truly one of the early applied developmental psychologists, promoting child study, parent education, and child welfare, and influencing how professionals work with children (Brooks-Gunn & Duncan-Johnson, 2006).

In Canada, early research in child development began with James Baldwin and his students, including Frederick Tracy, in the late 1800s, who focused on mental development in childhood. With the emerging interest in "mental hygiene" in the 1920s and '30s, institutes of child study were established in Montreal and Toronto, directed by Katharine Banham and William Blatz (Wright, 2002). Since that time, Canadian researchers across the country have made significant contributions to our understanding of child development (Wright, 1999). Figure 1-1 presents summaries, in historical order, of the ideas and contributions of Darwin, Hall, and other early pioneers in the study of child development.

Almost from the start, developmental science has been interdisciplinary (Parke, 2004). Today students of child development draw collaboratively from 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, and medicine. This book includes findings from research in all these fields.

Studying the Lifespan

Lifespan studies in Canada and the United States grew out of programs designed to follow children through to adulthood. William E. Blatz, founder of St. George's School for Child Study at the University of Toronto, Department of Psychology in the 1920s, carried out a longitudinal project at Regal Road Public School in Toronto studying behavioural difficulties and adjustment of 1,400 children from the school years through adolescence and into adulthood (Raymond, 1991; Wright 2002). Blatz was also instrumental in developing the laboratory school for the Dionne Quintuplets, the first known set of identical quintuplets, in the 1930s; however, the ethics of the quintuplets' lack of privacy and freedom to withdraw have been questioned (Prochner & Doyon, 1997).

Today the study of child development is part of the broader study of *human development,* which covers the entire lifespan from conception to death. Although growth and development are most obvious in childhood, they occur throughout life. Indeed, such aspects of adult development as the timing of parenthood, maternal employment, and marital satisfaction have an impact on the way children develop.

New Frontiers

Although children have been the focus of scientific study for more than one hundred years, this exploration is an ever-evolving endeavour. The questions that developmentalists seek to

Figure 1-1

John Locke 1632–1704 — English philosopher. Forerunner of behaviourism. Viewed infant as a "blank slate" on whom parents and teachers can "write" to create the kind of person they want.

Jean Jacques Rousseau 1712–1778 — French philosopher. Believed that development occurs naturally in a series of predestined, internally regulated stages. Viewed children as "noble savages" who are born good and become warped only by repressive environments.

Charles Darwin 1809–1882 — English naturalist. Originated theory of evolution, which held that all species developed through *natural selection*—reproduction by individuals best fitted to survive by adaptation to the environment.

G. Stanley Hall 1844–1924 — American psychologist. Called "father of the child study movement." Wrote first book about adolescence.

James Mark Baldwin 1861–1934 — American psychologist. Helped organize psychology as a science. Established journals and university psychology departments. Developed theories on cognitive development while working to establish a psychology laboratory at the University of Toronto. Stressed interaction of nature and nurture.

Alfred Binet 1857–1911 — French psychologist. Developed the first individual intelligence test, the Binet-Simon Scale, in collaboration with Théodore Simon.

John Dewey 1859–1952 — American philosopher and educator. Viewed developmental psychology as a tool for fostering socially desirable values. Initiated study of children in their social setting.

Maria Montessori 1870–1952 — Italian physician and educator. Developed method of early childhood education based on self-chosen activities in a carefully prepared environment that encourages orderly progress from simple to complex tasks.

John B. Watson 1878–1958 — American psychologist. Called "father of modern behaviourism." Saw no limits to trainability of human beings.

Arnold Gesell 1880–1961 — American psychologist. Conducted studies of normative stages in development.

William E. Blatz 1895–1964 — Canadian psychologist. Director of one of the first child study centres in Canada, who with his collaborators dominated the Canadian child study movement during the first half of the 20th century. His ideas on security in childhood were influential in the work of Mary Ainsworth, who developed an important theory of attachment formation.

Donald O. Hebb 1904–1985 — Canadian psychologist. Considered the father of cognitive psychobiology, whose work influenced later connectionist theories. His research on the effects of early experience was important to efforts in promoting compensatory education in Canada, and Head Start in the United States.
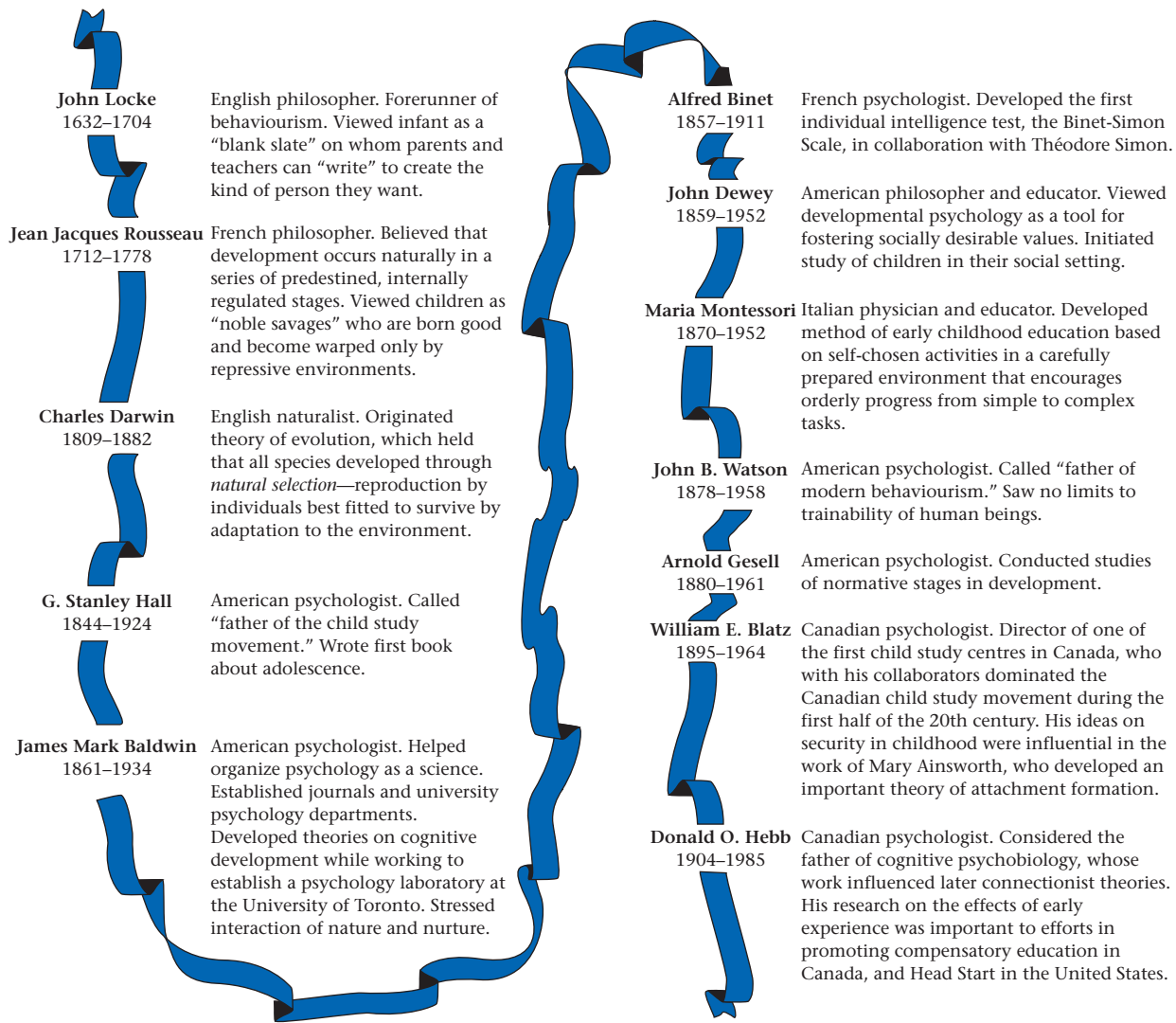
Some pioneers in the study of a child's world: A timeline

Checkpoint ✔

Can you . . .

✔ Distinguish between quantitative and qualitative development and give an example of each?

✔ 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?

answer, the methods they use, and the explanations they propose are more sophisticated than they were even 25 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, video 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 traditional 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 birth weight, antisocial behaviour, and teenage suicide can suggest ways to prevent these ills.

The Study of Child Development: Basic Concepts

The processes of change and stability that developmental scientists study occur in all three aspects, or domains, of the self and throughout all five periods of childhood and adolescence.

Domains of Development

For purposes of study, developmental scientists separate the three domains: *physical development, cognitive development,* and *psychosocial development.* Actually, though, these domains of development are interrelated.

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 with words may evoke negative reactions in others, influencing the child's 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 affect psychosocial development by contributing to self-esteem and 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 domains of development.

physical development Growth of body and brain, including patterns of change in sensory capacities, motor skills, and health

cognitive development Pattern of change in mental abilities, such as learning, attention, memory, language, thinking, reasoning, and creativity

psychosocial development Pattern of change in emotions, personality, and social relationships

Periods of Development

There is no single, objectively definable moment when a child becomes an adolescent, or an adolescent becomes an adult. Thus, the concept of periods of development is an arbitrary one adopted for purposes of social discourse. We call such a concept 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.

Indeed, the concept of childhood itself can be viewed as a social construction. Some evidence indicates that children in earlier times were regarded and treated much like small adults. However, this suggestion has been disputed (Ariès, 1962; Elkind, 1986; Pollock, 1983). Archaeological finds from ancient Greece show that children played with clay dolls and "dice" made of bones of sheep and goats. Pottery and tombstones depict children sitting on high chairs and riding goat-pulled carts (Mulrine, 2004).

In industrial societies, as we have mentioned, the concept of adolescence as a period of development is quite recent. Until the early twentieth century, young people were considered children until they left school (often well before age 13), married or got a job, and entered the adult world. By the 1920s, with the establishment of comprehensive high schools to meet the needs of a growing economy and with more families able to support extended formal education for their children, the teenage years had become a distinct period of development (Keller, 1999). In some preindustrial societies, the concept of adolescence still does not exist. The Chippewa, for example, have only two periods of childhood: from birth until the child walks, and from walking to puberty. What we call adolescence is, for them, part of adulthood (Broude, 1995), as was true in societies before industrialization.

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

Checkpoint ✔

Can you . . .

✔ Identify three domains of development and give examples of how they are interrelated?

✔ Name five periods of child development (as defined in this book) and list several key issues or events of each period?

In this book, we follow a sequence of five periods generally accepted in North American and European 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). Again, these age divisions are approximate and somewhat arbitrary.

Table 1-1	Typical Major Developments in Five Periods of Child Development		
Age Period	**Physical Developments**	**Cognitive Developments**	**Psychosocial Developments**
Prenatal Period (conception to birth)	Conception occurs The genetic endowment interacts with environmental influences from the start. Basic body structures and organs form. Brain growth spurt begins. Physical growth is the most rapid in the lifespan. Vulnerability to environmental influences is great.	Abilities to learn and remember and to respond to sensory stimuli are developing.	
Infancy and Toddlerhood (birth to age 3)	All senses and body systems operate at birth to varying degrees. The brain grows in complexity and is highly sensitive to environmental influence. Physical growth and development of motor skills are rapid.	Abilities to learn and remember are present, even in early weeks. Use of symbols and ability to solve problems develop by end of second year. Comprehension and use of language develop rapidly.	Attachments to parents and others form. Self-awareness develops. Shift from dependence to autonomy occurs. Interest in other children increases.
Early Childhood (3 to 6 years)	Growth is steady; appearance becomes more slender and proportions more adultlike. Appetite diminishes, and sleep problems are common. Handedness appears; fine and gross motor skills and strength improve.	Thinking is somewhat egocentric, but understanding of other people's perspectives grows. Cognitive immaturity leads to some illogical ideas about the world. Memory and language improve. Intelligence becomes more predictable.	Self-concept and understanding of emotions become more complex; self-esteem is global. Independence, initiative, self-control, and self-care increase. Gender identity develops. Play becomes more imaginative, more elaborate, and more social. Altruism, aggression, and fearfulness are common. Family is still focus of social life, but other children become more important. Attending preschool is common.
Middle Childhood (6 to 11 years)	Growth slows. Strength and athletic skills improve. Respiratory illnesses are common, but health is generally better than at any other time in lifespan.	Egocentrism diminishes. Children begin to think logically but concretely. Memory and language skills increase. Cognitive gains permit children to benefit from formal schooling. Some children show special educational needs and strengths.	Self-concept becomes more complex, affecting self-esteem. Coregulation reflects gradual shift in control from parents to child. Peers assume central importance.
Adolescence (11 to about 20 years)	Physical growth and other changes are rapid and profound. Reproductive maturity occurs. Major health risks arise from behavioural issues, such as eating disorders and drug abuse.	Ability to think abstractly and use scientific reasoning develops. Immature thinking persists in some attitudes and behaviours. Education focuses on preparation for university or vocation.	Search for identity, including sexual identity, becomes central. Relationships with parents are generally good. Peer groups help develop and test self-concept but also may exert an anti-social influence.

Although individual differences exist in the way children deal with the characteristic events and issues of each period, developmental scientists suggest that certain basic needs must be met and certain tasks mastered for normal development to occur. Infants, for example, are dependent on adults for food, clothing, and shelter as well as for human contact and affection. They form attachments to parents and 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 set limits on their behaviour. During early childhood, children develop more self-control and more interest in other children. During middle childhood, control over behaviour 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 conflicting needs and emotions as they prepare to leave 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.

individual differences Differences among children in characteristics, influences, or developmental outcomes

Heredity, Environment, and Maturation

Some influences on development originate primarily with **heredity,** inborn traits or characteristics inherited from the biological parents. Other influences come largely from the inner and outer **environment,** the world outside the self beginning in the womb, and the learning that comes from experience—including *socialization,* a child's induction into the value system of the culture. Which of these factors—heredity or environment—has more impact on development? This issue (dramatized by our Focus on Victor) once aroused intense debate. Theorists differed in the relative importance they gave to *nature* (heredity) and *nurture* (environmental influences both before and after birth).

heredity Inborn influences or traits inherited from biological parents

environment Totality of nonhereditary, or experiential, influences on development

Today, scientists in the field of behavioural genetics have found ways to measure more precisely the roles of heredity and environment in the development of specific traits within a population. When we look at a particular child, however, research with regard to almost all characteristics points to a blend of inheritance and experience. Thus, even though intelligence is strongly affected by heredity, environmental factors such as parental stimulation, education, and peer influence also influence it. Although there still is considerable dispute about the relative importance of nature and nurture, contemporary theorists and researchers are more interested in finding ways to explain how they work together.

Many typical changes of infancy and early childhood, such as the emergence of the abilities to walk and talk, are tied to **maturation** of the body and brain—the unfolding of a universal, natural sequence of physical changes and behaviour patterns, including readiness to master new abilities such as walking and talking. These maturational processes, which are seen most clearly in the early years, act in concert with the influences of heredity and environment. As children grow into adolescents and then into adults, individual differences in innate characteristics (heredity) and life experience (environment) play an increasing role as children adapt to the internal and external conditions in which they find themselves.

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

Even in maturational processes that all children undergo, rates and timing of development vary. Throughout this book, we talk about average ages for the occurrence of certain events, such as the first word, the first step, the first menstruation or "wet dream," and 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 child development, then, we need to look at the *inherited* characteristics that are unique to each child. We also need to consider the many *environmental,* or experiential, factors that affect children, especially such major contexts as family, neighbourhood, socio-economic status, ethnicity, and culture. We need to consider how heredity and environment interact; this will be discussed in Chapter 3. We need to understand which developments are primarily maturational and which are more subject to individual differences. We need to look at influences that affect many or most people 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 accentuate the impact of certain influences.

Contexts of Development

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

Family

The **nuclear family** is a two-generational kinship, economic, and household unit consisting of two parents and their natural or adopted children (Hareven, 1986). Today most families are urban; they have fewer children, and both parents work outside the home. Children spend much of their time in school or child care. Children of divorced parents live with one or the other parent or move back and forth between them. Households often include a stepparent and stepsiblings or a parent's live-in partner. There are increasing numbers of single and childless adults, unmarried parents, and gay and lesbian households (Hernandez, 1997, 2004; Teachman, Tedrow, & Crowder, 2000; Lipman, Offord, Dooley & Boyle, 2002).

In many societies, such as those of Asia and Latin America, the **extended family**—a multi-generational kinship network of grandparents, aunts, uncles, cousins, and more distant relatives—is the traditional family form. 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 centres (N. M. Brown, 1990; Gorman, 1993).

In Canada, it is not uncommon for extended families to be spread through all regions of the country, with family members moving for work or education. However, among many Canadian ethnic groups, particularly Aboriginal Canadians—including First Nations, Inuit, and Metis—the extended family is an integral part of children's experiences (Ward, 1998). Grandparents traditionally assumed a major role in raising children in Aboriginal communities, and despite the practices of the mainstream culture that undermined this strength of Aboriginal families (see Box 1-1), the traditional roles are beginning to return (Parler, 2001).

Recent immigrant families from Asia, Africa, the Caribbean, and Europe also involve the extended family in child rearing (Baker, 2001; Ochieng, 2003). Close extended family ties provide strong support systems, and extended-family households are common. Social roles tend to be flexible: Across many countries, adult immigrants often share breadwinning, and children are given responsibility for younger brothers and sisters (Harrison, Wilson, Pine, Chan, & Buriel, 1990; Levitt, Guacci-Franco, & Levitt, 1993; Walsh, Shulman, Bar-On, & Tsur, 2006). Often these households are headed by women (Stewart, Neufeld, Harrison, Spitzer, Hughes, & Makwrimba, 2006).

The role of the community in bringing up children is also significant among religious-based settlements, such as Mennonites in Manitoba and Ontario, and Hutterites in Alberta, who live apart from mainstream Canadian society (Ingoldsby & Smith, 2005; Dreidger, 2000; Peter, 1983).

Socio-economic Status and Neighbourhood

Socio-economic 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 and other **risk factors** (such as health and family

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

socio-economic 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

Box 1-1 *The Residential School Experience of Aboriginal Children*

The importance of looking at the life course in its social and historical context is exemplified by the experience of Aboriginal youth in Canada from the 1920s to the 1970s. Before that time, Aboriginal communities gave children the freedom to explore their environment and to develop independence, without the use of corporal punishment (Johnson & Cremo, 1995). Aboriginal languages and traditional spirituality and customs flourished. The established European majority saw the typical child-rearing practice of Aboriginal communities as permissive and neglectful. Drawing upon public opinion and an emphasis on assimilation to the majority culture, the federal government in the 1920s followed a policy of removing Aboriginal children from their families and placing them in government-sponsored residential schools (Sinclair, Phillips, & Bala, 1991) typically run by church missionaries (Miller, 1996). The era of residential schools, which ended in the 1970s, exacted a huge toll in human suffering of members of Aboriginal communities. The residential school authorities did not permit the children to use their home languages, and as a consequence of their experiences the children lost touch with their cultures and traditional ways (Grant, 1996). In some cases, evidence of physical, psychological, and sexual abuse along with human rights violations emerged. The impact of this experience on the cohort of Aboriginal youth from the early 1920s to the 1970s involved feelings of inferiority, apathy, unwillingness to work, confusion over values, and anti-religious attitudes (Grant, 1996). Today, the effects of the residential school era are beginning to be addressed. Part of this process involves recognizing the practice as a form of cultural genocide (Miller, 1996), and emphasizing healing, and renewing of language and cultural traditions for future generations of Aboriginal people by promoting distinct Aboriginal people's educational programs. Government initiatives in response to demands for justice and responsibility by Aboriginal organizations and people, like a Statement of Reconciliation, apologizing to the people who experienced abuse, an Aboribinal Healing Foundation for community-based healing projects, and a truth and reconciliation process as a form of restorative justice, are beginning to address past and present cultural loss. Aboriginal groups are emerging as a political force changing the social and cultural landscape through the Assembly of First Nations, Aboriginal educational institutions, and popular cultural outlets like the Aboriginal People's Television Network.

As the history of the residential school cohort of Aboriginal youth has emerged, their life experiences—as documented by interviews with former students and school and government officials, archival data, and photographs—give researchers a window into the processes of development and their links with socio-historical change. The longer-term effects of the residential school era are being documented particularly with children of survivors, and changes in the roles of elders and Aboriginal education.

Aboriginal children during residential school internment. The experience of growing up in a Church-run residential school shows how a government policy 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 **www.mcgrawhill.ca/olc/papalia.**

environment; 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 neighbourhoods children live in and the quality of nutrition, supervision, schooling, and other opportunities available to them. The National Longitudinal Survey of Children and Youth (NLSCY), begun in 1994, is tracking 35,000 children from all regions of Canada every two years from birth. Results from this survey have already shown that although coming from a disadvantaged neighbourhood is related to emotional and behaviour problems in childhood, the most powerful factor that predicts future behaviour problems is family socio-economic status (Boyle & Lipman, 1998; Willms, 2002; Yange, Leventhal, Brooks-Gunn & Earls, 2005). Poor children with emotional or behavioural problems suffer in their cognitive potential and school performance even more (Evans, 2004). The harm done by poverty may be indirect, through its impact on parents' emotional state, parenting practices, and on the home environment. 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.) In addition, living

Table 1-2	Higher Risk for Low-income Children
Outcome	**Low-income Children's Higher Risk Relative to More Affluent Children**
Mental Health	
Emotional Problems	1.3 times more likely
Behavioural Problems	1.3 times more likely
Family Environment	
Single Parent	5.5 times more likely
Ineffective Parenting	1.04 times more likely
Parental Depression	1.8 times more likely
Family Dysfunction	1.3 times more likely

Source: Adapted from Beiser, Hou, Hyman, & Tousignant, 2002, p. 222.

in more affluent and cohesive neighbourhoods is associated with higher levels of school readiness, and school performance (Boyle, Georgiades, Racine & Mustard, 2007; Brooks-Gunn, Britto, & Brady, 1998; Brooks-Gunn & Duncan, 1997; Duncan & Brooks-Gunn, 1997; Kohen, Hertzman, & Brooks-Gunn, 1998; McLoyd, 1998). However, children in more affluent families also may be at risk. Under pressure to achieve and often left on their own by busy parents, these children have high rates of substance abuse, anxiety, and depression (Luthar & Latendresse, 2005).

Often, children from low SES families that move to high SES neighbourhods show fewer behavioural and family problems, and less delinquency than those whose families stay in low SES neighbourhoods. However, older youth, between ages 16 and 18 years, who experience such neighbourhood transition, are more likely to show increased behavioural and family problems. This kind of pattern shows that the benefits of a neighbourhood change can sometimes be limited to specific periods of childhood (Fauth, Leventhal, & Brooks-Gunn, 2005).

SES limits a family's choice of where to live. Researchers have begun to study how the composition of a neighbourhood affects the way children turn out. So far, the most powerful factors seem to be average neighbourhood *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; Leventhal & Brooks-Gunn, 2003). Threats to children's well-being multiply if several risk factors—conditions that increase the likelihood of a negative outcome—coexist (Willms, 2002). Living in a poor neighbourhood 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; Willms, 2002). As well, living in persistent poverty is associated with larger risk of negative outcomes. Wide disparities in wealth are connected with the health of the population. With more inequity in income, population health tends to fare poorly in general. People with the lowest incomes typically have the poorest health outcomes, but this has an impact beyond the poorest members of a population (Leventhal & Brooks-Gunn, 2003). About one in eight Canadian children aged 12 years or younger experience a severe period of poverty (four or more consecutive years of family income below the poverty line) (Canadian Council on Social Development, 2001). Still, the resilience of such people as Supreme Court Justice Rosalie Abella, former Ontario Lieutenant-Governor Lincoln Alexander, the first black Member of Parliament, and Prime Ministers Jean Chretien and Brian Mulroney, who rose from humble backgrounds to high achievement, show that positive development can occur despite serious risk factors (Kim-Cohen, Moffitt, Caspi, & Taylor, 2004).

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 behaviour passed on from parents to children

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 behaviour passed on from parents to children. Culture is constantly changing, often through

contact with other cultures. After immigrant groups live in Canada for more than a genera-tion, some of their parenting practices shift from a pattern typically used in the country of origin to one more commonly used by parents in mainstream Canadian families.

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.

Canada has always been a nation of immigrants and ethnic groups. In 2002 alone, 229,121 new immigrants came to Canada, with Ontario attracting the largest number of im-migrants, over 50 percent. This was followed by Quebec and British Columbia, each attract-ing about 15 percent of the total immigrant population (Canadian Council on Social Development, 2007). The two founding groups, English and French, live alongside a third group of more recent immigrants who consist of many distinct ethnic groups—who come from all regions of the world. About 28 percent of the Canadian population identifies itself as having origins other than British, French, or Canadian, with visible minorities constitut-ing over 11 percent of the population (Health Canada, 1999). The majority of current im-migrants arriving in Canada are from Asia and Africa. Between 2002 and 2004 most immigrants were from Asia, despite a slight decline in recent years, from 62 percent in 2001 and 2002 to 57 percent in 2004. The number of Africans arriving in Canada as permanent residents has almost doubled since 1998, from 14,500 to 27,600 in 2004 (Statistics Canada, 2007). There is also diversity within ethnic groups. Québécois, Franco-Ontarians, Franco-Manitobans, and Acadians—all French Canadians—have different histories and cultures and socio-economic status. Similarly, African-Canadian descendants of immigrants from the United States differ from those of Caribbean ancestry. Asian-Canadians, too, come from a variety of countries with distinct cultures and linguistic groups. Aboriginal peoples constitute the original inhabitants of Canada and are made up of many linguistic and ethnic groups: First Nations, Inuit, and Metis populations represent a diverse group of about one million people in Canada. With 11 language groups and 58 dialects across 596 bands, living in 2,284 reserves, and in small and large urban centres, there is a large amount of cultural and linguistic diversity along with differences in values both between and within Aboriginal communities (Kirmayer, Brass, & Tait, 2000).

In large, multi-ethnic societies such as Canada, immigrant or minority groups *accul-turate,* 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 (Johnson et al., 2003). (Acculturation is not the same as cultural *assimilation,* in which the minority simply adopts the ways of the majority.) Children often grow up in neighbourhoods with other members of their own ethnic group, reinforcing shared cultural patterns. These cultural patterns may influence the composition of the household, its eco-nomic 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. Immi-grant children generally enjoy good health, exieriencing less frequent hospitalization than their non-immigrant counterparts, particularly for those living in low-SES circumstances (Flynn, McNeil, Maloff, Mutasingwa et al., 2006; Guttmann, Dick, & To, 2004; Wen et al., 1996), and this might be partly due to effective parenting practices by immigrant parents (Beiser, Hou, Hyman, & Tousignant, 2002). However, the effects of chronic poverty are universal.

According to the National Longitudinal Survey of Children and Youth (NLSCY), children of immigrant families do at least as well as, and in some cases better than, Canadian-born children in reading, writing, and mathematics achievement, particularly for parents whose first language is either English or French. Some children of immigrant parents do worse than children whose parents were born in Canada. However, as they gain years of experience in the school system, these children typically catch up or exceed their Canadian-born counterparts (Warswick, 2001).

The term *race,* historically and popularly viewed as an identifiable biological category, is now considered to be a social construct. There is no clear scientific consensus on its definition, and it is impossible to measure reliably (American Academy of Pediatrics Committee on Pediatric Research, 2000; Bonham, Warshauer-Baker, & Collins, 2005;

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

Helms, Jernigan, & Mascher, 2005; Lin & Kelsey, 2000; Smedley & Smedley, 2005; Sternberg, 2005). Human genetic variation occurs along a broad continuum, and 90 percent of such variation occurs *within* rather than among socially defined races (Bonham et al., 2005; Ossorio & Duster, 2005). Nevertheless, race as a social category remains a factor in research because it makes a difference in "how individuals are treated, where they live, their employment opportunities, the quality of their health care, and whether [they] can fully participate" in their society (Smedley & Smedley, 2005, p. 23).

Categories of culture, race, and ethnicity are fluid (Bonham et al., 2005; Sternberg, 2005), "continuously shaped and redefined by social and political forces" (Fisher et al., 2002, p. 1026). Geographic dispersion and intermarriage together with adaptation to varying local conditions have produced a great heterogeneity of physical and cultural characteristics within populations (Smedley & Smedley, 2005; Sternberg, 2005). Thus, a person such as the golf champion Tiger Woods, who has a black father and an Asian-American mother, may fall into more than one racial/ethnic category and may identify more strongly with one or another at different times (Hitlin, Brown, & Elder, 2006; Lin & Kelsey, 2000). A term such as *black* or *Hispanic* can be an **ethnic gloss**—an overgeneralization that obscures or blurs such variations (Parke, 2004; Trimble & Dickson, 2005).

ethnic gloss Overgeneralization about an ethnic or cultural group that blurs or obscures variations within the group or overlaps with other such groups

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 Regal Road study sample would have lived through the Great Depression and reached adulthood during the Second World War. What did it mean to be a child in these periods? To be an adolescent? To become an adult? The answers differ in important ways (Modell, 1989).

Children of European settlers at Confederation often worked from an early age, and networks of kinship with neighbours gave a secure social base where few social institutions existed (Parr, 1982). Children were often institutionalized until the family could use them as labour, or until a widowed father remarried. As Canada developed as an industrial nation in the late 1800s and early 1900s, a new perspective on child care emerged aiming to protect children's health, ensure access to quality education, and place victims of abuse and neglect into individual homes rather than large institutions (Sutherland, 2000). In Canada today, in a more culturally diverse country, children are brought up in ways that are substantially changed from those of past generations because of ideas, customs, and practices that evolved over the past 50 years (Sutherland, 2000). The perspective has progressed from children being regarded as family property during Canada's colonial period, to being viewed as dependent on the protection of the state during the first half of the twentieth century, to being recognized as having inherent rights after the Second World War, particularly with the 1982 Canadian Charter of Rights and Freedoms (Howe, 1995).

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

Checkpoint ✔

Can you . . .

✔ Explain why individual differences tend to increase with age?

✔ Give examples of the influences of family and neighbourhood composition, socio-economic status, culture, ethnicity, and historical context?

Normative and Non-normative 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.

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 North American and European industrial societies generally begin formal education around age 5 or 6; but in some developing countries, schooling begins much later, if at all.

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

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 living in Canada during the Great Depression. Depending on when and where they live, entire generations of children may feel the impact of wars, famines, or nuclear explosions. In North American and European 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 numbers of employed mothers, have greatly altered family life.

A **historical generation** is not the same as an *age cohort:* a group of people born at about the same time. A historical generation may contain more than one cohort, but not all cohorts are part of historical generations unless they experience major, shaping historical events at a formative point in their lives (Rogler, 2002).

Non-normative 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 non-normative 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

In a well-known study, Konrad Lorenz (1957), an Austrian zoologist, waddled, honked, and flapped his arms—and got newborn ducklings to follow him as they would the mother duck. Lorenz showed that newly hatched ducklings will instinctively follow the first moving object they see, whether or not it is a member of their own species. This phenomenon is called **imprinting,** and Lorenz believed that it is automatic and irreversible. Usually, this instinctive bond is with the mother; but if the natural course of events is disturbed, other attachments, like the one to Lorenz—or none at all—can form. Imprinting, said Lorenz, is the result of a *predisposition toward learning:* the readiness of an organism's nervous system to acquire certain information during a brief *critical period* in early life.

A **critical period** is a specific time when a given event, or its absence, has a specific impact on development. If a necessary event does not occur during a critical period of maturation, normal development will not occur; and the resulting abnormal patterns may be irreversible (Knudsen, 1999; Kuhl, Conboy, Padden, Nelson, & Pruitt, 2005). However, the length of a critical period is not absolutely fixed; if ducklings' rearing conditions are varied to slow their growth, the usual critical period for imprinting can be extended, and imprinting itself may even be reversed (Bruer, 2001).

Do human beings experience critical periods? One example occurs during gestation. If a woman receives X-rays, takes certain drugs, or contracts certain diseases at certain times during pregnancy, the fetus may show specific ill effects, depending on the nature of the "shock" and on its timing. Critical periods also occur early in childhood. 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 probably will not develop (Bushnell & Boudreau, 1993).

The concept of critical periods is controversial. Because many aspects of development, even in the physical domain, have been found to show **plasticity,** or modifiability of performance, it may be more useful to think about **sensitive periods,** when a child's development is especially responsive to certain kinds of experiences, but later experience continues to influence development (Bruer, 2001; Knudson, 1999; Kuhl et al., 2005). Box 1-2 discusses how the concepts of critical and sensitive periods apply to language development.

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

historical generation A group of people strongly influenced by a major historical event during their formative period

non-normative Characteristic of an unusual event that happens to a particular person, or a typical event that happens at an unusual time of life

imprinting Instinctive form of learning in which, during a critical period in early development, a young animal forms an attachment to the first moving object it sees, usually the mother

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

plasticity Modifiability, or "moulding," of the brain through experience

sensitive periods Times in development when a person is particularly open to certain kinds of experiences

Checkpoint ✔

Can you . . .

✔ Give examples of normative age-graded, normative history-graded, and non-normative influences? (Include some normative history-graded influences that affected different generations.)

✔ Explain the concept of "critical" periods and give examples?

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 12 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 U.S. 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) 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 became unable to manage Genie's challenging behaviour, welfare offices placed Genie into a series of poorly supervised foster homes, where 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, she cannot be considered a true test of the critical period (Curtiss, 1977).

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. Because of the brain's plasticity, some researchers consider the prepubertal years a *sensitive* rather than *critical* period for learning language (Newport, Bavelier, & Neville, 2001; Schumann, 1997). 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).

Other research has focused on a shorter critical period early in life. Sometime between 6 and 12 months, babies normally begin to "specialize" in perceiving the sounds of their native language and lose the ability to perceive sounds of other languages. In one study (Kuhl, Conboy, Padden, Nelson, & Pruitt, 2005; see Chapter 7), infants who, at 7 months, had already developed this specialized phonetic perception showed more advanced language abilities two years later than did 7-month-olds who were better able to discriminate *non*-native sounds. This research, these investigators suggest, may point to a critical period for phonetic perception: if infants do not begin to focus exclusively on the sounds of their native language during that period, their language development is slowed. This may explain why learning a second language in adulthood is not as easy as in early childhood (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 **www.mcgrawhill.ca/olc/papalia.**

An Emerging Consensus

As the study of children has matured, a 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 mould their environment and then respond to the environment they have helped create. Influence is *bi-directional:* When babies babble and coo, adults tend to talk to them, and babies then "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 Canada today is likely to have experiences very different from those of a child born in colonial Canada, 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 risks to healthy development, such as growing up in low-income families, can be overcome, particularly in the presence of protective factors such as a supportive family environment.

6. *Development in childhood is connected to development throughout the rest of life.* 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 . . .

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

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 as a field of scientific study focuses on processes of change and stability from conception through adolescence.

- 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 early 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.

  child development (4)   quantitative change (4) qualitative change (4)

The Study of Child Development: Basic Concepts

Guidepost 2 What aspects and periods of development do developmental scientists study?

- Developmental scientists study developmental change, both quantitative and qualitative, as well as stability of personality and behaviour.

- The three major domains, or aspects, of development that developmental scientists study 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.

  physical development (7)   cognitive development (7) psychosocial development (7)   social construction (7)

Influences on Development

Guidepost 3 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 neighbourhood environments and of nutrition, medical care, supervision, and schooling. The most powerful neighbourhood influences seem to be neighbourhood income and human capital. Multiple risk factors increase the likelihood of poor outcomes.

- Other important environmental influences stem from culture, ethnicity, and historical context. In large, multi-ethnic societies, immigrant groups often acculturate to the majority culture while preserving aspects of their own.

- Influences may be normative (age graded or history graded) or non-normative.

- There is strong evidence of critical or sensitive periods for certain types of early development.

**individual differences (9)   heredity (9)   environment (9)
maturation (9)   nuclear family (10)   extended family (10)
socio-economic status (SES) (10)   risk factors (10)   culture (12)
ethnic group (13)   ethnic gloss (14)   normative (14)
cohort (15)   historical generation (15)   non-normative (15)
imprinting (15)   critical period (15)   plasticity (15)
sensitive periods (15)**

An Emerging Consensus

Guidepost 4 What are six fundamental points about child development 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) the bi-directionality of influence, (4) the importance of history and culture, (5) children's potential for resilience, and (6) continuity of development throughout life.