



Gateway THEME

The principles of development help us better understand not only children, but our own behavior as well.

Human Development

3

It's a Girl!

With those words, Carol catches her first glimpse of Samantha, her tiny newborn baby. Frankly, at the moment Samantha looks something like a prune, with pudgy arms, stubby legs, and lots of wrinkles. Yet she looks so perfect—at least in her parents' eyes. As Carol and her husband, David, look at Samantha, they wonder: How will her life unfold? What kind of a person will she be? Will Samantha be a happy teenager? Will she marry, become a mother, find an interesting career? David and Carol can only hope that by the time Samantha is 83, she will have lived a full and satisfying life.

What if we could skip ahead through Samantha's life and observe her at various ages? What could we learn? Seeing the world through her eyes would be fascinating and instructive. For example, a child's viewpoint can make us more aware of things we take for granted. Younger children, in particular, are very literal in their use of language. When Samantha was 3 years old, she thought her bath was too hot and said to David, "Make it warmer, Daddy." At first, David was confused. The bath was already fairly hot. But then he realized that what she really meant was, "Bring the water closer to the temperature we call *warm*." It makes perfect sense if you look at it that way.

Research tells a fascinating story about human growth and development. Let's let Carol, David, and Samantha represent parents and children everywhere, as we see what psychology can tell us about the challenges of growing up, maturing, aging, and facing death. Tracing Samantha's development might even help you answer two very important questions: How did I become the person I am today? and Who will I become tomorrow?

Gateway QUESTIONS

- | | |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 3.1 <i>How do heredity and environment affect development?</i> | 3.8 <i>How do we develop morals and values?</i> |
| 3.2 <i>What can newborn babies do?</i> | 3.9 <i>What are the typical tasks and dilemmas through the life span?</i> |
| 3.3 <i>Of what significance is a child's emotional bond with adults?</i> | 3.10 <i>What is involved in well-being during middle and later adulthood?</i> |
| 3.4 <i>How important are parenting styles?</i> | 3.11 <i>How do people typically react to death?</i> |
| 3.5 <i>How do children acquire language?</i> | 3.12 <i>How do effective parents discipline and communicate with their children?</i> |
| 3.6 <i>How do children learn to think?</i> | |
| 3.7 <i>Why is the transition from adolescence to adulthood especially challenging?</i> | |

Nature and Nurture— It Takes Two to Tango

Gateway Question 3.1: *How do heredity and environment affect development?*

When we think of development, we naturally think of children “growing up” into adults. But even as adults, we never really stop changing. **Developmental psychology**, the study of progressive changes in behavior and abilities, involves every stage of life from conception to death (or “the womb to the tomb”). Heredity and environment also affect us throughout life. Some events, such as Samantha’s achieving sexual maturity, are governed mostly by heredity. Others, such as Samantha’s learning to swim, read, or drive a car, are matters primarily of environment.

But which is more important, heredity or environment? Actually, neither. Biopsychologist Donald Hebb once offered a useful analogy: To define the area of a rectangle, what is more important, height or width? Of course, both dimensions are absolutely essential. Without height *and* width, there is no rectangle. Similarly, if Samantha grows up to become a prominent civil rights lawyer, her success will be due to both heredity and environment.

Although heredity gives each of us a variety of potentials and limitations, these are, in turn, affected by environmental influences, such as learning, nutrition, disease, and culture. Ultimately, the person you are today reflects a continuous *interaction*, or interplay, between the forces of nature and nurture (Freberg, 2010). Let’s look in more detail at this dance.

Heredity

Heredity (“nature”) refers to the transmission of physical and psychological characteristics from parents to their children through genes. An incredible number of personal features are set at conception, when a sperm and an ovum (egg; plural, ova) unite.

How does heredity operate? The nucleus of every human cell contains **DNA**, or **deoxyribonucleic acid** (dee-OX-see-RYE-bo-new-KLEE-ik). DNA is a long, ladder-like chain of pairs of chemical molecules (● Figure 3.1). The order of these molecules, or



Identical twins. Twins who share identical genes (identical twins) demonstrate the powerful influence of heredity. Even when they are reared apart, identical twins are strikingly alike in motor skills, physical development, and appearance. At the same time, twins are less alike as adults than they were as children, which shows environmental influences are at work (Freberg, 2010; Larsson, Larsson, & Lichtenstein, 2004).

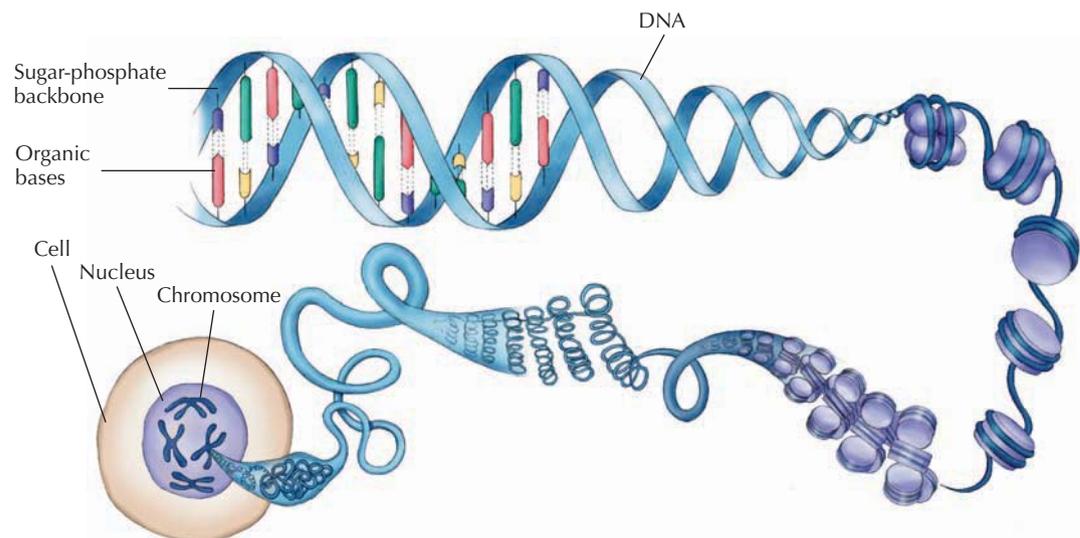
organic bases, acts as a code for genetic information. The DNA in each cell contains a record of all the instructions needed to make a human—with room left over to spare. In 2003, a major scientific milestone was reached when the Human Genome Project completed sequencing all 3 billion chemical base pairs in human DNA (U.S. Department of Energy Office of Science, 2008).

Human DNA is organized into 46 **chromosomes**. (The word *chromosome* means “colored body.”) These thread-like structures hold the coded instructions of heredity (● Figure 3.2). Notable exceptions are sperm cells and ova, which contain only 23 chromosomes. Thus, Samantha received 23 chromosomes from Carol and 23 from David. This is her genetic heritage.

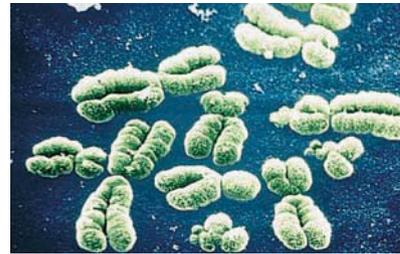
Genes are small segments of DNA that affect a particular process or personal characteristic. Sometimes, a single gene is responsible for an inherited feature, such as Samantha’s eye color. Genes may be dominant or recessive. When a gene is **dominant**, the feature it controls will appear every time the gene is present. When a gene is **recessive**, it must be paired with a second recessive gene before its effect will be expressed. For example, if Samantha got a blue-eye gene from David and a brown-eye gene from Carol,

● **Figure 3.1** (Top left) Linked molecules (organic bases) make up the “rungs” on DNA’s twisted “molecular ladder.” The order of these molecules serves as a code for genetic information. The code provides a genetic blueprint that is unique for each individual (except identical twins). The drawing shows only a small section of a DNA strand. (Bottom left) The nucleus of each cell in the body contains chromosomes made up of tightly wound coils of DNA. (Don’t be misled by the drawing: Chromosomes are microscopic, and the chemical molecules that make up DNA are even smaller.)

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● **Figure 3.2** This image, made with a scanning electron microscope, shows several pairs of human chromosomes. (Colors are artificial.)

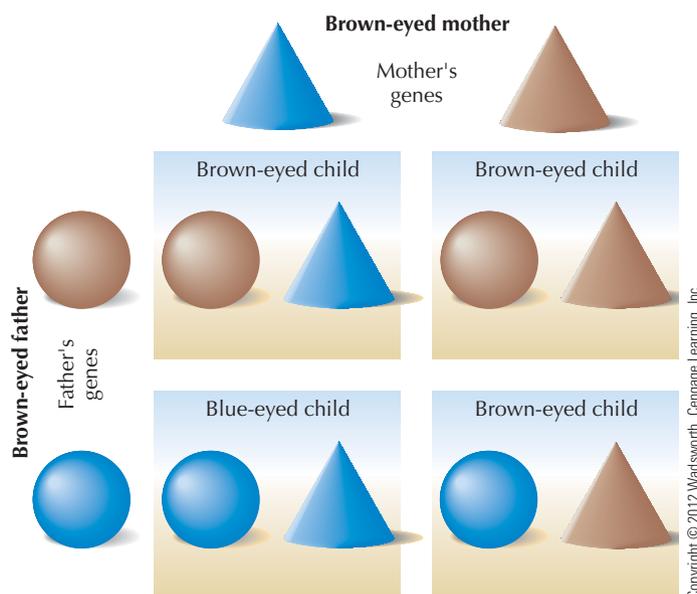


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Samantha will be brown-eyed, because brown-eye genes are dominant.

If brown-eye genes are dominant, why do two brown-eyed parents sometimes have a blue-eyed child? If one or both parents have two brown-eye genes, the couple's children can only be brown-eyed. But what if each parent has one brown-eye gene and one blue-eye gene? In that case, both parents would have brown eyes. Yet, there is one chance in four that their children will get two blue-eye genes and have blue eyes (● Figure 3.3).

In actuality, few of our characteristics are controlled by single genes. Instead, most are **polygenic** (pol-ih-JEN-ik), or controlled by many genes working in combination. So, for example, there is no one "tall" or "short" gene; in fact, almost *two hundred* genes have already been shown to play a role in determining height (Allen et al., 2010). Through the expression of genes, heredity determines eye color, skin color, and susceptibility to some diseases. Also, genes can switch on (or off) at certain ages or developmental stages. In this way, heredity continues to exert a powerful influence throughout **maturation**, the physical growth and development of the body, brain, and nervous system (Cummings, 2011). As the *human growth sequence* unfolds, genetic instructions influence body size and shape, height, intelligence, athletic potential, personality traits, sexual orientation, and a host of other details (see ■ Table 3.1).



● **Figure 3.3** Gene patterns for children of brown-eyed parents, where each parent has one brown-eye gene and one blue-eye gene. Since the brown-eye gene is dominant, on average 1 child in 4 will be blue-eyed. Thus, there is a chance that two brown-eyed parents will have a blue-eyed child.

■ **TABLE 3.1 Human Growth Sequence**

Period	Duration	Descriptive Name
Prenatal Period	From conception to birth.	Zygote
Germinal period	First 2 weeks after conception.	Embryo
Embryonic period	2–8 weeks after conception.	Fetus
Fetal period	From 8 weeks after conception to birth.	Neonate
Neonatal Period	From birth to a few weeks after birth.	Infant
Infancy	From a few weeks after birth until child is walking securely; some children walk securely at less than a year, while others may not be able to until age 17–18 months.	
Early Childhood	From about 15–18 months until about 2–2½ years.	Toddler
	From age 2–3 to about age 6.	Preschooler
Middle Childhood	From about age 6 to age 12.	School-age child
Pubescence	Period of about 2 years before puberty.	Adolescent
Puberty	Point of development at which biological changes of pubescence reach a climax marked by sexual maturity.	
Adolescence	From the beginning of pubescence until full social maturity is reached (difficult to fix duration of this period).	
Adulthood	From young adulthood to death; sometimes subdivided into other periods as shown at left.	Adult
Young adulthood (20–34)		
Middle adulthood (35–64)		
Late adulthood (65 plus)		

*Note: There is no exact beginning or ending point for various growth periods. The ages are approximate, and each period may be thought of as blending into the next.

Table courtesy of Tom Bond.

- Developmental psychology** The study of progressive changes in behavior and abilities from conception to death.
- Heredity ("nature")** The transmission of physical and psychological characteristics from parents to offspring through genes.
- DNA (deoxyribonucleic acid)** A molecular structure that contains coded genetic information.
- Chromosomes** Thread-like "colored bodies" in the nucleus of each cell that are made up of DNA.
- Genes** Specific areas on a strand of DNA that carry hereditary information.
- Dominant gene** A gene whose influence will be expressed each time the gene is present.
- Recessive gene** A gene whose influence will be expressed only when it is paired with a second recessive gene.
- Polygenic characteristics** Personal traits or physical properties that are influenced by many genes working in combination.
- Maturation** The physical growth and development of the body, brain, and nervous system.

Readiness

At what ages will Samantha be ready to feed herself, to walk alone, or to say goodbye to diapers? Such milestones tend to be governed by a child's **readiness** for rapid learning. That is, minimum levels of maturation must occur before some skills can be learned. Parents are asking for failure when they try to force a child to learn skills too early or too late (Joinson et al., 2009; Schum et al., 2002).

It is more difficult, for instance, to teach children to use a toilet before they have matured enough to control their bodies. Current guidelines suggest that toilet training goes most smoothly when it begins between 18 and 24 months of age. Consider the overeager parents who toilet trained a 14-month-old child in 12 trying weeks of false alarms and "accidents." If they had waited until the child was 20 months old, they might have succeeded in just 3 weeks. Parents may control when toilet training starts, but maturation tends to dictate when it will be completed (Schum et al., 2002). On the other hand, parents who delay the onset of toilet training may fare no better. The older a child is before toilet training begins, the more likely he or she is to fail to develop full bladder control and become a daytime "wetter" (Joinson et al., 2009). So why fight nature?

Environment

Our environment also exerts a profound influence on our development. **Environment** ("nurture") refers to the sum of all external conditions that affect a person. For example, the brain of a newborn baby has fewer *dendrites* (nerve cell branches) and *synapses* (connections between nerve cells) than an adult brain (● Figure 3.4). However, the newborn brain is highly *plastic* (capable of being altered by experience). During the first 3 years of life, millions of new connections form in the brain every day. At the same time, unused connections disappear. As a result, early learning environments literally shape the developing brain, through "blooming and pruning" of synapses (Nelson, 1999).

Although human culture is accelerating the rate at which human DNA is evolving, modern humans are still genetically quite similar

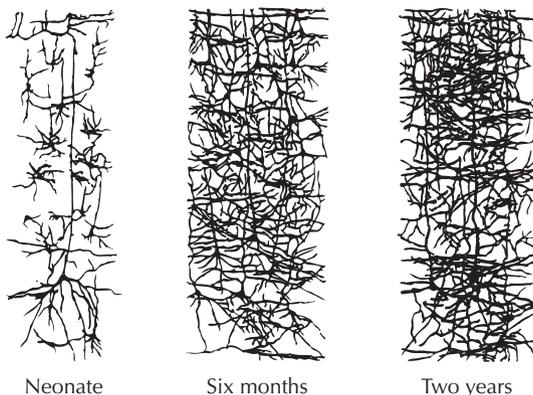
to cave dwellers who lived 30,000 years ago (Cochran & Harpending, 2009; Hawks et al., 2007). Nevertheless, a bright baby born today could learn to become almost anything—a ballet dancer, an engineer, a gangsta rapper, a skydiver, or a biochemist who likes to paint in watercolors. But, with few exceptions, an Upper Paleolithic baby could have become only a hunter or food gatherer.

Prenatal Influences

Environmental factors actually start influencing development before birth. Although the *intrauterine* environment (interior of the womb) is highly protected, environmental conditions can nevertheless affect the developing child. For example, when Carol was pregnant, Samantha's fetal heart rate and movements increased when loud sounds or vibrations penetrated the womb (Kisilevsky et al., 2004).

Had Carol experienced excess stress during her pregnancy, Samantha might have been a smaller, weaker baby at birth (Schetter, 2011). If Carol's health or nutrition had been poor or if she had had German measles, syphilis, or HIV, had used drugs, or had been exposed to X-rays or radiation, Samantha's growth sequence might have also have been harmed. In such cases, babies can suffer from **congenital problems**, or "birth defects." These environmental problems affect the developing fetus and become apparent at birth. In contrast, **genetic disorders** are inherited from parents. Examples are sickle-cell anemia, hemophilia, cystic fibrosis, muscular dystrophy, albinism, and some types of mental retardation.

How is it possible for the embryo or the fetus to be harmed? No direct intermixing of blood takes place between a mother and her unborn child. Yet some substances—especially drugs—do reach the fetus. Anything capable of disturbing normal development in the womb is called a **teratogen** (teh-RAT-uh-jen). Sometimes women are exposed to powerful teratogens, such as radiation, lead, pesticides, or polychlorinated biphenyls (PCBs), without knowing it. But pregnant women do have direct control over many teratogens. For example, a woman who takes cocaine runs a serious risk of injuring her fetus (Schuetze & Eiden, 2006). In short, when a pregnant woman takes drugs, her unborn child does too.

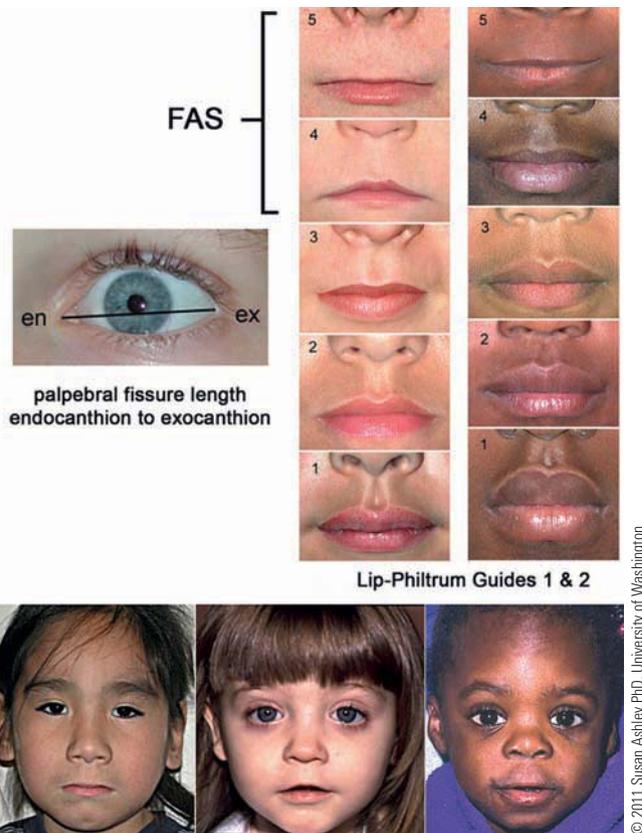


● **Figure 3.4** A rapid increase in brain synapses continues until about age 4. At that point, children actually have more brain synapses than adults do. Then, after age 10, the number slowly declines, reaching adult levels at about age 16. (Reprinted by permission of the publisher from *The Postnatal Development of the Human Cerebral Cortex, Vols. I–VIII* by Jesse LeRoy Conel, Cambridge, MA: Harvard University Press, Copyright © 1939, 1941, 1947, 1951, 1955, 1959, 1963, 1967 by the President and Fellows of Harvard College. Copyright renewed 1967, 1969, 1975, 1979, 1983, 1987, 1991.)



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An 11-week-old fetus. Because of the rapid growth of basic structures, the developing fetus is sensitive to a variety of diseases, drugs, and sources of radiation. This is especially true during the first trimester (3 months) of gestation (pregnancy).



Children of different ethnicities all show typical features of children suffering from fetal alcohol syndrome, including a small non-symmetrical head, a short nose, a flattened area between the eyes, oddly shaped eyes, and a thin upper lip. Many of these features become less noticeable by adolescence. However, mental retardation and other problems commonly follow the FAS child into adulthood.

Unfortunately, in the United States, drugs are one of the greatest risk factors facing unborn children (Coles & Black, 2006; Keegan et al., 2010). In fact, repeated heavy drinking during pregnancy is the most common cause of birth defects in the United States (Liles & Packman, 2009). Affected infants have *fetal alcohol syndrome (FAS)*, including low birth weight, a small head, bodily defects, and facial malformations. Many also suffer from emotional, behavioral, and mental handicaps (Golden, 2005).

If a mother is addicted to morphine, heroin, or methadone, her baby may be born with an addiction. Tobacco is also harmful. Smoking during pregnancy greatly reduces oxygen to the fetus. Heavy smokers risk miscarrying or having premature, underweight babies who are more likely to die soon after birth. Children of smoking mothers score lower on tests of language and mental ability (Huijbregts et al., 2006). In other words, an unborn child's future can go "up in smoke." That goes for smoking marijuana as well (Viveros et al., 2005).

Sensitive Periods

Early experiences can have particularly lasting effects. For example, children who are abused may suffer lifelong emotional problems (Goodwin, Fergusson, & Horwood, 2005). At the same time, extra care can sometimes reverse the effects of a poor start in life (Born-

stein & Tamis-LeMonda, 2001). In short, environmental forces guide human development, for better or worse, throughout life.

Why do some experiences have more lasting effects than others? Part of the answer lies in **sensitive periods**. These are times when children are more susceptible to particular types of environmental influences. Events that occur during a sensitive period can permanently alter the course of development (Michel & Tyler, 2005). For example, forming a loving bond with a caregiver early in life seems to be crucial for optimal development. Likewise, babies who don't hear normal speech during their first year may have impaired language abilities (Thompson & Nelson, 2001).

Deprivation and Enrichment

Some environments can be described as *deprived* or *enriched*. **Deprivation** refers to a lack of normal nutrition, stimulation, comfort, or love. **Enrichment** exists when an environment is deliberately made more stimulating, loving, and so forth.

What happens when children suffer severe deprivation? Tragically, a few mistreated children have spent their first years in closets, attics, and other restricted environments. When first discovered, these children are usually mute, retarded, and emotionally damaged (Wilson, 2003). Fortunately, such extreme deprivation is unusual.

BRIDGES

Adults experience a number of disruptive effects when they are deprived of sensory stimulation. See Chapter 6, pages 183–184, for details.

Nevertheless, milder perceptual, intellectual, or emotional deprivation occurs in many families, especially those that must cope with poverty (Matthews & Gallo, 2011). Poverty can affect the development of children in at least two ways (Huston & Bentley, 2010; Sobolewski & Amato, 2005). First, poor parents may not be able to give their children needed resources such as nutritious meals, health care, or learning materials. As a result, impoverished children tend to be sick more often, their mental development lags, and they do poorly at school. Second, the stresses of poverty can also be hard on parents, leading to marriage problems, less positive parenting, and poorer parent-child relationships. The resulting emotional turmoil can damage a child's socioemotional develop-

Readiness A condition that exists when maturation has advanced enough to allow the rapid acquisition of a particular skill.

Environment ("nurture") The sum of all external conditions affecting development, including especially the effects of learning.

Congenital problems Problems or defects that originate during prenatal development in the womb.

Genetic disorders Problems caused by defects in the genes or by inherited characteristics.

Teratogen Anything capable of altering fetal development in noninheritable ways that cause birth defects.

Sensitive period During development, a period of increased sensitivity to environmental influences; also, a time during which certain events must take place for normal development to occur.

Deprivation In development, the loss or withholding of normal stimulation, nutrition, comfort, love, and so forth; a condition of lacking.

Enrichment In development, deliberately making an environment more stimulating, nutritional, comforting, loving, and so forth.

ment. In the extreme, it may increase the risk of mental illness and delinquent behavior.

Adults who grew up in poverty often remain trapped in a vicious cycle of continued poverty. Because over 40,000,000 Americans fell below the poverty line in 2009, this grim reality plays itself out in millions of American homes every day (U.S. Census Bureau, 2010).

Can an improved environment enhance development? To answer this question, psychologists have created *enriched environments* that are especially novel, complex, and stimulating. Enriched environments may be the “soil” from which brighter children grow. To illustrate, let’s consider the effects of raising rats in a sort of “rat wonderland.” The walls of their cages were decorated with colorful patterns, and each cage was filled with platforms, ladders, and cubbyholes. As adults, these rats were superior at learning mazes. In addition, they had larger, heavier brains, with a thicker cortex (Benloucif, Bennett, & Rosenzweig, 1995). Of course, it’s a long leap from rats to people, but an actual increase in brain size is impressive. If extra stimulation can enhance the “intelligence” of a lowly rat, it’s likely that human infants also benefit from enrichment. Many studies have shown that enriched environments

improve abilities or enhance development (Phillips & Lowenstein, 2011). It would be wise for David and Carol to make a point of nourishing Samantha’s mind, as well as her body (Beeber et al., 2007).

What can parents do to enrich a child’s environment? They can encourage exploration and stimulating play by paying attention to what holds the baby’s interest. It is better to “child-proof” a house than to strictly limit what a child can touch. There is also value in actively enriching sensory experiences. Infants are not vegetables. Babies should be surrounded by colors, music, people, and things to see, taste, smell, and touch. It makes perfect sense to take them outside, to hang mobiles over their cribs, to place mirrors nearby, to play music for them, or to rearrange their rooms now and then. Children progress most rapidly when they have responsive parents and stimulating play materials at home (Beeber et al., 2007). In light of this, it is wise to view all of childhood as a *relatively sensitive period* (Nelson, 1999).

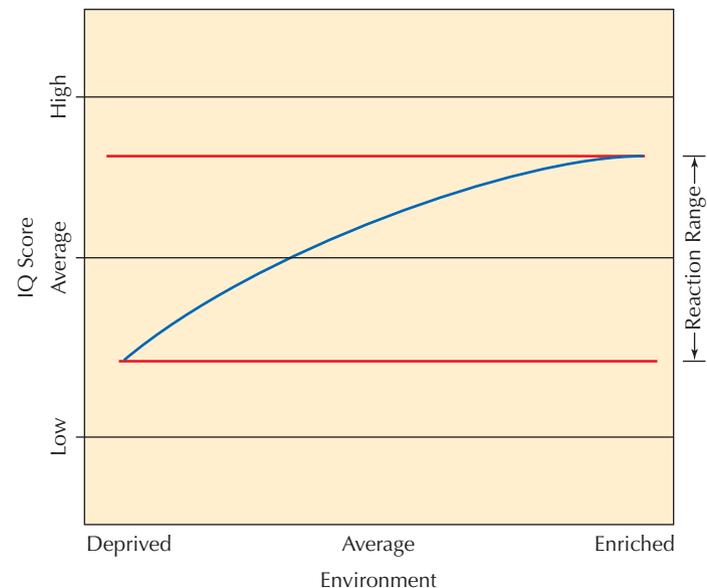
Reaction Range

One way to visualize the interplay of heredity and environment is through the concept of **reaction range**, the limits that one’s environment places on the effects of heredity (● Figure 3.5). Let’s suppose that Samantha was born with genes for a normal level of intelligence. If Samantha grows up in a deprived environment, she might well end up with lower than average adult intelligence. If Carol and David provide her with an enriched environment, she



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Children who grow up in poverty run a high risk of experiencing many forms of deprivation. There is evidence that lasting damage to social, emotional, and cognitive development occurs when children must cope with severe early deprivation.



● **Figure 3.5** The effect of heredity on the development of human traits, such as intelligence, can often be influenced by environmental circumstances. A child with average genes for intelligence growing up in an average environment might have an average IQ score as an adult. However, growing up in a deprived environment might result in a somewhat lower IQ score and growing up in an enriched environment might result in a somewhat higher IQ score. In this way, the environment sets a range within which our hereditary potential is actually expressed. This range is called the *reaction range*. Copyright © 2012 Wadsworth, Cengage Learning, Inc.

will probably have normal, or even above normal, intelligence. Even though Samantha might not be genetically capable of becoming a child prodigy, the environment her parents provide for her will also determine her developmental path.

The Whole Person

Nurture often affects the expression of hereditary tendencies through ongoing reciprocal influences. A good example of such influences is the fact that growing infants influence their parents' behavior at the same time they are changed by it.

Newborn babies differ noticeably in **temperament**. This is the inherited, physical core of personality. It includes sensitivity, irritability, distractibility, and typical mood (Kagan, 2004). About 40 percent of all newborns are *easy children* who are relaxed and agreeable. Ten percent are *difficult children* who are moody, intense, and easily angered. *Slow-to-warm-up children* (about 15 percent) are restrained, unexpressive, or shy. The remaining children do not fit neatly into a single category (Chess & Thomas, 1986).

Because of differences in temperament, some babies are more likely than others to smile, cry, vocalize, reach out, or pay attention. As a result, babies rapidly become active participants in their own development. For example, Samantha is an easy baby who smiles frequently and is easily fed. This encourages Carol to touch, feed, and sing to Samantha. Carol's affection rewards Samantha, causing her to smile more. Soon, a dynamic relationship blossoms between mother and child. Similarly, good parenting can reciprocally influence a very shy child who, in turn, becomes progressively less shy.

The reverse also occurs: Difficult children may make parents unhappy and elicit more negative parenting (Parke, 2004). Alternately, negative parenting can turn a moderately shy child into a very shy one. This suggests that inherited temperaments are dynamically modified by learning (Bridgett et al., 2009; Kagan, 2005).

A person's **developmental level** is his or her current state of physical, emotional, and intellectual development. To summarize, three factors combine to determine your developmental level at any stage of life. These are *heredity*, *environment*, and your *own behavior*, each tightly interwoven with the others.

Knowledge Builder

The Interplay of Heredity and Environment

RECITE

1. Areas of the DNA molecule called genes are made up of dominant and recessive chromosomes. T or F?
2. Most inherited characteristics can be described as polygenic. T or F?
3. If one parent has one dominant brown-eye gene and one recessive blue-eye gene and the other parent has two dominant brown-eye genes, what is the chance that their child will have blue eyes?
a. 25 percent b. 50 percent c. 0 percent d. 75 percent
4. The orderly sequence observed in the unfolding of many basic responses can be attributed to _____.

5. A _____ is a time of increased sensitivity to environmental influences.
6. "Slow-to-warm-up" children can be described as restrained, unexpressive, or shy. T or F?
7. As a child develops, there is a continuous _____ between the forces of heredity and environment.

REFLECT

Think Critically

8. Environmental influences can interact with genetic programming in an exceedingly direct way. Can you guess what it is?

Self-Reflect

Can you think of clear examples of some ways in which heredity and environmental forces have combined to affect your development?

How would maturation affect the chances of teaching an infant to eat with a spoon?

What kind of temperament did you have as an infant? How did it affect your relationship with your parents or caregivers?

Answers: 1. F 2. T 3. c 4. maturation 5. sensitive period 6. T 7. interaction or interplay 8. Environmental conditions sometimes turn specific genes on or off, thus directly affecting the expression of genetic tendencies (Keller, 2010; Lickliter & Honeycutt, 2010).

The Newborn—More Than Meets the Eye

Gateway Question 3.2: What can newborn babies do?

At birth, the human *neonate* (NEE-oh-NATE; newborn infant) will die if not cared for by adults. Newborn babies cannot lift their heads, turn over, or feed themselves. Does this mean they are inert and unfeeling? Definitely not! Contrary to common belief, newborn babies are not oblivious to their surroundings. Infants have physical and mental capacities that continue to surprise researchers and delight parents. The emergence of many of these capacities is closely related to maturation of the brain, nervous system, and body. Likewise, a baby's early emotional life unfolds on a timetable that is largely controlled by maturation.

Neonates like Samantha can see, hear, smell, taste, and respond to pain and touch. Although their senses are less acute, babies are very responsive. Samantha will follow a moving object with her eyes and will turn in the direction of sounds.

Samantha also has a number of adaptive infant reflexes (Siegler, DeLoache, & Eisenberg, 2011). To elicit the *grasping reflex*, press an object in a neonate's palm and she will grasp it with surprising strength. Many infants, in fact, can hang from a raised bar, like little trapeze artists. The grasping reflex aids survival by helping infants to avoid falling. You can observe the *rooting reflex* (reflexive head turn-

Reaction range The limits environment places on the effects of heredity.
Temperament The physical core of personality, including emotional and perceptual sensitivity, energy levels, typical mood, and so forth.
Developmental level An individual's current state of physical, emotional, and intellectual development.



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Newborn babies display a special interest in the human face. A preference for seeing their mother's face develops rapidly and encourages social interactions between mother and baby.

ing and nursing) by touching Samantha's cheek. Immediately, she will turn toward your finger, as if searching for something.

How is such turning adaptive? The rooting reflex helps infants find a bottle or a breast. Then, when a nipple touches the infant's

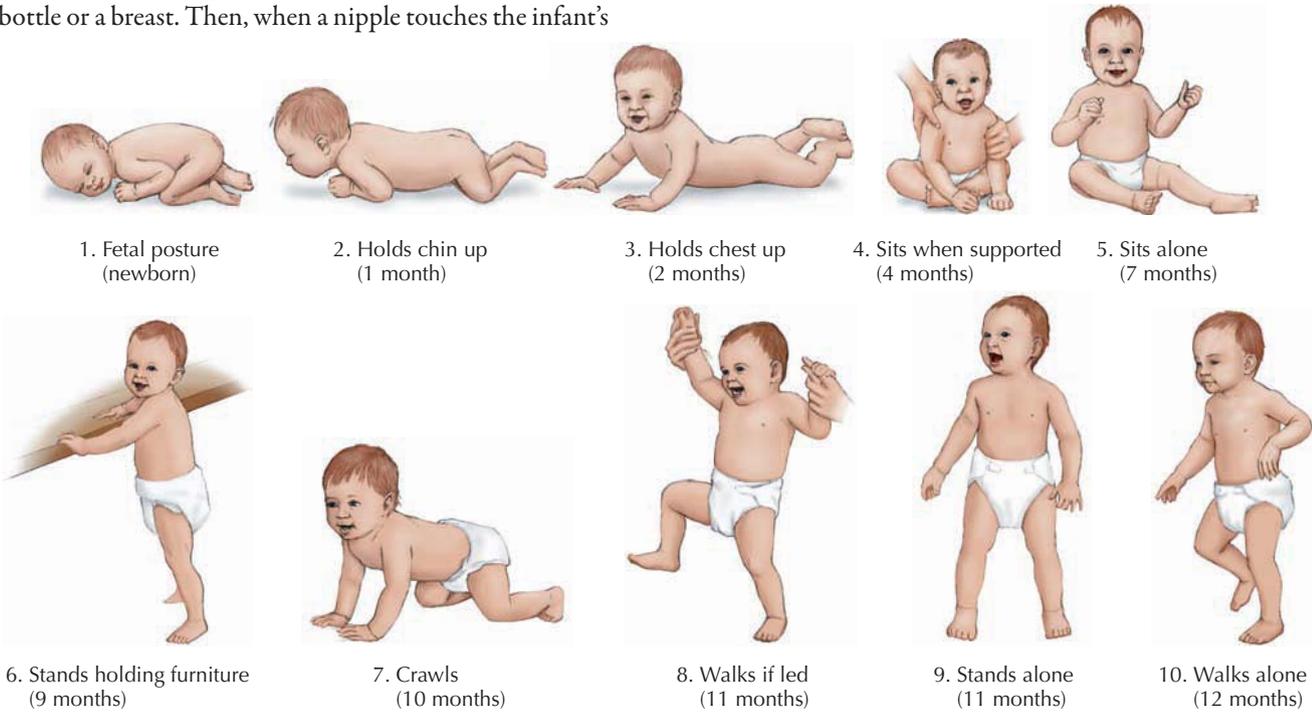
mouth, the *sucking reflex* (rhythmic nursing) helps her obtain needed food. Like other reflexes, this is a genetically programmed action. At the same time, food rewards nursing. Because of this, babies quickly learn to nurse more actively. Again, we see how the interplay of nature and nurture alters a baby's behavior.

The *Moro reflex* is also interesting. If Samantha's position is changed abruptly or if she is startled by a loud noise, she will make a hugging motion. This reaction has been compared to the movements baby monkeys use to cling to their mothers. (We leave it to the reader's imagination to decide if there is any connection.)

Motor Development

As we just noted, the emergence of many basic abilities is closely tied to *maturation*, which will be evident, for example, as Samantha learns motor skills, such as crawling and walking. Of course, the *rate* of maturation varies from child to child. Nevertheless, the *order* of maturation is almost universal. For instance, Samantha will be able to sit without support from David before she has matured enough to crawl. Indeed, infants around the world typically sit before they crawl, crawl before they stand, and stand before they walk (● Figure 3.6).

What about my weird cousin Na'vi who never crawled? Like cousin Na'vi, a few children substitute rolling, creeping, or shuffling for crawling. A very few move directly from sitting to standing and walking. Even so, their motor development is orderly. In general, muscular control spreads in a pattern that is *cephalocaudal* (SEF-eh-lo-KOD-ul; from head to toe) and *proximodistal* (PROK-seh-moe-DIS-tul; from the center of the body to the extremities).



● **Figure 3.6** Motor development. Most infants follow an orderly pattern of motor development. Although the order in which children progress is similar, there are large individual differences in the ages at which each ability appears. The ages listed are averages for American children. It is not unusual for many of the skills to appear 1 or 2 months earlier than average or several months later (Piek, 2006). Parents should not be alarmed if a child's behavior differs some from the average. Copyright © 2012 Wadsworth, Cengage Learning, Inc.



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● **Figure 3.7** Psychologist Carolyn Rovee-Collier has shown that babies as young as 3 months old can learn to control their movements. In her experiments, babies lie on their backs under a colorful crib mobile. A ribbon is tied around the baby's ankle and connected to the mobile. Whenever babies spontaneously kick their legs, the mobile jiggles and rattles. Within a few minutes, infants learn to kick faster. Their reward for kicking is a chance to see the mobile move (Hayne & Rovee-Collier, 1995).

Even if cousin Na'vi flunked Elementary Crawling, his motor development followed the standard top-down, center-outward pattern (Piek, 2006).

Although maturation has a big impact, motor skills don't simply "emerge." Samantha must learn to control her actions. When babies are beginning to crawl or walk, they actively try new movements and select those that work. Samantha's first efforts may be flawed—a wobbly crawl or some shaky first steps. However, with practice, babies "tune" their movements to be smoother and more effective. Such learning is evident from the very first months of life (Piek, 2006; see ● Figure 3.7).

Perceptual and Cognitive Development

Thirty years ago, many people thought of newborn babies as mere bundles of reflexes, like the ones previously described. But infants are capable of much more. For example, psychologist Andrew Meltzoff has found that babies are born mimics.

● Figure 3.8 shows Meltzoff as he sticks out his tongue, opens his mouth, and purses his lips at a 20-day-old girl. Will she imitate him? Videotapes of babies confirm that they imitate adult facial gestures while they can see them. As early as 9 months of age, infants can now remember and imitate actions a day after seeing them (Heimann & Meltzoff, 1996; Meltzoff, 2005). Such mimicry obviously aids rapid learning in infancy.

How intelligent are neonates? Babies are smarter than many people think. From the earliest days of life, babies are learning how the world works. They immediately begin to look, touch, taste, and otherwise explore their surroundings. From an evolutionary perspective, a baby's mind is designed to soak up information, which it does at an amazing pace (Meltzoff & Prinz, 2002).

In the first months of life, babies are increasingly able to think, to learn from what they see, to make predictions, and to search for explanations. For example, Jerome Bruner (1983) observed that 3- to 8-week-old babies seem to understand that a person's voice and body should be connected. If a baby hears his mother's voice coming from where she is standing, the baby will remain calm. If her voice comes from a loudspeaker several feet away, the baby will become agitated and begin to cry.

Another look into the private world of infants can be drawn from testing their vision. However, such testing is a challenge because infants cannot talk. Robert Fantz invented a device called a *looking chamber* to find out what infants can see and what holds their attention (● Figure 3.9a). Imagine that Samantha is placed on her back inside the chamber, facing a lighted area above. Next, two objects are placed in the chamber. By observing the movements of Samantha's eyes and the images they reflect, we can tell what she is looking at. Such tests show that adult vision is about 30 times sharper, but babies can see large patterns, shapes, and edges.

Fantz found that 3-day-old babies prefer complex patterns, such as checkerboards and bull's-eyes, to simpler colored rectangles. Other researchers have learned that infants are excited by circles, curves, and bright lights (● Figure 3.9b) (Brown, 1990). When Samantha is 6 months old, she will be able to recognize categories of objects that differ in shape or color. By 9 months of age, she will



● **Figure 3.8** Infant imitation. In the top row of photos, Andrew Meltzoff makes facial gestures at an infant. The bottom row records the infant's responses. Videotapes of Meltzoff and of tested infants helped ensure objectivity. (Photos courtesy of Andrew N. Meltzoff.)

be able to tell the difference between dogs and birds or other groups of animals (Mandler & McDonough, 1998). By 1 year of age, she will see as well as her parents (Sigelman & Rider, 2009). So, there really is a person inside that little body!

Neonates can most clearly see objects about a foot away from them. It is as if they are best prepared to see the people who love and care for them (Gopnik, Meltzoff, & Kuhl, 2000). Perhaps that's why babies have a special fascination with human faces. Just *hours* after they are born, babies begin to prefer seeing their mother's face rather than a stranger's (Walton, Bower, & Bower, 1992). When babies are only 2 to 5 days old, they will pay more attention to a person who is gazing directly at them rather than one who is looking away (Farroni et al., 2004) (● Figure 3.9c).

In a looking chamber, most infants will spend more time looking at a human face pattern than a scrambled face or a colored oval (● Figure 3.9d). When real human faces are used, infants prefer familiar faces to unfamiliar faces. However, this reverses at about age 2. At that time, unusual objects begin to interest the child. For instance, in one classic study, Jerome Kagan (1971) showed face masks to 2-year-olds. Kagan found that the toddlers were fascinated by a face with eyes on the chin and a nose in the middle of the forehead. He believes the babies' interest came from a need to understand why the scrambled face differed from what they had come to expect. Such behavior is further evidence that babies actively try to make sense of their surroundings (Gopnik, Meltzoff, & Kuhl, 2000).

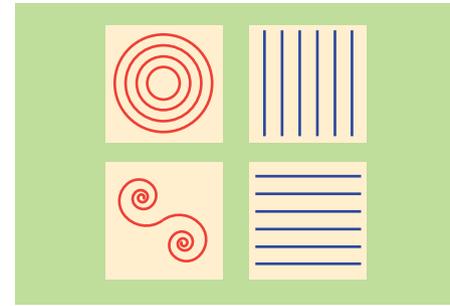
Emotional Development

Although experts do not yet agree on exactly how quickly emotions unfold (Oster, 2005), early emotional development also follows a pattern closely tied to maturation (Panksepp & Pasqualini, 2005). Even the basic emotions of *anger*, *fear*, and *joy*—which appear to be unlearned—take time to develop. General *excitement* is the only emotion newborn infants clearly express. However, as David and Carol can tell you, a baby's emotional life blossoms rapidly. One researcher (Bridges, 1932) observed that all the basic human emotions appear before age 2. Bridges found that emotions appear in a consistent order and that the first basic split is between pleasant and unpleasant emotions (● Figure 3.10).

Psychologist Carroll Izard thinks that infants can express several basic emotions as early as 10 weeks of age. When Izard looks carefully at the faces of babies, he sees abundant signs of emotion



(a)



(b)

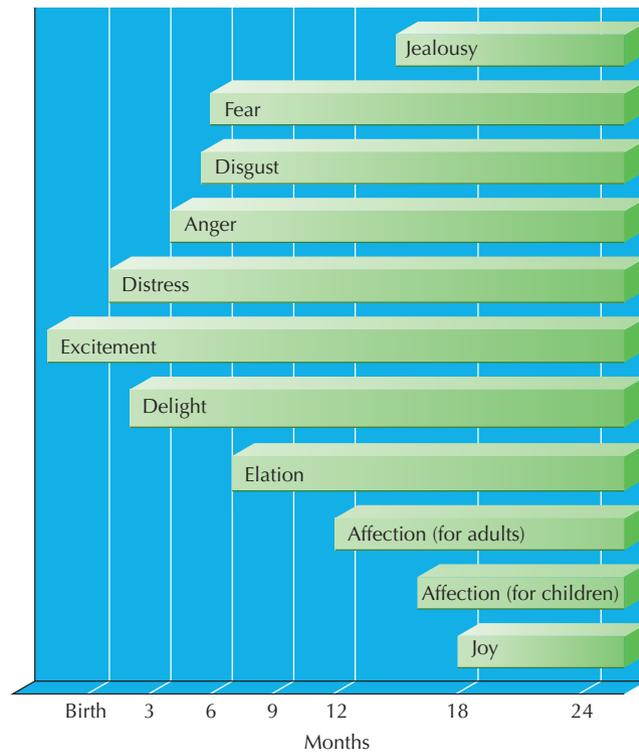


(c)



(d)

● **Figure 3.9** (a) Eye movements and fixation points of infants are observed in Fantz's "looking chamber." (b) Thirteen-week-old infants prefer concentric and curved patterns like those on the left to nonconcentric and straight-line patterns like those on the right. (c) When they are just days old, infants pay more attention to the faces of people who are gazing directly at them. (d) Infants look at the normal face longer than at the scrambled face and at both faces longer than at the design on the right. (Photo a courtesy of David Linton. Drawing by Alex Semenoick from "The Origin of Form Perception" by Robert L. Fantz, Copyright © 1961 by Scientific American, Inc. All rights reserved.)



● **Figure 3.10** The traditional view of infancy holds that newborns are initially able to show only general excitement but rapidly become able to express a variety of emotions. (K. M. B. Bridges, 1932. Reprinted by permission of the Society for Research in Child Development, Inc.)



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● **Figure 3.11** Infants display many of the same emotional expressions as adults do. Carroll Izard believes such expressions show that distinct emotions appear within the first months of life. Other theorists argue that specific emotions come into focus more gradually, as an infant’s nervous system matures. Either way, parents can expect to see a full range of basic emotions by the end of a baby’s first year.

(see ● Figure 3.11). The most common infant expression, he found, is not excitement, but *interest*—followed by *joy*, *anger*, and *sadness* (Izard et al., 1995).

If Izard is right, then emotions are “hardwired” by heredity and related to evolution. Perhaps that’s why smiling is one of a baby’s most common reactions. Smiling probably helps babies survive by inviting parents to care for them (Izard et al., 1995).

At first, a baby’s smiling is haphazard. By the age of 8 to 12 months, however, infants smile more frequently when another person is nearby (Jones & Hong, 2001). This **social smile** is especially rewarding to parents. Infants can even use their social smile to communicate interest in an object, like the time Samantha smiled when her mother held up her favorite teddy bear (Venezia et al., 2004). On the other hand, when new parents see and hear a crying baby, they feel annoyed, irritated, disturbed, or unhappy. Babies the world over, it seems, rapidly become capable of letting others know what they like and dislike. (Prove this to yourself sometime by driving a baby buggy.)

With dazzling speed, human infants are transformed from helpless babies to independent persons. By her third year, Samantha will have a unique personality, and she will be able to stand, walk, talk, and explore. At no other time after birth does development proceed more rapidly. During the same period, Samantha’s relationships with other people will expand as well. Before we explore that topic, here’s a chance to review what you’ve learned.

Knowledge Builder

The Neonate and Early Maturation

RECITE

1. If an infant is startled, he or she will make movements similar to an embrace. This is known as the
 - a. grasping reflex
 - b. rooting reflex
 - c. Moro reflex
 - d. adaptive reflex
2. During infancy, a capacity for imitating others as they watch them first becomes evident at about 9 months of age. T or F?
3. After age 2, infants tested in a looking chamber show a marked preference for familiar faces and simpler designs. T or F?

4. General excitement or interest is the clearest emotional response present in newborn infants, but meaningful expressions of delight and distress appear soon after. T or F?
5. Neonates display a social smile as early as 10 days after birth. T or F?

THINK CRITICALLY

Reflect

6. If you were going to test newborn infants to see if they prefer their own mother’s face to that of a stranger, what precautions might you take?

Relate

What infant reflexes have you observed? Can you give an example of how heredity and environment interact during motor development?

To know what a baby is feeling, would it be more helpful to be able to detect delight and distress (Bridges) or joy, anger, and sadness (Izard)?

Answers: 1. C 2. F 3. F 4. T 5. F 6. In one study of the preferences of newborns, the hair color and complexion of strangers were matched to those of the mothers. Also, only the mother’s or stranger’s face was visible during testing. And finally, a scent was used to mask olfactory (smell) cues so that an infant’s preference could not be based on the mother’s familiar odor (Bushnell, Sai, & Mullin, 1989).

**Social Development—
Baby, I’m Stuck on You**

Gateway Question 3.3: *Of what significance is a child’s emotional bond with adults?*

Like all humans, babies are social creatures. Their early **social development** is rooted in emotional attachment and the need for physical contact. As infants form their first emotional bond with an adult, usually a parent, they also begin to develop self-awareness and to become aware of others. This early social development lays a foundation for subsequent relationships with parents, siblings, friends, and relatives (Shaffer & Kipp, 2010).

- Social smile** Smiling elicited by social stimuli, such as seeing a parent’s face.
- Social development** The development of self-awareness, attachment to parents or caregivers, and relationships with other children and adults.

Attachment

The real core of social development is found in the **emotional attachment**, or close emotional bond, that babies form with their primary caregivers. To investigate mother–infant relationships, Harry Harlow separated baby rhesus monkeys from their mothers at birth. The real mothers were replaced with **surrogate** (substitute) **mothers**. Some were made of cold, unyielding wire. Others were covered with soft terry cloth (● Figure 3.12).

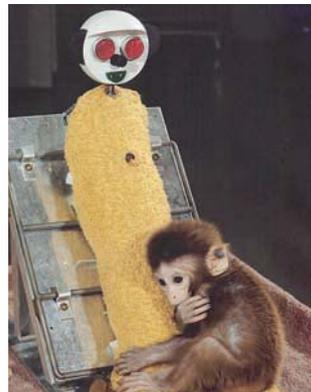
When the infants were given a choice between the two mothers, they spent most of their time clinging to the cuddly terry-cloth mother. This was true even when the wire mother held a bottle, making her the source of food. The “love” and attachment displayed toward the cloth replicas was identical to that shown toward natural mothers. For example, when frightened by rubber snakes, wind-up toys, and other “fear stimuli,” the infant monkeys ran to their cloth mothers and clung to them for security. These classic studies suggest that attachment begins with **contact comfort**, the pleasant, reassuring feeling infants get from touching something soft and warm, especially their mother.

There is a sensitive period (roughly the first year of life) during which attachment must occur for optimal development. Returning to Samantha’s story, we find that attachment keeps her close to Carol, who provides safety, stimulation, and a secure “home base” from which Samantha can go exploring.

Mothers usually begin to feel attached to their baby before birth. For their part, as babies mature, they become more and more capable of bonding with their mothers. For the first few months, babies respond more or less equally to everyone. By 2 or 3 months, most babies prefer their mothers to strangers. By around 7 months, babies generally become truly attached to their mothers, crawling after them if they can. Shortly thereafter, they begin to form attachments to other people as well, such as their father, grandparents, or siblings (Sigelman & Rider, 2009).

A direct sign that an emotional bond has formed appears around 8 to 12 months of age. At that time, Samantha will display **separation anxiety**—crying and signs of fear—when she is left alone or with a stranger. Mild separation anxiety is normal. When it is more intense, it may reveal a problem. At some point in their lives, about 1 in 20 children suffer from *separation anxiety disorder* (Dick-Niederhauser & Silverman, 2006). These children are miser-

● **Figure 3.12** An infant monkey clings to a cloth-covered surrogate mother. Baby monkeys become attached to the cloth “contact-comfort” mother but not to a similar wire mother. This is true even when the wire mother provides food. Contact comfort may also underlie the tendency of children to become attached to inanimate objects, such as blankets or stuffed toys.



Courtesy of Harry Harlow, University of Wisconsin Primate Laboratory.

Most parents are familiar with the storm of crying that sometimes occurs when babies are left alone at bedtime. Bedtime distress can be a mild form of separation anxiety. As many parents know, it is often eased by the carefully monitored presence of “security objects,” such as a stuffed animal or favorite blanket (Donate-Bartfield & Passman, 2004).



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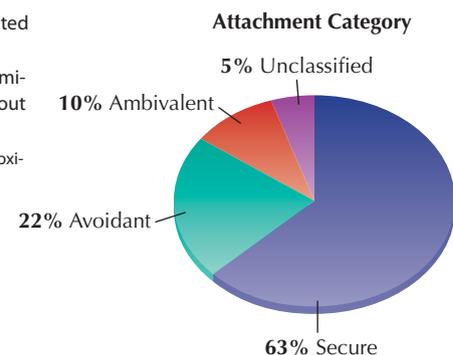
able when they are separated from their parents, whom they cling to or constantly follow. Some fear that they will get lost and never see their parents again. Many refuse to go to school, which can be a serious handicap. Children tend to grow out of the disorder (Kearney et al., 2003), but if separation anxiety is intense or lasts for more than a month, parents should seek professional help for their child (Allen et al., 2010).

Attachment Quality

According to psychologist Mary Ainsworth (1913–1999), the quality of attachment is revealed by how babies act when their mothers return after a brief separation. Infants who are **securely attached** have a stable and positive emotional bond. They are upset by the mother’s absence and seek to be near her when she returns. **Insecure-avoidant** infants have an anxious emotional bond. They tend to turn away from the mother when she returns. **Insecure-ambivalent** attachment is also an anxious emotional bond. In this case, babies have mixed feelings: They both seek to be near the returning mother and angrily resist contact with her. (See ● Figure 3.13.)

Attachment can have lasting effects (Bohlin & Hagekull, 2009). Infants who are securely attached at the age of 1 year show resiliency, curiosity, problem-solving ability, and social skills in preschool (Collins & Gunnar, 1990). In contrast, attachment failures can be quite damaging. Consider, for example, the plight of children raised in severely overcrowded orphanages (Wilson, 2003). These children get almost no attention from adults for the first year or two of their lives. Once adopted, many are poorly attached to their new parents. Some, for instance, will wander off with strangers, are anxious and remote, and don’t like to be touched or to make eye contact with others (O’Conner et al., 2003). In short,

● **Figure 3.13** In the United States, about two thirds of all children from middle-class families are securely attached. About 1 child in 3 is insecurely attached. (Percentages are approximate. From Kaplan, 1998.)



Discovering Psychology

What's Your Attachment Style?

Do our first attachments continue to affect us as adults? Some psychologists believe they do, by influencing how we relate to friends and lovers (Bohlin & Hagekull, 2009; Sroufe et al., 2005). Read the following statements and see which best describes your adult relationships.

Secure Attachment Style

In general, I think most other people are well intentioned and trustworthy.
 I find it relatively easy to get close to others.
 I am comfortable relying on others and having others depend on me.
 I don't worry much about being abandoned by others.
 I am comfortable when other people want to get close to me emotionally.

Avoidant Attachment Style

I tend to pull back when things don't go well in a relationship.
 I am somewhat skeptical about the idea of true love.
 I have difficulty trusting my partner in a romantic relationship.
 Other people tend to be too eager to seek commitment from me.
 I get a little nervous if anyone gets too close emotionally.

Ambivalent Attachment Style

I have often felt misunderstood and unappreciated in my romantic relationships.
 My friends and lovers have been somewhat unreliable.

I love my romantic partner but I worry that she or he doesn't really love me.
 I would like to be closer to my romantic partner, but I'm not sure I trust her or him.

Do any of the preceding statements sound familiar? If so, they may describe your adult attachment style (Welch & Houser, 2010). Most adults have a secure attachment style that is marked by caring, supportiveness, and understanding. However, it's not unusual to have an avoidant attachment style that reflects a tendency to resist intimacy and commitment to others (Collins et al., 2002). An ambivalent attachment style is marked by mixed feelings about love and friendship (Tidwell, Reis, & Shaver, 1996). Do you see any similarities between your present relationships and your attachment experiences as a child?

for some children, a lack of affectionate care early in life leaves a lasting emotional impact well into adulthood (see "What's Your Attachment Style?").

Promoting Secure Attachment

One key to secure attachment is a mother who is accepting and sensitive to her baby's signals and rhythms. Poor attachment occurs when a mother's actions are inappropriate, inadequate, intrusive, overstimulating, or rejecting. An example is a mother who tries to play with a drowsy infant or who ignores a baby who is looking at her and vocalizing. The link between sensitive caregiving and secure attachment appears to apply to all cultures (Posada et al., 2002).

What about attachment to fathers? Fathers of securely attached infants tend to be outgoing, agreeable, and happy in their marriage. In general, a warm family atmosphere—one that includes sensitive mothering *and* fathering—produces secure children (Belsky, 1996; Gomez & McLaren, 2007).

Day Care

Does commercial day care interfere with the quality of attachment? It depends on the quality of day care. Overall, *high-quality* day care does not adversely affect attachment to parents. In fact, high-quality day care can actually improve children's social and mental skills (Mercer, 2006; National Institute of Child Health and Human Development, 2010). Children in high-quality day care tend to have better relationships with their mothers and fewer behavior problems. They also have better cognitive skills and language abilities (Burchinal et al., 2000; Vandell, 2004).

However, all the positive effects just noted are *reversed* for low-quality day care. Low-quality day care *is* risky and *may* weaken attachment (Phillips & Lowenstein, 2011). Poor-quality day care can even create behavior problems that didn't exist beforehand (Pierrehumbert et al., 2002). Parents are wise to carefully evaluate and monitor the quality of day care their children receive.

What should parents look for when they evaluate the quality of day care? Parents seeking quality day care should look for responsive and sensitive caregivers who offer plenty of attention and verbal and cognitive stimulation (Phillips & Lowenstein, 2011). This is more likely to occur in daycares with *at least* the following: (1) a small number of children per caregiver, (2) small overall group size (12 to 15), (3) trained caregivers, (4) minimal staff turnover, and (5) stable, consistent care. (Also, avoid any child-care center with the words *zoo*, *menagerie*, or *stockade* in its name.)

- Emotional attachment** An especially close emotional bond that infants form with their parents, caregivers, or others.
- Surrogate mother** A substitute mother (often an inanimate dummy in animal research).
- Contact comfort** A pleasant and reassuring feeling human and animal infants get from touching or clinging to something soft and warm, usually their mother.
- Separation anxiety** Distress displayed by infants when they are separated from their parents or principal caregivers.
- Secure attachment** A stable and positive emotional bond.
- Insecure-avoidant attachment** An anxious emotional bond marked by a tendency to avoid reunion with a parent or caregiver.
- Insecure-ambivalent attachment** An anxious emotional bond marked by both a desire to be with a parent or caregiver and some resistance to being reunited.

Attachment and Affectional Needs

A baby's **affectional needs**—needs for love and affection—are every bit as important as more obvious needs for food, water, and physical care. All things considered, creating a bond of trust and affection between the infant and at least one other person is a key event during the first year of life. Parents are sometimes afraid of “spoiling” babies with too much attention, but for the first year or two, this is nearly impossible. In fact, a later capacity to experience warm and loving relationships may depend on it.

Parental Influences—Life with Mom and Dad

Gateway Question 3.4: How important are parenting styles?

From the first few years of life, when caregivers are the center of a child's world, through to adulthood, the style and quality of mothering and fathering are very important.

Parenting Styles

Psychologist Diana Baumrind (1991, 2005) has studied the effects of three major **parental styles**, which are identifiable patterns of parental caretaking and interaction with children. See if you recognize the styles she describes.

Authoritarian parents enforce rigid rules and demand strict obedience to authority. Typically they view children as having few rights but adult-like responsibilities. The child is expected to stay out of trouble and to accept, without question, what parents regard as right or wrong. (“Do it because I say so.”) The children of

authoritarian parents are usually obedient and self-controlled. But they also tend to be emotionally stiff, withdrawn, apprehensive, and lacking in curiosity.

Overly permissive parents give little guidance, allow too much freedom, or don't hold children accountable for their actions. Typically, the child has rights similar to an adult's but few responsibilities. Rules are not enforced, and the child usually gets his or her way. (“Do whatever you want.”) Permissive parents tend to produce dependent, immature children who misbehave frequently. Such children are aimless and likely to “run amok.”

Baumrind describes **authoritative parents** as those who supply firm and consistent guidance, combined with love and affection. Such parents balance their own rights with those of their children. They control their children's behavior in a caring, responsive, nonauthoritarian way. (“Do it for this reason.”) Effective parents are firm and consistent, not harsh or rigid. In general, they encourage the child to act responsibly, to think, and to make good decisions. This style produces children who are *resilient* (good at bouncing back after bad experiences) and develop the strengths they need to thrive even in difficult circumstances (Bahr & Hoffmann, 2010; Kim-Cohen et al., 2004). The children of authoritative parents are competent, self-controlled, independent, assertive, and inquiring. They know how to manage their emotions and use positive coping skills (Eisenberg et al., 2003; Lynch et al., 2004). To read more about effective parenting, see this chapter's “Psychology in Action” section.

Maternal and Paternal Influences

Don't mothers and fathers parent differently? Yes. Although **maternal influences**—all the effects a mother has on her child—generally have a greater impact, fathers do make a unique contribution to parenting (Santrock, 2009). Although fathers are spending more time with their children, mothers still do most of the nurturing and caretaking, especially of young children (Craig, 2006).

Studies of **paternal influences**—the sum of all effects a father has on his child—reveal that fathers are more likely to play with their children and tell them stories. In contrast, mothers are typically responsible for the physical and emotional care of their children (● Figure 3.14).

It might seem that the father's role as a playmate makes him less important. Not so. Samantha's playtime with David is actually very valuable. From birth onward, fathers pay more visual attention to



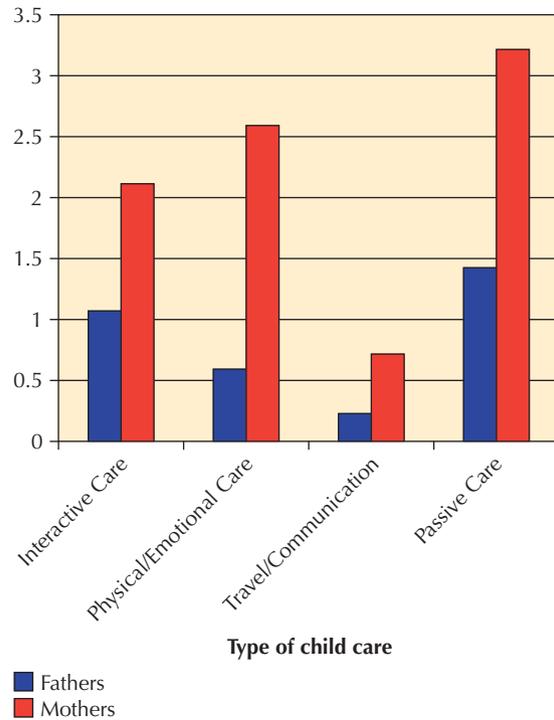
“Your father and I have come to believe that incarceration is sometimes the only appropriate punishment.”

Peter Steiner/Cartoonbank

Fathering typically makes a contribution to early development that differs in emphasis from mothering.



Bamana Stock/SuperStock



● **Figure 3.14** Mother-child and father-child interactions. This graph shows what occurred on routine days in a sample of over 1,400 Australian homes. Mothers spend about twice as long each day on childcare compared with fathers. Further, mothers spend more time on physical and emotional care (e.g., feeding, bathing, soothing) than on interactive care (e.g., playing, reading, activities) while fathers show the reverse pattern. Finally, mothers spend more time on travel (e.g., driving children to sports or music lessons), communication (e.g., talking to teachers about their children), and passive care (e.g., supervising children while they play). (Adapted from Craig, 2006.)

children than mothers do. Fathers are much more tactile (lifting, tickling, and handling the baby), more physically arousing (engaging in rough-and-tumble play), and more likely to engage in unusual play (imitating the baby, for example). In comparison, mothers speak to infants more, play more conventional games (such as peekaboo), and, as noted, spend much more time in caregiving. Young children who spend a lot of time playing with their fathers tend to be more competent in many ways (Paquette, 2004; Tamis-LeMonda et al., 2004).

Overall, fathers can be as affectionate, sensitive, and responsive as mothers are. Nevertheless, infants and children tend to get very different views of males and females. Females, who offer comfort, nurturance, and verbal stimulation, tend to be close at hand. Males come and go, and when they are present, action, exploration, and risk-taking prevail. It's no wonder, then, that the parental styles of mothers and fathers have a major impact on children's gender role development (Holmes & Huston, 2010; Videon, 2005).

Ethnic Differences: Four Flavors of Parenting

Do ethnic differences in parenting affect children in distinctive ways? Diana Baumrind's work provides a good overall summary of the effects of parenting. However, her conclusions are proba-

bly most valid for families whose roots lie in Europe. Child rearing in other ethnic groups often reflects different customs and beliefs. Cultural differences are especially apparent with respect to the meaning attached to a child's behavior. Is a particular behavior "good" or "bad"? Should it be encouraged or discouraged? The answer depends greatly on parents' cultural values (Leyendecker et al., 2005).

Making generalizations about groups of people is always risky. Nevertheless, some typical differences in child-rearing patterns have been observed in North American ethnic communities, as we discuss here (Kaplan, 1998; Parke, 2004).

African-American Families

Traditional African-American values emphasize loyalty and interdependence among family members, security, developing a positive identity, and not giving up in the face of adversity. African-American parents typically stress obedience and respect for elders (Dixon, Graber, & Brooks-Gunn, 2008). Child discipline tends to be fairly strict (Parke, 2004), but many African-American parents see this as a necessity, especially if they live in urban areas where safety is a concern. Self-reliance, resourcefulness, and an ability to take care of oneself in difficult situations are also qualities that African-American parents seek to promote in their children.

Hispanic Families

Like African-American parents, Hispanic parents tend to have relatively strict standards of discipline (Dixon, Graber, & Brooks-Gunn, 2008). They also place a high value on *familismo*: the centrality of the family, with a corresponding stress on family values, family pride, and loyalty (Glass & Owen, 2010). Hispanic families are typically affectionate and indulgent toward younger children. However, as children grow older, they are expected to learn social skills and to be calm, obedient, courteous, and respectful (Calzada, Fernandez, & Cortes, 2010). In fact, such social skills may be valued more than cognitive skills (Delgado & Ford, 1998). In addition, Hispanic parents tend to stress cooperation more than competition. Such values can put Hispanic children at a disadvantage in highly competitive, European-American culture.

- Affectional needs** Emotional needs for love and affection.
- Parental styles** Identifiable patterns of parental caretaking and interaction with children.
- Authoritarian parents** Parents who enforce rigid rules and demand strict obedience to authority.
- Overly permissive parents** Parents who give little guidance, allow too much freedom, or do not require the child to take responsibility.
- Authoritative parents** Parents who supply firm and consistent guidance combined with love and affection.
- Maternal influences** The aggregate of all psychological effects mothers have on their children.
- Paternal influences** The aggregate of all psychological effects fathers have on their children.

Asian-American Families

Asian cultures tend to be group oriented, and they emphasize interdependence among individuals. In contrast, Western cultures value individual effort and independence. This difference is often reflected in Asian-American child-rearing practices (Chao & Tseng, 2002). Asian-American children are often taught that their behavior can bring either pride or shame to the family. Therefore, they are obliged to set aside their own desires when the greater good of the family is at stake (Parke, 2004). Parents tend to act as teachers who encourage hard work, moral behavior, and achievement. For the first few years, parenting is lenient and permissive. However, after about age 5, Asian-American parents begin to expect respect, obedience, self-control, and self-discipline from their children.

Arab-American Families

In Middle Eastern cultures, children are expected to be polite, obedient, disciplined, and conforming (Erickson & Al-Timimi, 2001). Punishment may consist of spankings, teasing, or shaming in front of others. Arab-American fathers tend to be strong authority figures who demand obedience so that the family will not be shamed by a child's bad behavior. Success, generosity, and hospitality are highly valued in Arab-American culture. The pursuit of family honor encourages hard work, thrift, conservatism, and educational achievement. The welfare of the family is emphasized over individual identity. Thus, Arab-American children are raised to respect their parents, members of their extended family, and other adults as well (Medhus, 2001).



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In other ethnic communities, norms for effective parenting often differ in subtle ways from parenting styles in Euro-American culture.

Implications

Children are reared in a remarkable variety of ways around the world. In fact, many of the things we do in North America, such as forcing young children to sleep alone, would be considered odd or wrong in other cultures. In the final analysis, parenting can be judged only if we know what culture or ethnic community a child is being prepared to enter (Leyendecker et al., 2005).

Knowledge Builder

Social Development in Childhood

RECITE

1. The development of separation anxiety in an infant corresponds to the formation of an attachment to parents. T or F?
2. High-quality day care can actually improve children's social and mental skills. T or F?
3. Fathers are more likely to act as playmates for their children, rather than as caregivers. T or F?
4. According to Diana Baumrind's research, effective parents are authoritarian in their approach to their children's behavior. T or F?
5. Asian-American parents tend to be more individually oriented than parents whose ethnic roots are European. T or F?

REFLECT

Think Critically

6. Can emotional bonding begin before birth?
7. Which parenting style do you think would be most likely to lead to eating disorders in children?

Self-Reflect

Do you think that your experiences as a child, such as your early attachment pattern, affect your life as an adult? Can you think of any examples from your own life?

Do you know any parents who have young children and who are authoritarian, permissive, or authoritative? What are their children like?

Do you think parenting depends on ethnicity? If so, why? If not, why not?

Answers: 1. T 2. T 3. T 4. F 5. F 6. It certainly can for parents. When a pregnant woman begins to feel fetal movements, she becomes aware that a baby is coming to life inside of her. Likewise, prospective parents who hear a fetal heartbeat at the doctor's office or see an ultrasound image of the fetus begin to become emotionally attached to the unborn child (Santrock, 2009). 7. Both authoritarian and permissive styles are more likely to lead to eating disorders in children. Parents who are too controlling about what their children eat or too willing to withdraw from conflicts over eating can create problems for their children (Haycraft & Blissett, 2010).

Language Development— Who Talks Baby Talk?

Gateway Question 3.5: How do children acquire language?

There's something almost miraculous about a baby's first words. As infants, how did we manage to leap into the world of language? Even a quick survey like this one reveals that both maturation (nature) and social development (nurture) provide a foundation for language learning.

Language development is closely tied to maturation (Carroll, 2008; Gleason & Ratner, 2009). As every parent knows, babies can cry from birth on. By 1 month of age, they use crying to gain attention. Typically, parents can tell if an infant is hungry, angry, or in pain from the tone of the crying (Kaplan, 1998). Around 6 to 8 weeks of age, babies begin *cooing* (the repetition of vowel sounds such as “oo” and “ah”).

By 7 months of age, Samantha’s nervous system will mature enough to allow her to grasp objects, to smile, laugh, sit up, and *babble*. In the babbling stage, the consonants *b*, *d*, *m*, and *g* are combined with the vowel sounds to produce meaningless language sounds: *dadadadada* or *bababa*. At first, babbling is the same around the world. But soon, the language spoken by parents begins to have an influence. That is, Japanese babies start to babble in a way that sounds like Japanese, Mexican babies babble in Spanish-like sounds, and so forth (Gopnik, Meltzoff, & Kuhl, 2000; Kuhl, 2004).

At about 1 year of age, children respond to real words such as *no* or *hi*. Soon afterward, the first connection between words and objects forms, and children may address their parents as “Mama” or “Dada.” By age 18 months to 2 years, Samantha’s vocabulary may include a hundred words or more. At first there is a *single-word stage*, during which children use one word at a time, such as “go,” “juice,” or “up.” Soon after, words are arranged in simple two-word sentences called *telegraphic speech*: “Want-Teddy,” “Mama-gone.”

Language and the Terrible Twos

At about the same time that children begin to put two or three words together, they become much more independent. Two-year-olds understand some of the commands parents make, but they are not always willing to carry them out. A child like Samantha may assert her independence by saying “No drink,” “Me do it,” “My cup, my cup,” and the like. It can be worse, of course. A 2-year-old may look at you intently, make eye contact, listen as you shout “No, no,” and still pour her juice on the cat.

During their second year, children become increasingly capable of mischief and temper tantrums. Thus, calling this time “the terrible twos” is not entirely inappropriate. One-year-olds can do plenty of things parents don’t want them to do. However, it’s usually 2-year-olds who do things *because* you don’t want them to (Gopnik, Meltzoff, & Kuhl, 2000). Perhaps parents can take some comfort in knowing that a stubborn, negative 2-year-old is simply becoming more independent. When Samantha is 2 years old, Carol and David would be wise to remember that “this, too, shall pass.”

After age 2, the child’s comprehension and use of words takes a dramatic leap forward. From this point on, vocabulary and language skills grow at a phenomenal rate (Fernald, Perfors, & Marchman, 2006). By first grade, Samantha will be able to understand



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around 8,000 words and use about 4,000. She will have truly entered the world of language.

The Roots of Language

What accounts for this explosion of language development? Linguist Noam Chomsky (1975, 1986) has long claimed that humans have a **biological predisposition**, or hereditary readiness, to develop language. According to Chomsky, language patterns are inborn, much like a child’s ability to coordinate walking. If such inborn language recognition does exist, it may explain why children around the world use a limited number of patterns in their first sentences. Typical patterns include (Mussen et al., 1979):

- Identification: “See kitty.”
- Nonexistence: “All gone milk.”
- Possession: “My doll.”
- Agent-Action: “Mama give.”
- Negation: “Not ball.”
- Question: “Where doggie?”

Does Chomsky’s theory explain why language develops so rapidly? It is certainly part of the story. But many psychologists feel that Chomsky underestimates the importance of learning (Tomasello, 2003) and the social contexts that shape language development (Hoff, 2006, 2009). *Psycholinguists* (specialists in the psychology of language) have shown that imitation of adults and rewards for correctly using words (as when a child asks for a cookie) are an important part of language learning. Also, babies actively participate in language learning by asking questions, such as “What dis?” (Domingo & Goldstein-Alpern, 1999).

When a child makes a language error, parents typically repeat the child’s sentence, with needed corrections (Bohannon & Stanowicz, 1988; Hoff, 2006), or ask a clarifying question to draw the child’s attention to the error (Saxton, Houston-Price, & Dawson, 2005). More important is the fact that parents and children begin to communicate long before the child can speak. A readiness to interact *socially* with parents may be as important as innate language recognition. The next section explains why.

Biological predisposition The presumed hereditary readiness of humans to learn certain skills, such as how to use language, or a readiness to behave in particular ways.

Early Communication

How do parents communicate with infants before they can talk? Parents go to a great deal of trouble to get babies to smile and vocalize. In doing so, they quickly learn to change their actions to keep the infant's attention, arousal, and activity at optimal levels. A familiar example is the "I'm-Going-to-Get-You" game. In it, the adult says, "I'm gonna getcha . . . I'm gonna getcha . . . I'm gonna getcha . . . Gotcha!" Through such games, adults and babies come to share similar rhythms and expectations (Carroll, 2008). Soon a system of shared **signals** is created, including touching, vocalizing, gazing, and smiling. These help lay a foundation for later language use (Tamis-LeMonda, Bornstein, & Baumwell, 2001). Specifically, signals establish a pattern of "conversational" *turn-taking* (alternate sending and receiving of messages).

<i>Carol</i>	<i>Samantha</i>
"Oh what a nice little smile!"	(smiles)
"Yes, isn't that nice?"	
"There."	
"There's a nice little smile."	(burps)
"Well, pardon you!"	
"Yes, that's better, isn't it?"	
"Yes."	(vocalizes)
"Yes."	(smiles)
"What's so funny?"	

From the outside, such exchanges may look meaningless. In reality, they represent real communication. Samantha's vocalizations and attention provide a way of interacting emotionally with Carol and David. One study found that 6-week-old babies gaze at an adult's face in rhythm with the adult's speech (Crown et al., 2002). Infants as young as 4 months engage in vocal turn-taking with adults (Jaffe et al.,



Gary Comer/PhotoLibrary

As with *motherese*, parents use a distinctive style when singing to an infant. Even people who speak another language can tell if a tape-recorded song was sung to an infant or an adult (Trehub, Unyk, & Trainor, 1993).

2001). The more children interact with parents, the faster they learn to talk and the faster they learn thinking abilities (Dickinson & Tabors, 2001; Hoff & Tian, 2005). Unmistakably, social relationships contribute to early language learning (Hoff, 2006, 2009).

Parentese

When they talk to infants, parents use an exaggerated pattern of speaking called **motherese** or **parentese**. Typically, they raise their tone of voice, use short, simple sentences, repeat themselves, and use frequent gestures (Gogate, Bahrck, & Watson, 2000). They also slow their rate of speaking and use exaggerated voice inflections: "Did Samantha eat it A-L-L UP?"

What is the purpose of such changes? Parents are apparently trying to help their children learn language (Soderstrom, 2007). When a baby is still babbling, parents tend to use long, adult-style sentences. But as soon as the baby says its first word, they switch to parentese. By the time babies are 4 months old, they prefer parentese over normal speech (Cooper et al., 1997).

In addition to being simpler, parentese has a distinct "musical" quality (Trainor & Desjardins, 2002). No matter what language mothers speak, the melodies, pauses, and inflections they use to comfort, praise, or give warning are universal. Psychologist Anne Fernald has found that mothers of all nations talk to their babies with similar changes in pitch. For instance, we praise babies with a rising, then falling pitch ("BRA-vo!" "GOOD girl!"). Warnings are delivered in a short, sharp rhythm ("Nein! Nein!" "Basta! Basta!" "Not! Dude!"). To give comfort, parents use low, smooth, drawn-out tones ("Oooh poor baaa-by." "Oooh pobrecito.") A high-pitched, rising melody is used to call attention to objects ("See the pretty BIRDIE?") (Fernald, 1989).

Parentese helps parents get babies' attention, communicate with them, and teach them language (Thiessen, Hill, & Saffran, 2005). Later, as a child's speaking improves, parents tend to adjust their speech to the child's language ability. Especially from 18 months to 4 years of age, parents seek to clarify what a child says and prompt the child to say more.

In summary, some elements of language are innate. Nevertheless, our inherited tendency to learn language does not determine if we will speak English or Vietnamese, Spanish or Russian. Environmental forces also influence whether a person develops simple or sophisticated language skills. The first 7 years of life are a sensitive period in language learning (Hoff, 2009). Clearly, a full flowering of speech requires careful cultivation.

Knowledge Builder

Language Development in Childhood

RECITE

- The development of speech and language usually occurs in which order?
 - crying, cooing, babbling, telegraphic speech
 - cooing, crying, babbling, telegraphic speech
 - babbling, crying, cooing, telegraphic speech
 - crying, babbling, cooing, identification

2. Simple two-word sentences are characteristic of _____ speech.
3. Noam _____ has advanced the idea that language acquisition is built on innate patterns.
4. Pre-language turn-taking and social interactions would be of special interest to a psycholinguist. T or F?
5. The style of speaking known as _____ is higher in pitch and has a musical quality.

REFLECT

Think Critically

6. The children of professional parents hear more words per hour than the children of welfare parents, and they also tend to score higher on tests of mental abilities. How else could their higher scores be explained?

Self-Reflect

In order, see if you can name and imitate the language abilities you had as you progressed from birth to age 2 years. Now see if you can label and imitate some basic elements of parentese.

In your own words, state at least one argument for and against Chomsky's view of language acquisition.

You are going to spend a day with a person who speaks a different language than you do. Do you think you would be able to communicate with the other person? How does this relate to language acquisition?

Answers: 1. a 2. telegraphic 3. Chomsky 4. T 5. Parentese or motherese are less common in welfare homes, yet, even when such differences are taken into account, brighter children tend to come from richer language environments (Hart & Risley, 1999).

Jean Piaget (1896–1980)—philosopher, psychologist, and keen observer of children.

children as they solved various thought problems. (It is tempting to imagine that Piaget's illustrious career was launched one day when his wife said to him, "Watch the children for a while, will you, Jean?")



Yves De Braine/stockphoto.com

Mental Processes

Piaget was convinced that intellect grows through processes he called assimilation and accommodation. **Assimilation** refers to using existing mental patterns in new situations. Let's say that little Benjamin is taken for a drive in the country. He sees his first live horse in a field, points, and calls out, "Horse!" He has already seen horses on television and even has a stuffed toy horse. In this case, he adds this new experience to his existing concept of horse. Piaget would say it has been *assimilated* to an existing knowledge structure.

In **accommodation**, existing ideas are modified to fit new requirements. For instance, suppose a month later Benjamin goes to the zoo, where he sees his first zebra. Proudly, he again exclaims, "Horse!" This time, his mother replies, "No dear, that's a zebra." Little Benjamin has *failed to assimilate* the zebra to his horse concept. He must now *accommodate* by creating a new concept, *zebra*, and modifying his concept of horse (*not* black and white stripes).

The Sensorimotor Stage (0–2 Years)

Look up from this book until your attention is attracted to something else in the room. Now close your eyes. Is it still there? How do you know? As an adult, you can keep an image of the object in your "mind's eye." According to Piaget, newborn babies cannot create *internal representations* such as mental images. As a result, they lack **object permanence**, an understanding that objects continue to exist when they are out of sight.

Cognitive Development—Think Like a Child

Gateway Question 3.6: How do children learn to think?

Now that we have Samantha talking, let's move on to a broader view of intellectual development. Swiss psychologist and philosopher Jean Piaget (Jahn pea-ah-ZHAY) (1896–1980) provided some of the first great insights into how children develop thinking abilities when he proposed that children's cognitive skills progress through a series of maturational stages. Also, many psychologists have become interested in how children learn the intellectual skills valued by their culture. Typically, children do this with guidance from skilled "tutors" (parents and others).

Piaget's Theory of Cognitive Development

Piaget's ideas have deeply affected our view of children (Feldman, 2004). According to Piaget (1951, 1952), children's thinking is, generally speaking, less abstract than that of adults. They tend to base their understanding on particular examples and objects they can see or touch. Also, children use fewer generalizations, categories, and principles. Piaget also believed that all children mature through a series of distinct stages in intellectual development. Many of his ideas came from observing his own

Signal In early language development, any behavior, such as touching, vocalizing, gazing, or smiling, that allows nonverbal interaction and turn-taking between parent and child.

Motherese (or parentese) A pattern of speech used when talking to infants, marked by a higher-pitched voice; short, simple sentences; repetition; slower speech; and exaggerated voice inflections.

Assimilation In Piaget's theory, the application of existing mental patterns to new situations (that is, the new situation is assimilated to existing mental schemes).

Accommodation In Piaget's theory, the modification of existing mental patterns to fit new demands (that is, mental schemes are changed to accommodate new information or experiences).

Sensorimotor stage Stage of intellectual development during which sensory input and motor responses become coordinated.

Object permanence Concept, gained in infancy, in which objects continue to exist even when they are hidden from view.

BRIDGES

Concepts and language are other types of internal representation. See Chapter 8, pages 276–277, for more information.

For this reason, in the first 2 years of life, Samantha's intellectual development will be largely nonintellectual and nonverbal. She will be concerned mainly with learning to coordinate information from her senses with her motor movements. But sometime during their first year, babies begin to actively pursue disappearing objects. By age 2, they can anticipate the movement of an object behind a screen. For example, when watching an electric train, Samantha will look ahead to the end of a tunnel rather than staring at the spot where the train disappeared.

In general, developments in this stage indicate that the child's conceptions are becoming more *stable*. Objects cease to appear and disappear magically, and a more orderly and predictable world replaces the confusing and disconnected sensations of infancy.

The Preoperational Stage (2–7 Years)

Close your eyes again. Imagine the room you sleep in. What would it look like if you were perched on the ceiling and your bed was missing? You have now mentally operated on your image by *transforming* it. According to Piaget, even though preoperational children can form mental images or ideas, they are preoperational because they cannot easily **transform** those images or ideas in their minds.

This is why, although children begin to think *symbolically* and use language before the age of 6 or 7, their thinking is still very concrete and **intuitive** (it makes little use of reasoning and logic). (Do you remember thinking as a child that the sun and the moon followed you when you took a walk?) Such thinking is also often labeled *superstitious*, especially when it persists into later childhood and adulthood (Wargo, 2008).

Let's visit Samantha at age 5: If you show her a short, wide glass full of milk and a taller, narrow glass full of milk, she will most likely tell you that the taller glass contains more milk (even if it doesn't). Samantha will tell you this even if she watches you pour milk from the short glass into an empty taller glass. Older children can easily mentally transform the pouring of the milk by mentally *reversing* it, to see that the shape of the container is irrelevant to the volume of milk it contains. But Samantha is preoperational; she cannot engage in the mental operation of transforming the tall, narrow glass of milk back into a short, wide glass. Thus, she is not bothered by the fact that the milk appears to be transformed from a smaller to a larger amount. Instead, she responds only to the fact that *taller* seems to mean *more* (see ● Figure 3.15).

After about age 7, children are no longer fooled by this situation. Perhaps that's why age 7 has been called the "age of reason." From age 7 on, we see a definite trend toward more logical, adult-like thought (Flavell, 1992).

During the preoperational stage, the child is also quite **egocentric**, or unable to take the viewpoint of other people. The child's ego seems to stand at the center of his or her world. To illustrate,



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● **Figure 3.15** Children under age 7 intuitively assume that a volume of liquid increases when it is poured from a short, wide container into a taller, thinner one. This boy thinks the tall container holds more than the short one. Actually each holds the same amount of liquid. Children make such judgments based on the height of the liquid, not its volume.

show Samantha a two-sided mirror. Then hold it between you and her, so she can see herself in it. If you ask her what she thinks *you* can see, she imagines that you see *her* face reflected in the mirror, instead of your own. She cannot mentally transform the view she sees into the view you must be seeing.

Such egocentrism explains why children can seem exasperatingly selfish or uncooperative at times. If Benjamin blocks your view by standing in front of the TV, he assumes that you can see it if he can. If you ask him to move so you can see better, he may move



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Crossing a busy street can be dangerous for the preoperational child. Because their thinking is still egocentric, younger children cannot understand why the driver of a car can't see them if they can see the car. Children under the age of 7 also cannot consistently judge speeds and distances of oncoming cars. Adults can easily overestimate the "street smarts" of younger children. It is advisable to teach children to cross with a light, in crosswalks, or with assistance.

so that he can see better! Benjamin is not being selfish in the ordinary sense. He just doesn't realize that your view differs from his.

In addition, the child's use of language is not as sophisticated as it might seem. Children have a tendency to confuse words with the objects they represent. If Benjamin calls a toy block a "car" and you use the block to make a "house," he may be upset. To children, the name of an object is as much a part of the object as its size, shape, and color. This seems to underlie a preoccupation with name-calling. To the preoperational child, insulting words may really hurt. Samantha was once angered by her older brother. Searching for a way to retaliate against her larger and stronger foe, she settled on, "You panty-girdle!" It was the worst thing she could think of saying.

The Concrete Operational Stage (7–11 Years)

The hallmark of this stage is the ability to carry out mental operations such as *reversing* thoughts. A 4-year-old boy in the preoperational stage might have a conversation like this (showing what happens when a child's thinking *lacks* reversibility):

"Do you have a brother?"
 "Yes."
 "What's his name?"
 "Billy."
 "Does Billy have a brother?"
 "No."

Reversibility of thought allows children in the concrete operational stage to recognize that if $4 \times 2 = 8$, then 2×4 does, too. Younger children must memorize each relationship separately.

The development of mental operations allows mastery of **conservation**—the concept that mass, weight, and volume remain unchanged when the shape of objects changes. Children have learned conservation when they understand that rolling a ball of clay into a "snake" does not increase the amount of clay. Likewise, pouring liquid from a tall, narrow glass into a shallow dish does not reduce the amount of liquid. In each case, the volume remains the same despite changes in shape or appearance. The original amount is *conserved*. (See ● Figure 3.15.)

During the concrete operational stage, children begin to use concepts of time, space, and number. The child can think logically about very concrete objects or situations, categories, and principles. Such abilities help explain why children stop believing in Santa Claus when they reach this stage. Because they can conserve volume, they realize that Santa's sack couldn't possibly hold enough toys for millions of girls and boys.

The Formal Operational Stage (11 Years and Up)

After about the age of 11, children begin to break away from concrete objects and specific examples. Thinking is based more on abstract principles, such as "democracy," "honor," or "correlation." Children who reach this stage become self-reflective about their own thoughts, and they become less egocentric. Older children and young adolescents also gradually become able to consider

hypothetical possibilities (suppositions, guesses, or projections). For example, if you ask a younger child, "What do you think would happen if it suddenly became possible for people to fly?" the child might respond, "People can't fly." Older children are better able to consider such possibilities.

Full adult intellectual ability is attained during the stage of formal operations. Older adolescents are capable of inductive and deductive reasoning, and they can comprehend math, physics, philosophy, psychology, and other abstract systems. They can learn to test hypotheses in a scientific manner. Of course, not everyone reaches this level of thinking. Also, many adults can think formally about some topics, but their thinking becomes concrete when the topic is unfamiliar. This implies that formal thinking may be more a result of culture and learning than maturation. In any case, after late adolescence, improvements in intellect are based on gaining specific knowledge, experience, and wisdom rather than on any leaps in basic thinking capacity.

How can parents apply Piaget's ideas? Piaget's theory suggests that the ideal way to guide intellectual development is to provide experiences that are only slightly novel, unusual, or challenging. Remember, a child's intellect develops mainly through accommodation. It is usually best to follow a *one-step-ahead strategy*, in which your teaching efforts are aimed just beyond a child's current level of comprehension (Brainerd, 2003).

Parents should avoid *forced teaching*, or "hothousing," which is like trying to force plants to bloom prematurely. Forcing children to learn reading, math, gymnastics, swimming, or music at an accelerated pace can bore or oppress them. True intellectual enrichment respects the child's interests. It does not make the child feel pressured to perform.

■ Table 3.2 briefly summarizes each Piagetian stage. To help you remember Piaget's theory, the table describes what would happen at each stage if we played a game of *Monopoly* with the child. You'll also find brief suggestions about how to relate to children in each stage.

Preoperational stage	Period of intellectual development during which children begin to use language and think symbolically, yet remain intuitive and egocentric in their thought.
Transformation	The mental ability to change the shape or form of a substance (such as clay or water) and to perceive that its volume remains the same.
Intuitive thought	Thinking that makes little or no use of reasoning and logic.
Egocentric thought	Thought that is self-centered and fails to consider the viewpoints of others.
Concrete operational stage	Period of intellectual development during which children become able to use the concepts of time, space, volume, and number, but in ways that remain simplified and concrete, rather than abstract.
Conservation	In Piaget's theory, mastery of the concept that the weight, mass, and volume of matter remains unchanged (is conserved) even when the shape or appearance of objects changes.
Formal operational stage	Period of intellectual development characterized by thinking that includes abstract, theoretical, and hypothetical ideas.

TABLE 3.2 Piaget—A Guide for Parents

Piaget	Monopoly Game	Guidelines for Parents
Sensorimotor Stage (0–2 Years) The stage during which sensory input and motor responses become coordinated.	The child tries to put houses, hotels, and dice in her mouth and plays with “Chance” cards.	Active play with a child is most effective at this stage. Encourage explorations in touching, smelling, and manipulating objects. Peekaboo is a good way to establish the permanence of objects.
Preoperational Stage (2–7 Years) The period of cognitive development when children begin to use language and think symbolically, yet remain intuitive and egocentric.	The child plays <i>Monopoly</i> , but makes up her own rules and cannot understand instructions.	Specific examples and touching or seeing things continue to be more useful than verbal explanations. Learning the concept of conservation may be aided by demonstrations with liquids, beads, clay, and other substances.
Concrete Operational Stage (7–11 Years) The period of cognitive development during which children begin to use concepts of time, space, volume, and number, but in ways that remain simplified and concrete.	The child understands basic instructions and will play by the rules but is not capable of hypothetical transactions dealing with mortgages, loans, and special pacts with other players.	Children are beginning to use generalizations, but they still require specific examples to grasp many ideas. Expect a degree of inconsistency in the child’s ability to apply concepts of time, space, quantity, and volume to new situations.
Formal Operations Stage (11 Years and Up) The period of intellectual development marked by a capacity for abstract, theoretical, and hypothetical thinking.	The child no longer plays the game mechanically; complex and hypothetical transactions unique to each game are now possible.	It is now more effective to explain things verbally or symbolically and to help children master general rules and principles. Encourage the child to create hypotheses and to imagine how things could be.

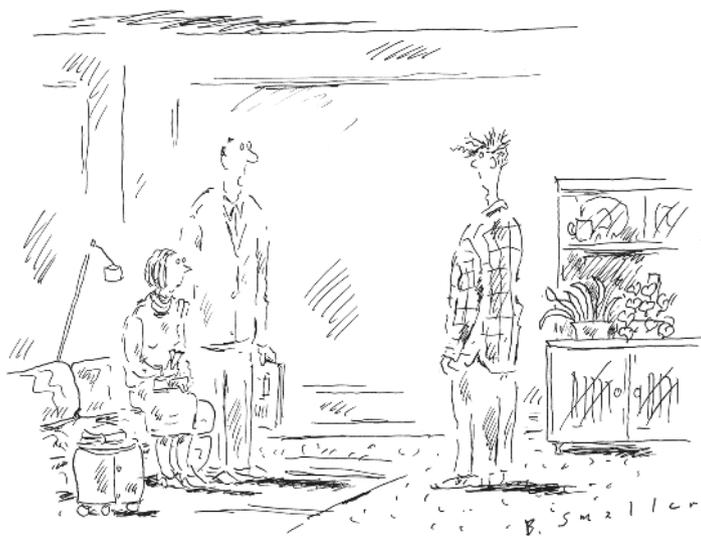
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Piaget Today

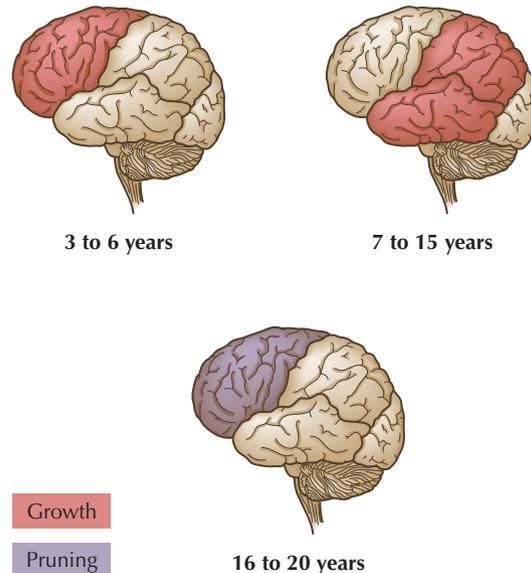
Today, Piaget’s theory remains a valuable “road map” for understanding how children think. On a broad scale, many of Piaget’s ideas have held up well. However, there has been disagreement about specific details. For example, according to learning theorists, children continuously gain specific knowledge; they do not undergo stage-like leaps in general mental ability (Feldman, 2004; Siegler, 2005). On the other hand, the growth in connections between brain cells occurs in waves that parallel some of Piaget’s stages (see • Figure 3.16). Thus, the truth may lie somewhere between Piaget’s stage theory and modern learning theory.

In addition, it is now widely accepted that children develop cognitive skills somewhat earlier than Piaget originally thought

(Bjorklund, 2005). For example, Piaget believed that infants under the age of 1 year cannot think (use internal representations). Such abilities, he believed, emerge only after a long period of sensorimotor development. Babies, he said, can have no memory of people and objects that are out of sight. Yet we now know that infants begin forming representations of the world very early in life. For example, babies as young as 3 months of age appear to



“Young man, go to your room and stay there until your cerebral cortex matures.”



• **Figure 3.16** Between the ages of 3 and 6, a tremendous wave of growth occurs in connections among neurons in the frontal areas of the brain. This corresponds to the time when children make rapid progress in their ability to think symbolically. Between the ages of 7 and 15, peak synaptic growth shifts to the temporal and parietal lobes. During this period, children become increasingly adept at using language, a specialty of the temporal lobes. In the late teens, the brain actively destroys unneeded connections, especially in the frontal lobes. This pruning of synapses sharpens the brain’s capacity for abstract thinking (Restak, 2001). (Courtesy of Dr. Paul Thompson, Laboratory of Neuro Imaging, UCLA School of Medicine.)

Critical Thinking**Theory of Mind: I'm a Me!.... and You're a You!**

A major step in human development is becoming aware of oneself as a person. When you look in a mirror, you recognize the image staring back as your own—except, perhaps, early on Monday mornings. Like many such events, initial self-awareness depends on maturation of the nervous system. In a typical test of self-recognition, infants are shown images of themselves on a television. Most infants have to be 18 months old before they recognize themselves (Nielsen & Dissanayake, 2004).

But just because a 2-year-old knows he is a *me* doesn't mean he knows you are a *you*. At age 3, Eric once put his hands over his eyes and exclaimed to his friend, Laurence, "You can't see me now!" He knew he had a point of view but did not know his friend's point of view could be different from his own.

Earlier, we saw that Piaget used the term *egocentrism* to refer to this endearing feature of young children and proposed that young children remain egocentric until they enter the concrete operational stage at about age 7. More recent evidence suggests that children become less egocentric beginning at about age 4 (Baron-Cohen, 1985; Doherty, 2009). As noted above, this developing capacity is called *theory of mind* (Gopnik, 2009).

One way to assess if a child understands that other people have their own mental

states is the false-belief (or "Sally-Anne") task. A child is shown two dolls, Sally and Anne. Sally has a basket and Anne has a box. Sally puts a coin in her basket and goes out to play. In the meantime, Anne takes the coin from Sally's basket and puts it into her box. Sally comes back and looks for the coin. To assess theory of mind, the child is asked where Sally will look for her coin. Although the child knows the coin is in Anne's box, the correct answer is that Sally will look in her basket. To

answer correctly, the child must understand that Sally's point of view did not include what the child saw (Baron-Cohen, 1985).

Theory of mind develops over time. It takes further development to appreciate that other people may lie, be sarcastic, make jokes, or use figures of speech. Some adults are not good at this. In fact, the available evidence suggests that children with autism spectrum disorders are particularly poor at this task (O'Hare et al., 2009).



Chris Lowe/Index Stock Imagery

A sense of self, or self-awareness, develops at about age 18 months. Before children develop self-awareness, they do not recognize their own image in a mirror. Typically, they think they are looking at another child. Some children hug the child in the mirror or go behind it looking for the child they see there (Lewis, 1995).

know that objects are solid and do not disappear when out of view (Baillargeon, 2004).

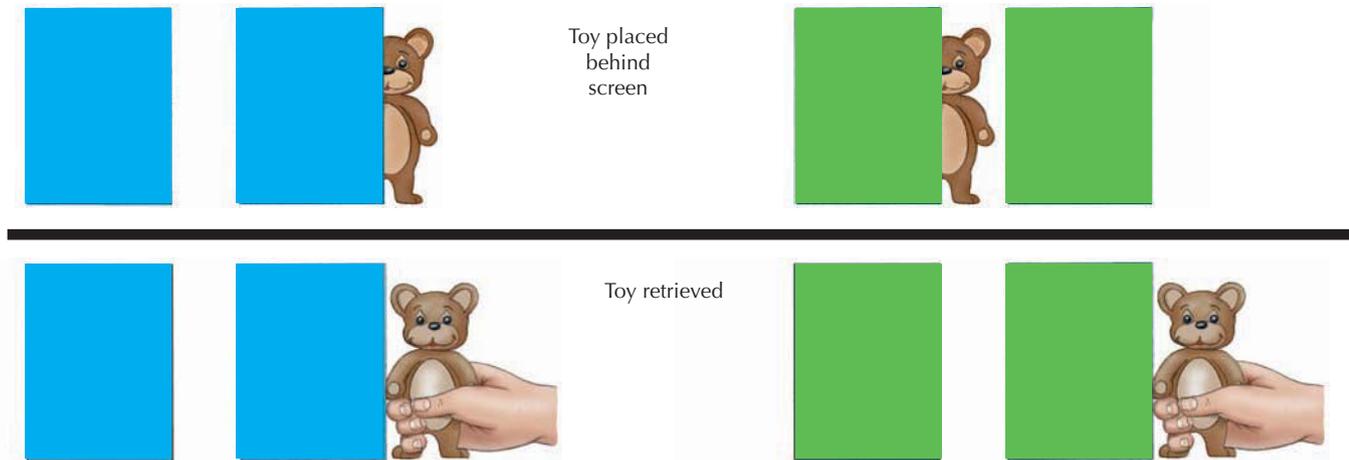
Why did Piaget fail to detect the thinking skills of infants? Most likely, he mistook babies' limited *physical* skills for *mental* incompetence. Piaget's tests required babies to search for objects or reach out and touch them. Newer, more sensitive methods are uncovering abilities Piaget missed. One such method takes advantage of the fact that babies, like adults, act surprised when they see something "impossible" or unexpected occur. To use this effect, psychologist Renee Baillargeon (1991, 2004) puts on little "magic shows" for infants. In her "theater," babies watch as possible and impossible events occur with toys or other objects. Some 3-month-old infants act surprised and gaze longer at impossible events. An example is seeing two solid objects appear to pass through each other. By the time they are 8 months old, babies can remember where objects are (or should be) for at least 1 minute (● Figure 3.17).

Similarly, Piaget thought that children remain egocentric during the preoperational stage, becoming aware of perspectives

other than their own only at age 7. Researchers have since begun to refer to this development as **theory of mind**, the understanding that people have mental states, such as thoughts, beliefs, and intentions, and that other people's mental states can be different from one's own. Psychologists currently believe that children as young as age 4 can understand that other people's mental states differ from their own (Doherty, 2009). (To read more about this fascinating development, see "Theory of Mind: I'm a Me!.... and You're a You!")

Another criticism of Piaget is that he underestimated the impact of culture on mental development. The next section tells how Samantha will master the intellectual tools valued by her culture.

Theory of mind The understanding that people have mental states, such as thoughts, beliefs, and intentions, and that other people's mental states can be different from one's own.



● **Figure 3.17** The panels on the left show a possible event, in which an infant watches as a toy is placed behind the right of two screens. After a delay of 70 seconds, the toy is brought into view from behind the right screen. In the two panels on the right, an impossible event occurs. The toy is placed behind the left screen and retrieved from behind the right. (A duplicate toy was hidden there before testing.) Eight-month-old infants react with surprise when they see the impossible event staged for them. Their reaction implies that they remember where the toy was hidden. Infants appear to have a capacity for memory and thinking that greatly exceeds what Piaget claimed is possible during the sensorimotor period. (Adapted from Baillargeon et al., 1989.)

Vygotsky's Sociocultural Theory

While Piaget stressed the role of maturation in cognitive development, Russian scholar Lev Vygotsky (1896–1934) focused on the impact of sociocultural factors. Many psychologists are convinced that Piaget gave too little credit to the effects of the learning environment. For example, children who grow up in villages where pottery is made can correctly answer questions about the conservation of clay at an earlier age than Piaget would have predicted. Vygotsky's (1962, 1978) key insight is that children's thinking develops through dialogues with more capable persons.

How does that relate to intellectual growth? So far, no one has published *A Child's Guide to Life on Earth*. Instead, children must learn about life from various “tutors,” such as parents, teachers, and older siblings. Even if *A Child's Guide to Life on Earth* did exist, we would need a separate version for every culture. It is not enough for children to learn how to think. They must also learn specific intellectual skills valued by their culture.

Like Piaget, Vygotsky believed that children actively seek to discover new principles. However, Vygotsky emphasized that many of a child's most important “discoveries” are guided by skillful tutors. Psychologists David Shaffer and Katherine Kipp (2010) offer the following example:

Tonya, a 4-year-old, has just received her first jigsaw puzzle as a birthday present. She attempts to work the puzzle but gets nowhere until her father comes along, sits down beside her, and gives her some tips. He suggests that it would be a good idea to put together the corners first, points to the pink area at the edge of one corner piece, and says, “Let's look for another pink piece.” When Tonya seems frustrated, he places two interlocking pieces near each other so that she will notice them, and when Tonya succeeds, he offers words of encouragement. As Tonya gradually gets the hang of it, he steps back and lets her work more and more independently (p. 283).

Interactions like this are most helpful when they take place within a child's **zone of proximal development**.

What did Vygotsky mean by that? The word *proximal* means close or nearby. Vygotsky realized that, at any given time, some tasks are just beyond a child's reach. The child is close to having the mental skills needed to do the task, but it is a little too complex to be mastered alone. However, children working within this zone can make rapid progress if they receive sensitive guidance from a skilled partner (LeBlanc & Bearison, 2004). (Notice that this is similar to the one-step-ahead strategy described earlier.)

Vygotsky also emphasized a process he called **scaffolding**. A scaffold is a framework or temporary support. Vygotsky believed that adults help children learn how to think by “scaffolding,” or supporting, their attempts to solve problems or discover principles (Daniels, 2005). To be most effective, scaffolding must be responsive to a child's needs. For example, as Tonya's father helped her with the puzzle, he tailored his hints and guidance to match her evolving abilities. The two of them worked together, step by step, so that Tonya could better understand how to assemble a puzzle. In a sense, Tonya's father set up a series of temporary bridges that helped her move into new mental territory. As predicted by Vygotsky's theory, the reading skills of 8- to 10-year-old children are closely related to the amount of verbal scaffolding their mothers provided at ages 3 and 4 (Dieterich et al., 2006).

During their collaborations with others, children learn important cultural beliefs and values. For example, imagine that a boy wants to know how many baseball cards he has. His mother helps him stack and count the cards, moving each card to a new stack as they count it. She then shows him how to write

the number on a slip of paper so he can remember it. This teaches the child not only about counting, but also that writing is valued in our culture. In other parts of the world, a child learning to count might be shown how to make notches on a stick or tie knots in a cord.

Implications

Vygotsky saw that grown-ups play a crucial role in what children know. As they try to decipher the world, children rely on adults to help them understand how things work. Vygotsky further noticed that adults unconsciously adjust their behavior to give children the information they need to solve problems that interest the child. In this way, children use adults to learn about their culture and society (Gredler & Shields, 2008; LeBlanc & Bearison, 2004).

Knowledge Builder

Cognitive Development in Childhood

RECITE

Match each item with one of the following stages.

- A. Sensorimotor B. Preoperational C. Concrete operational
D. Formal operations

- _____ egocentric thought
- _____ abstract or hypothetical
- _____ purposeful movement
- _____ intuitive thought
- _____ conservation
- _____ reversibility thought
- _____ object permanence
- _____ nonverbal development
- Assimilation refers to applying existing thought patterns or knowledge to new situations. T or F?
- Newer methods for testing infants' thinking abilities frequently make note of whether an infant is _____ by seemingly _____ events.
- Vygotsky called the process of providing a temporary framework of supports for learning new mental abilities _____.

REFLECT

Think Critically

- In Western cultures, children as young as age 4 can understand that other people have mental states that differ from their own. In other words, they have developed a *theory of mind*. Is this ability uniquely Western, or might children from other cultures also develop a theory of mind?

Self-Reflect

You are going to make cookies with children of various ages. See if you can name each of Piaget's stages and give an example of what a child in that stage might be expected to do.

You have been asked to help a child learn to use a calculator to do simple addition. How would you go about identifying the child's zone of proximal development for this task? How would you scaffold the child's learning?

Answers: 1. B, 2. D, 3. A, 4. B, 5. C, 6. C, 7. A, 8. A, 9. T, 10. surprised, impossible, 11. scaffolding, 12. All humans need to be able to base their actions on their understanding of the intentions, desires, and beliefs of others. In fact, children from Micronesia, a group of small islands in the Pacific Ocean, also develop a theory of mind at around 4 years of age (Oberle, 2009).

Adolescence and Young Adulthood—The Best of Times, the Worst of Times

Gateway Question 3.7: Why is the transition from adolescence to adulthood especially challenging?

Adolescence and young adulthood is a time of change, exploration, exuberance, and youthful searching. It can also be a time of worry and problems, especially in today's world. It might even be fair to describe this period as "the best of times, the worst of times." During adolescence, a person's identity and moral values come into sharper focus, even as the transition to adulthood is occurring at ever-later ages.

Adolescence is the culturally defined period between childhood and adulthood. Socially, the adolescent is no longer a child, yet not quite an adult. Almost all cultures recognize this transitional status. However, the length of adolescence varies greatly from culture to culture. For example, most 14-year-old girls in North America live at home and go to school. In contrast, many 14-year-old females in rural villages of many poorer countries are married and have children. In our culture, 14-year-olds are adolescents. In others, they may be adults.

Is marriage the primary criterion for adult status in North America? No, it's not even one of the top three criteria. Today, the most widely accepted standards are: (1) taking responsibility for oneself, (2) making independent decisions, and (3) becoming financially independent. In practice, this typically means breaking away from parents by taking a job and setting up a separate residence (Arnett, 2010).

Puberty

Many people confuse adolescence with puberty. However, puberty is a *biological* event, not a social status. During **puberty**, hormonal changes promote rapid physical growth and sexual maturity. Biologically, most people reach reproductive maturity in the early teens. Social and intellectual maturity, however, may lie years ahead. Young adolescents often make decisions that affect their entire lives, even though they are immature mentally and socially. The tragically high rates of teenage pregnancy and drug abuse are prime examples. Despite such risks, most people do manage to weather adolescence without developing any serious psychological problems (Rathus, 2011).

Zone of proximal development Refers to the range of tasks a child cannot yet master alone, but that she or he can accomplish with the guidance of a more capable partner.

Scaffolding The process of adjusting instruction so that it is responsive to a beginner's behavior and supports the beginner's efforts to understand a problem or gain a mental skill.

Adolescence The culturally defined period between childhood and adulthood.

Puberty The biologically defined period during which a person matures sexually and becomes capable of reproduction.

Human Diversity

Ethnic Diversity and Identity

Ethnic heritage is an important aspect of personal identity (Weisskirch, 2005). For adolescents of ethnic descent, the question is often not just “Who am I?” Rather, it is “Who am I at home? Who am I at school? Who am I with friends from my neighborhood?”

As ethnic minorities in America continue to grow in status and prominence, adolescents are less and less likely to feel rejected or excluded because of their ethnic heritage as they try to find their place in society. This is fortunate because ethnic adolescents have often faced degrading stereotypes concerning their intelligence, sexuality, so-

cial status, manners, and so forth. The result can be lowered self-esteem and confusion about roles, values, and personal identity (Charmaraman & Grossman, 2010). At the same time, the increasingly multicultural nature of contemporary American society raises new questions for adolescents about what it means to be American (Schwartz, 2008).

In forming an identity, adolescents of ethnic descent face the question of how they should think of themselves. Is Lori an American or a Chinese American or both? Is Jaime a Latino, a Chicano, or a Mexican American?

The answer typically depends on how strongly adolescents identify with their family and ethnic community. Teens who take pride in their ethnic heritage have higher self-esteem, a better self-image, and a stronger sense of personal identity (Roberts et al., 1999; Tse, 1999). They are also less likely to engage in drug use (Marsiglia et al., 2004) or violent behavior (French, Kim, & Pillado, 2006).

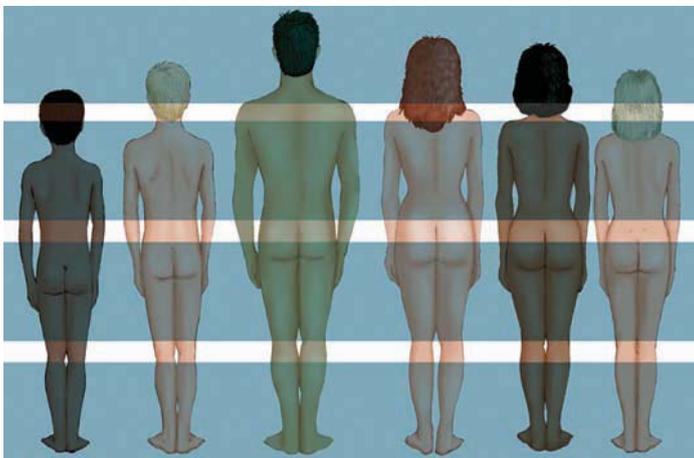
Group pride, positive models, and a more tolerant society could do much to keep a broad range of options open to *all* adolescents.

How much difference does the timing of puberty make? For boys, maturing early is generally beneficial. Typically, it enhances their self-image and gives them an advantage socially and athletically. Early-maturing boys tend to be more relaxed, dominant, self-assured, and popular. However, early puberty does carry some risks because early-maturing boys are also more likely to get into trouble with drugs, alcohol, and antisocial behavior (Steinberg, 2001).

For girls, the advantages of early maturation are less clear-cut. In elementary school, fast-maturing girls are *less* popular and have poorer self-images, perhaps because they are larger and heavier than their classmates (Deardorff et al., 2007). This is a growing problem as more American girls are reaching puberty at earlier ages (Biro et al., 2010). By junior high, however, early development

includes sexual features. This leads to a more positive body image, *greater* peer prestige, and adult approval (Brooks-Gunn & Warren, 1988). Early-maturing girls tend to date sooner and are more independent and more active in school. However, like their male counterparts, they are also more often in trouble at school and more likely to engage in early sex (Negrieff & Trickett, 2010).

As you can see, there are costs and benefits associated with early puberty. One added cost of early maturation is that it may force premature identity formation. When Samantha is a teenager and she begins to look like an adult, she may be treated like an adult. Ideally, this change can encourage greater maturity and independence. However, if the search for identity ends too soon, it may leave Samantha with a distorted, poorly formed sense of self (● Figure 3.18).



● **Figure 3.18** Dramatic differences in physical size and maturity are found in adolescents of the same age. The three boys pictured are all 16, the three girls are all 13. Maturation that occurs earlier or later than average can affect the “search for identity.” (Adapted from “Growing Up” by J. M. Tanner. Copyright © September 1973 by Scientific American, Inc. All rights reserved. Reprinted with permission of Nelson Prentiss)

The Search for Identity

Identity formation is a key challenge faced by adolescents (Schwartz, 2008). Of course, problems of identity occur at other times too. But in a very real sense, puberty signals that it’s time to begin forming a new, more mature self-image (Rathus, 2011). Many problems stem from unclear standards about the role adolescents should play within society. Are they adults or children? Should they be autonomous or dependent? Should they work or play? Such ambiguities make it difficult for young people to form clear images of themselves and of how they should act.

Answering the question “Who am I?” is also spurred by cognitive development. After adolescents have attained the stage of formal operations, they are better able to ask questions about their place in the world and about morals, values, politics, and social relationships. Then too, being able to think about hypothetical possibilities allows the adolescent to contemplate the future and ask more realistically, “Who will I be?” (Côté, 2006b). (See “Ethnic Diversity and Identity.”)

Critical Thinking

The Twixters

As you read this text, we encourage you to reflect on new ideas and concepts by thinking critically about them. Consider, for example, the term *adulthood*. Is becoming an adult strictly a biological event? Meet 22-year-old Kirsten:

“When our mothers were our age, they were engaged....They at least had some idea what they were going to do with their lives....I, on the other hand, will have a dual degree in majors that are ambiguous at best and impractical at worst (English and political science), no ring on my finger and no idea who I am, much less what I want to do....I realize that having nothing ahead to count on means I now have to count on myself;

that having no direction means forging one of my own” (Page, 1999).

Kirsten is a “twixter,” or an emerging adult: twentysomething, still living at home, not yet married, with no children, and no settled career. Indeed, it is no longer uncommon to meet 27-year-olds who still live at home, have not settled into careers, or formed committed relationships. In England, twixters are called “kippers” (Kids In Parents’ Pockets Eroding Retirement Savings). In Australia, they are “boomerang kids” (they always come back home). And in Germany they are “nesthocker” (nest squatters). Are such people still adolescents who are taking longer to find their identity? Or are they young adults avoiding their need to enter the adult world?

Are they self-indulgent individuals trapped in a “maturity gap” (Galambos, Barker, & Tilton-Weaver, 2003)?

According to psychologist Jeffrey Arnett, emerging adulthood is increasingly common in affluent Westernized cultures that allow young people to take longer to settle into their adult roles (Arnett, 2004). However, in less affluent countries, as in poorer parts of America, most adolescents continue to “become adults” at much younger ages (Arnett & Galambos, 2003). Thus, words like *adolescent* or *adulthood* cannot be defined solely in terms of physical maturation. Socio-cultural factors also play a role in defining when we stop being children or become adults (Arnett, 2010).



Emerging Adulthood

Today the challenge of identity formation is further complicated by the fact that more and more young people are deferring young adulthood, preferring to prolong identity explorations into their twenties before they commit to long-term choices in love and work (Arnett, 2010). Western industrialized societies, like the United States and Canada, are becoming increasingly tolerant of **emerging adulthood**, a socially tolerated period of extended adolescence (Arnett, 2010; Côté, 2006a). (See “The Twixters.”)

Samantha may live with Carol and David until her mid-twenties, delaying her transition to adulthood. Alternatively, she may make the transition to young adulthood during the traditional 18-to-21 period. Regardless, she will eventually face the primary adult issues of marriage, children, and career. How she manages,

especially in her core relationships, will determine whether she feels a sense of intimacy or feels isolated from others.

In many ways adolescence and young adulthood are more emotionally turbulent than midlife or old age. One important aspect of the emotional turbulence of adolescence and young adulthood is the struggle with right and wrong—in other words, the need to develop moral values.

Emerging adulthood A socially tolerated period of extended adolescence now quite common in Western societies.

Moral Development— Growing a Conscience

Gateway Question 3.8: *How do we develop morals and values?*

A person with a terminal illness is in great pain. She is pleading for death. Should extraordinary medical efforts be made to keep her alive? A friend of yours desperately needs to pass a test and asks you to help him cheat. Will you do it? These are *moral* questions, or questions of conscience.

Moral development starts in childhood and continues into adulthood (Turiel, 2006). Through this process, we acquire values, beliefs, and thinking patterns that guide responsible behavior (King, 2009). Moral values are especially likely to come into sharper focus during adolescence and the transition to adulthood, as capacities for self-control and abstract thinking increase (Hart & Carlo, 2005). Let's take a brief look at this interesting aspect of personal development.

Levels of Moral Development

How are moral values acquired? In an influential account, psychologist Lawrence Kohlberg (1981) held that we learn moral values through thinking and reasoning. To study moral development, Kohlberg posed dilemmas to children of different ages. The following is one of the moral dilemmas he used (Kohlberg, 1969, adapted):

A woman was near death from cancer, and there was only one drug that might save her. It was discovered by a druggist who was charging 10 times what it cost to make the drug. The sick woman's husband could pay only \$1,000, but the druggist wanted \$2,000. He asked the druggist to sell it cheaper or to let him pay later. The druggist said no. So the husband became desperate and broke into the store to steal the drug for his wife. Should he have done that? Was it wrong or right? Why?

Each child was asked what action the husband should take. Kohlberg classified the reasons given for each choice and identified three levels of moral development. Each is based not so much on the choices made, but on the reasoning used to arrive at a choice.

At the lowest, **preconventional level**, moral thinking is guided by the consequences of actions (punishment, reward, or an exchange of favors). For example, a person at this level might reason, "The man shouldn't steal the drug because he could get caught and sent to jail" (avoiding punishment) or "It won't do him any good to steal the drug because his wife will probably die before he gets out of jail" (self-interest).

At the second, **conventional level**, reasoning is based on a desire to please others or to follow accepted authority, rules, and values. For example, a person at this intermediate level might say, "He shouldn't steal the drug because others will think he is a thief. His wife would not want to be saved by thievery" (avoiding disapproval) or "Although his wife needs the drug, he should not break the law to get it. Everyone has to obey the law. His wife's condition does not justify stealing" (traditional morality of authority).

At the highest, **postconventional level**, moral behavior is directed by self-chosen ethical principles that tend to be general, comprehensive, or universal. People at this level place high value on justice, dignity, and equality. For example, a highly principled person might say, "He should steal the drug and then inform the authorities that he has done so. He will have to face a penalty, but he will have saved a human life" (self-chosen ethical principles).

Does everyone eventually reach the highest level? People advance at different rates, and many fail to reach the postconventional level of moral reasoning. In fact, some may not even reach the conventional level. For instance, a significant number of men in their first-year of college think unwanted sexual aggression is acceptable (Tatum & Foubert, 2009).

The preconventional level is most characteristic of young children and delinquents (Forney, Forney, & Cruisinger, 2005). Conventional, group-oriented morals are typical of older children and most adults. Kohlberg estimated that only about 20 percent of the adult population achieves postconventional morality, representing self-direction and higher principles. (It would appear that few of these people enter politics!)

Developing a "moral compass" is an important part of growing up. Many of the choices we make every day involve fundamental questions of right and wrong. The ability to think clearly about such questions is essential to becoming a responsible adult.

Justice or Caring?

Carol Gilligan (1982) pointed out that Kohlberg's system is concerned mainly with *justice*. Based on studies of women who faced real-life dilemmas, Gilligan argued that there is also an ethic of *caring* about others. As one illustration, Gilligan presented the following story to 11- to 15-year-old American children:

Seeking refuge from the cold, a porcupine asked to share a cave for the winter with a family of moles. The moles agreed. But, because the cave was small, they soon found they were being scratched each time the porcupine moved about. Finally, they asked the porcupine to leave. But the porcupine refused, saying, "If you moles are not satisfied, I suggest that you leave."

Boys who read this story tended to opt for justice in resolving the dilemma: "It's the moles' house. It's a deal. The porcupine leaves." In contrast, girls tended to look for solutions that would keep all parties happy and comfortable, such as "Cover the porcupine with a blanket."

Gilligan's point is that male psychologists have, for the most part, defined moral maturity in terms of justice and autonomy. From this perspective, a woman's concern with relationships can look like a weakness rather than a strength. (A woman who is concerned about what pleases or helps others would be placed at the conventional level in Kohlberg's system.) But Gilligan believes that caring is also a major element of moral development, and she suggests that males may lag in achieving it (Botes, 2000; Gilligan & Attanucci, 1988).

Does the evidence support Gilligan's position? Several studies have found little or no difference in men's and women's overall moral reasoning abilities (Glover, 2001; Levenson, 2009). Indeed, both

men and women may use caring *and* justice to make moral decisions. The moral yardstick they use appears to depend on the situation they face (Wark & Krebs, 1996). Just the same, Gilligan deserves credit for identifying a second major way in which moral choices are made. It can be argued that our best moral choices combine justice and caring, reason and emotion—which may be what we mean by wisdom (Pasupathi & Staudinger, 2001).

graduating from school, voting for the first time, getting married, watching a child leave home (or move back!), the death of a parent, becoming a grandparent, retirement, and one’s own death. Thus far, we have traced Samantha’s progress through childhood, adolescence, and young adulthood. What challenges lie ahead for her?

Knowledge Builder

Adolescence, Young Adulthood, and Moral Development

RECITE

1. In North America, the primary criterion for the transition from adolescence to adulthood is marriage. T or F?
2. Identity formation is spurred by _____ and _____.
3. According to Jeffrey Arnett, the trend in affluent Westernized cultures towards allowing young people to take longer to settle into their adult roles is best referred to as
 - a. emerging adulthood
 - b. hurried childhood
 - c. a maturity gap
 - d. extended adolescence
4. According to Kohlberg, the conventional level of moral development is marked by a reliance on outside authority. T or F?
5. Self-interest and avoiding punishment are elements of postconventional morality. T or F?
6. About 80 percent of all adults function at the postconventional level of moral reasoning. T or F?
7. Gilligan regards gaining a sense of justice as the principal basis of moral development. T or F?

REFLECT

Think Critically

8. Are labels like “adolescent” or “young adult” reflective of heredity or environment?

Self-Reflect

To what extent does the concept of identity formation apply to your own experience during adolescence?

Do you know any emerging adults? (Are you one?) Do you think emerging adults are adolescents taking longer to find their identity or young adults avoiding their need to establish themselves in the world of adults?

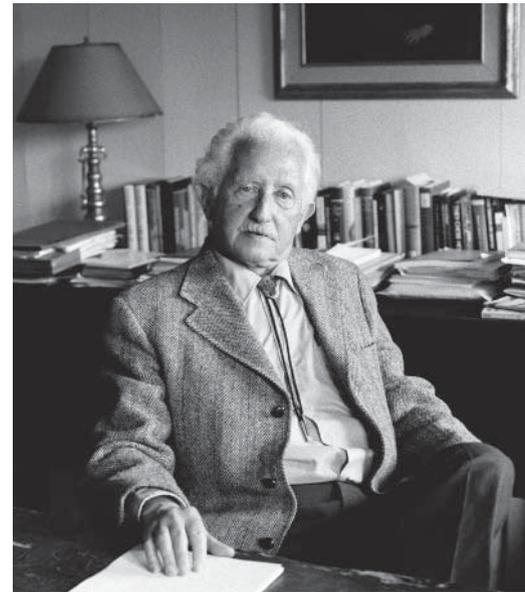
At what stage of moral development do you think most terrorists function?

Answers: 1. F 2. puberty, cognitive development 3. a 4. T 5. F 6. F 7. F 8. Environment, rather than heredity, is the better answer. Even better, the meanings of terms like “adolescence” or “adult” vary considerably from culture to culture, indicating that it is really a matter of definition (Côté, 2006 a,b).

Erikson’s Psychosocial Theory

Perhaps the best way to get a preview of Samantha’s life is to consider some of the major psychological milestones and challenges she is likely to encounter. Broad similarities can be found in the life stages of infancy, childhood, adolescence, young adulthood, middle adulthood, and old age. Each developmental stage confronts a person with new **developmental tasks**, specific challenges that must be mastered for optimal development. Examples are learning to read in childhood, adjusting to sexual maturity in adolescence, and establishing a vocation as an adult.

In an influential book entitled *Childhood and Society*, personality theorist Erik Erikson (1903–1994) suggests that we face a specific *psychosocial dilemma*, or “crisis,” at each stage of life. A



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Personality theorist Erik Erikson (1903–1994) is best known for his life-stage theory of human development.

The Story of a Lifetime—Rocky Road or Garden Path?

Gateway Question 3.9: *What are the typical tasks and dilemmas through the life span?*

Every life is marked by a number of developmental milestones (Kail & Cavanaugh, 2010). These are notable events, markers, or turning points in personal development. Some examples include

- Moral development** The development of values, beliefs, and thinking abilities that act as a guide regarding what is acceptable behavior.
- Preconventional moral reasoning** Moral thinking based on the consequences of one’s choices or actions (punishment, reward, or an exchange of favors).
- Conventional moral reasoning** Moral thinking based on a desire to please others or to follow accepted rules and values.
- Postconventional moral reasoning** Moral thinking based on carefully examined and self-chosen moral principles.
- Developmental task** Any skill that must be mastered, or personal change that must take place, for optimal development.

TABLE 3.3 Erikson's Psychosocial Dilemmas

Age	Characteristic Dilemma
Birth to 1 year	Trust versus mistrust
1–3 years	Autonomy versus shame and doubt
3–5 years	Initiative versus guilt
6–12 years	Industry versus inferiority
Adolescence (12–19 years)	Identity versus role confusion
Young adulthood (20–34 years)	Intimacy versus isolation
Middle adulthood (35–64 years)	Generativity versus stagnation
Late adulthood (65 years and older)	Integrity versus despair

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psychosocial dilemma is a conflict between personal impulses and the social world. Resolving each dilemma creates a new balance between a person and society. A string of “successes” produces healthy development and a satisfying life. Unfavorable outcomes throw us off balance, making it harder to deal with later crises. Life becomes a “rocky road,” and personal growth is stunted.

■ Table 3.3 lists Erikson’s (1963) dilemmas.

What are the major developmental tasks and life crises? A brief description of each psychosocial dilemma follows.

Stage One, First Year of Life: Trust Versus Mistrust

During the first year of life, children are completely dependent on others. Erikson believes that a basic attitude of trust or mistrust is formed at this time. **Trust** is established when babies are given warmth, touching, love, and physical care. **Mistrust** is caused by inadequate or unpredictable care and by parents who are cold, indifferent, or rejecting. Basic mistrust may later cause insecurity, suspiciousness, or an inability to relate to others. Notice that trust comes from the same conditions that help babies become securely attached to their parents.

Stage Two, 1–3 Years: Autonomy Versus Shame and Doubt

In stage two, children express their growing self-control by climbing, touching, exploring, and trying to do things for themselves. David and Carol fostered Samantha’s sense of **autonomy** by encouraging her to try new skills. However, her first efforts were sometimes crude, involving spilling, falling, wetting, and other “accidents.” If David and Carol had ridiculed or overprotected Samantha, they might have caused her to feel **shameful** about her actions and **doubt** her abilities.

Stage Three, 3–5 Years: Initiative Versus Guilt

In stage three, children move beyond simple self-control and begin to take initiative. Through play, children learn to make plans and carry out tasks. Parents reinforce **initiative** by giving children freedom to play, ask questions, use imagination, and choose activities.

Feelings of **guilt** about initiating activities are formed if parents criticize severely, prevent play, or discourage a child’s questions.

Stage Four, 6–12 Years: Industry Versus Inferiority

Many events of middle childhood are symbolized by that fateful day when you first entered school. With dizzying speed, your world expanded beyond your family, and you faced a whole series of new challenges.

The elementary school years are a child’s “entrance into life.” In school, children begin to learn skills valued by society, and success or failure can affect a child’s feelings of adequacy. Children learn a sense of **industry** if they win praise for productive activities, such as building, painting, cooking, reading, and studying. If a child’s efforts are regarded as messy, childish, or inadequate, feelings of **inferiority** result. For the first time, teachers, classmates, and adults outside the home become as important as parents in shaping attitudes toward oneself.

Stage Five, Adolescence: Identity Versus Role Confusion

As we have noted, adolescence is often a turbulent time. Erikson considers a need to answer the question “Who am I?” the primary task during this stage of life. As Samantha matures mentally and physically, she will have new feelings, a new body, and new attitudes. Like other adolescents, she will need to build a consistent **identity** out of her talents, values, life history, relationships, and the demands of her culture (Côté & Levine, 2002). Her conflicting experiences as a student, friend, athlete, worker, daughter, lover, and so forth must be integrated into a unified sense of self. Persons who fail to develop a sense of identity suffer from **role confusion**, an uncertainty about who they are and where they are going.

Stage Six, Young Adulthood: Intimacy Versus Isolation

In stage six, the individual feels a need for *intimacy* in his or her life. After establishing a stable identity, a person is prepared to share meaningful love or deep friendship with others (Beyers & Seiffge-Krenke, 2010). By **intimacy**, Erikson means an ability to care about others and to share experiences with them. In line with Erikson’s view, 75 percent of college-age men and women rank a good marriage and family life as important adult goals (Bachman & Johnson, 1979). And yet, marriage or sexual involvement is no guarantee of intimacy: Many adult relationships remain shallow and unfulfilling. Failure to establish intimacy with others leads to a deep sense of **isolation**—feeling alone and uncared for in life. This often sets the stage for later difficulties.

Stage Seven, Middle Adulthood: Generativity Versus Stagnation

According to Erikson, an interest in guiding the next generation provides emotional balance in middle adulthood. Erikson called this quality **generativity**. It is expressed by caring about oneself,



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According to Erikson, an interest in future generations characterizes optimal adult development.

one's children, and future generations. Generativity may be achieved by guiding one's own children or by helping other children (as a teacher or coach, for example). Productive or creative work can also express generativity. In any case, a person must broaden his or her concerns and energies to include the welfare of others and society as a whole. Failure to do this is marked by a **stagnant** concern with one's own needs and comforts. Life loses meaning, and the person feels bitter, dreary, and trapped (Friedman, 2004).

Stage Eight, Late Adulthood: Integrity Versus Despair

Late adulthood is a time of reflection. According to Erikson, when Samantha grows old, she must be able to look back over her life with acceptance and satisfaction. People who have lived richly and responsibly develop a sense of **integrity**, or self-respect. This allows them to face aging and death with dignity. If previous life events are viewed with regret, the elderly person experiences **despair**, or heartache and remorse. In this case, life seems like a series of missed opportunities. The person feels like a failure and knows it's too late to reverse what has been done. Aging and the threat of death then become sources of fear and depression.

The Whole Human

To squeeze a lifetime into a few pages, we had to ignore countless details. Although much is lost, the result is a clearer picture of an entire life cycle. Is Erikson's description, then, an exact map of Samantha's past and her future—or your own? Probably not. Still, psychosocial dilemmas are major events in many lives. Knowing about them may allow you to anticipate typical trouble spots in your own life. You may also be better prepared to understand the problems and feelings of friends and relatives at various points in the life cycle.

Middle and Later Adulthood— You're an Adult Now!

Gateway Question 3.10: What is involved in well-being during middle and later adulthood?

Although Erikson's dilemmas extend into adulthood, they are not the only challenges adults face, as we'll discuss in this section.

Other Challenges of Adulthood

Middle-aged adults (those aged from about 35 to 64) and *later adults* (those aged 65 and above) face life challenges such as financial pressures, legal conflicts, and personal tragedies, to name but a few. However, most challenges of adulthood revolve around health, work, marriage, children, and parents (Santrock, 2010).

Health

David just came back from his physiotherapy appointment. He put his knee out in a game of touch football (he could swear the other guy didn't just "touch" him!). A high school football star, 40-year-old David has encountered the obvious: he is getting older. Although some adults face far more serious health issues, from heart attacks to cancer, every adult faces the routine wear and tear of aging. How one deals with the inevitable slow declines of adulthood strongly influences that adult's degree of life satisfaction (Lachman, 2004). Fortunately, most of the time, declines happen slowly enough that they can be offset by increased life experience. Most adults learn to work "smarter," both physically and mentally (Miller & Lachman 2000).

Work

The work adults do—as homemakers, volunteers, hourly workers, or in careers—is also critical to feeling successful (Sterns & Huyck, 2001). While peak earnings commonly occur during these years, growing expenses may continue to create financial pressures, from

- Psychosocial dilemma** A conflict between personal impulses and the social world.
- Trust versus mistrust** A conflict early in life about learning to trust others and the world.
- Autonomy versus shame and doubt** A conflict created when growing self-control (autonomy) is pitted against feelings of shame or doubt.
- Initiative versus guilt** A conflict between learning to take initiative and overcoming feelings of guilt about doing so.
- Industry versus inferiority** A conflict in middle childhood centered on lack of support for industrious behavior, which can result in feelings of inferiority.
- Identity versus role confusion** A conflict of adolescence involving the need to establish a personal identity.
- Intimacy versus isolation** The challenge of overcoming a sense of isolation by establishing intimacy with others.
- Generativity versus stagnation** A conflict of middle adulthood in which self-interest is countered by an interest in guiding the next generation.
- Integrity versus despair** A conflict in old age between feelings of integrity and the despair of viewing previous life events with regret.

child care to tuition fees for children and from rent to mortgages. This is one reason why career difficulties and unemployment can pose such serious challenges to adult well-being. Another reason, of course, is that many adults derive much of their identity from their work (Santrock, 2010).

Marriage, Children, and Parents

Most adult Americans identify their social relationships—especially with children, spouses, and parents—as another important aspect of adult life (Markus et al., 2004). Creating and sustaining social relationships can involve working through the stresses of child-rearing, becoming “empty nesters” when children move away, becoming grandparents, experiencing marital strife or divorce, living as singles or in blended families, seeing parents grow old, need support, and die, to mention some of the more common social challenges faced by adults.

A Midlife Crisis?

Don't people face a “midlife crisis” at this point in their lives? Although adulthood brings its fair share of life's challenges, only about a quarter of men and women believe they have experienced a midlife crisis (Wethington, Kessler, & Pixley, 2004). It is more common to make a “midcourse correction” at midlife than it is to survive a “crisis” (Freund & Ritter, 2009; Lachman, 2004). Ideally, the midlife transition involves reworking old identities, achieving valued goals, finding one's own truths, and preparing for old age. Taking stock may be especially valuable at midlife, but reviewing past choices to prepare for the future is helpful at any age. For some people, difficult turning points in life can serve as “wake-up calls” that create opportunities for personal growth (Weaver, 2009; Wethington, 2003).

Facing the Challenges of Adulthood

How do people maintain a state of well-being as they run the gauntlet of modern life? Psychologist Carol Ryff believes that well-being during adulthood has six elements (Ryff & Singer, 2009; van Dierendonck et al., 2008):

1. Self-acceptance
2. Positive relations with others
3. Autonomy (personal freedom)
4. Environmental mastery
5. A purpose in life
6. Continued personal growth

Ryff found that, for many adults, age-related declines are offset by positive relationships and greater mastery of life's demands (Ryff & Singer, 2009). Thus, sharing life's joys and sorrows with others, coupled with a better understanding of how the world works, can help carry people through midlife and into their later years (Lachman et al., 2008; Ryff, Singer, & Palmersheim, 2004). It is important to note that despite the emphasis on youth in our culture, middle age and beyond can be a rich period of life in

which people feel secure, happy, and self-confident (Rubenstein, 2002).

Old Age

After the late 50s, physical aging complicates personal development. However, it is wrong to believe that most elderly people are sickly, infirm, or senile. (Nowadays, 60 is the new 40, an idea with which both of your authors wholeheartedly agree!) Only about 5 percent of those older than 65 are in nursing homes. Mentally, many elderly persons are at least as capable as the average young adult. On intellectual tests, top scorers over the age of 65 match the average for men younger than 35. What sets these silver-haired stars apart? Typically they are people who have continued to work and remain intellectually active (Hooyman & Kiyak, 2011; Salthouse, 2004). *Gerontologist*—a psychologist who studies aging and the aged—Warner Schaie (1994, 2005) found that you are most likely to stay mentally sharp in old age if:

1. You remain healthy.
2. You live in a favorable environment. (You are educated and have a stimulating occupation, an above-average income, and an intact family.)
3. You are involved in intellectually stimulating activities (reading, travel, cultural events, continuing education, clubs, and professional associations).
4. You have a flexible personality.
5. You are married to an intelligent spouse.
6. You maintain your perceptual processing speed by staying active.
7. You were satisfied with your accomplishments in midlife.

A shorter summary of this list is “Those who live by their wit die with their wits.”

Successful Aging

What are the keys to successful aging? The keys to successful aging are not unlike the elements of well-being at midlife. The psychological characteristics shared by the healthiest, happiest older people are (de Leon, 2005; Vaillant, 2002):

1. Optimism, hope, and an interest in the future
2. Gratitude and forgiveness; an ability to focus on what is good in life
3. Empathy; an ability to share the feelings of others and see the world through their eyes
4. Connection with others; an ability to reach out, to give and receive social support

Actually, these are excellent guidelines for well-being at any stage of adulthood.

In summary, enlightened views of aging call for an end to the forced obsolescence of the elderly. As a group, older people represent a valuable source of skill, knowledge, and energy that we can't afford to cast aside. As we face the challenges of this planet's uncertain future, we need all the help we can get!



Alberto E. Rodriguez/Getty Images

At age 88, Betty White was named Associated Press Entertainer of the Year, in 2010. Shown here attending the premiere of her movie “You Again,” White’s 70 years as an entertainer show that aging does not inevitably bring an end to engaging in challenging activities.

Aging and Ageism

Ageism, which refers to discrimination or prejudice based on age, can oppress the young as well as the old (Bodner, 2009). For instance, a person applying for a job may just as well be told “You’re too young” as “You’re too old.” In some societies, ageism is expressed as respect for the elderly. In Japan, for instance, aging is seen as positive, and greater age brings more status and respect. In most Western nations, however, ageism tends to have a negative impact on older individuals.

Ageism is often expressed through patronizing language. Older people are frequently spoken to in an overly polite, slow, loud, and simple way implying that they are infirm, even when they are not (Nelson, 2005). Popular stereotypes of the “dirty old man,” “meddling old woman,” “senile old fool,” and the like also help perpetuate myths about aging. But such stereotypes are clearly wrong: A tremendous diversity exists among the elderly—ranging from the infirm to aerobic-dancing grandmothers.

In many occupations, older workers perform well in jobs that require *both* speed and skill. Of course, people do experience a gradual loss of *fluid abilities* (those requiring speed or rapid learning) as they age, but often this can be offset by many *crystallized abilities* (learned knowledge and skills), such as vocabulary and stored-up facts, which may actually improve—at least into the 60s (Schaie, 2005). Overall, very little loss of job performance occurs as workers grow older. In the professions, wisdom and expertise can usually more than compensate for any loss of mental quickness (Ericsson, 2000). Basing retirement solely on a person’s age makes little sense.

Death may be inevitable, but it can be faced with dignity and, sometimes, even humor. Mel Blanc’s famous sign-off, “That’s all folks,” is engraved on a marble headstone over his grave. Blanc was the voice of Bugs Bunny, Porky Pig, and many other cartoon characters.



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➤ Death and Dying— ➤ The Final Frontier

Gateway Question 3.11: *How do people typically react to death?*

“I’m not afraid of dying. I just don’t want to be there when it happens.”
Woody Allen

The statistics on death are very convincing: Everyone dies. In spite of this, most of us are poorly informed about a process that is as basic as birth. We have seen throughout this chapter that it is valuable to understand major trends in the course of development. With this in mind, let’s explore emotional responses to death, the inevitable conclusion of every life.

Reactions to Impending Death

Many people have little direct experience with death until they, themselves, are fairly old. It might seem that as people grow older they would fear death more. However, older persons actually have fewer death fears than younger people. Older people more often fear the *circumstances* of dying, such as pain or helplessness, rather than death itself (Thorson & Powell, 1990). These findings seem to show a general lack of death fears, but they may actually reflect a widespread denial of death. Notice how denial is apparent in the language used to talk about death: Often we speak of a dead person as having “passed away,” “expired,” “gone to God,” or “breathed one’s last.”

A highly influential account of emotional responses to death comes from the work of Elisabeth Kübler-Ross (1926–2004). Kübler-Ross was a *thanatologist* (THAN-ah-TOL-oh-jist), or a person who studies death. Over the years she spent hundreds of hours at the bedsides of the terminally ill, where she observed

Ageism Discrimination or prejudice based on a person’s age.

five basic emotional reactions to impending death (Kübler-Ross, 1975).

- 1. Denial and isolation.** A typical first reaction is to deny death's reality and isolate oneself from information confirming that death is really going to occur. Initially, the person may be sure that "It's all a mistake." "Surely," she or he thinks, "the lab reports have been mixed up or the doctor made an error." This sort of denial may proceed to attempts to avoid any reminder of the situation.
- 2. Anger.** Many dying individuals feel anger and ask, "Why me?" As they face the ultimate threat of having life torn away, their anger may spill over into rage toward the living. Even good friends may temporarily evoke anger because their health is envied.
- 3. Bargaining.** In another common reaction, the terminally ill bargain with themselves or with God. The dying person thinks, "Just let me live a little longer and I'll do anything to earn it." Individuals may bargain for time by trying to be "good" ("I'll never smoke again"), by righting past wrongs, or by praying that if they are granted more time they will dedicate themselves to their religion.
- 4. Depression.** As death draws near and the person begins to recognize that it cannot be prevented, feelings of futility, exhaustion, and deep depression may set in. The person realizes she or he will be separated from friends, loved ones, and the familiar routines of life, and this causes a profound sadness.
- 5. Acceptance.** If death is not sudden, many people manage to come to terms with dying and accept it calmly. The person who accepts death is neither happy nor sad but at peace with the inevitable. Acceptance usually signals that the struggle with death has been resolved. The need to talk about death ends, and silent companionship from others is frequently all the person desires.

Not all terminally ill persons display all these reactions, nor do they always occur in this order. Individual styles of dying vary greatly. Generally, there does tend to be a movement from initial shock, denial, and anger toward eventual acceptance. However, some people who seem to have accepted death may die angry and

raging against the inevitable. Conversely, the angry fighter may let go of the struggle and die peacefully. In general, one's approach to dying will mirror his or her style of living (Yedidia & MacGregor, 2001).

It is a mistake, then, to think that Kübler-Ross's list is a series of stages to go through in order or that there is something wrong if a person does not show all these emotions. Rather, the list describes typical reactions to impending death. Note, as well, that many of the same reactions accompany any major loss, be it divorce, loss of a home due to fire, death of a pet, or loss of a job.

Implications

How can I make use of this information? First, it can help both the dying and survivors to recognize and cope with periods of depression, anger, denial, and bargaining. Second, it helps to realize that close friends or relatives may feel many of the same emotions before or after a person's death because they, too, are facing a loss.

Perhaps the most important thing to recognize is that the dying person needs to share feelings with others and to discuss death openly. Too often, dying persons feel isolated and separated from others. Adults tend to "freeze up" with someone who is dying. For such people, thanatologist Kirsti Dyer (2001) has this advice:

- Be yourself and relate person to person.
- Be ready to listen again and again.
- Be respectful.
- Be aware of feelings and nonverbal cues.
- Be comfortable with silence.
- Be genuine.
- Most of all, be there.

Today, many terminally ill individuals also benefit from *hospice* care, which can improve the quality of life in a person's final days. Hospices typically offer support, guidance, pain relief, and companionship (Broom & Cavenagh, 2010). In short, the dying person is made comfortable, and feels loved and respected (Lynn, 2001). The same is often true for the dying person's caregivers (Manslow & Vandenberghe, 2010). As each of us faces the end of life, to die well may be no less an accomplishment than to live well.

Knowledge Builder

Challenges Across the Life Span

RECITE

As a way to improve your memory, you might find it helpful to summarize Erikson's eight life stages and crises. Complete this summary and compare your answers to those given below.

Stage	Crisis	Favorable Outcome
First year of life	1. _____ vs. 2. _____	Faith in the environment and in others
Ages 1–3	Autonomy vs. 3. _____	Feelings of self-control and adequacy
Ages 3–5	4. _____ vs. guilt	Ability to begin one's own activities

Stage	Crisis	Favorable Outcome
Ages 6–12	Industry vs. 5. _____	Confidence in productive skills, learning how to work
Adolescence	6. _____ vs. role confusion	An integrated image of oneself as a unique person
Young adulthood	Intimacy vs. 7. _____	Ability to form bonds of love and friendship with others
Middle adulthood	Generativity vs. 8. _____	Concern for family, society, and future generations
Late adulthood	9. _____ vs. 10. _____	Sense of dignity and fulfillment, willingness to face death

- Nearly everyone experiences a midlife crisis sometime around age 40. T or F?
- After age 65, a large proportion of older people show significant signs of mental disability and most require special care. T or F?
- Job performance tends to decline rapidly in older workers. T or F?
- In the reaction that Kübler-Ross describes as bargaining, the dying individual asks, "Why me?" T or F?

REFLECT

Think Critically

- Trying to make generalizations about development throughout life is complicated by at least one major factor. What do you think it is?

Self-Reflect

See if you can think of a person you know who is facing one of Erikson's psychosocial dilemmas. Now see if you can think of specific people who seem to be coping with each of the other dilemmas.

Describe three instances of ageism you have witnessed.

Answers: 1. Trust 2. mistrust 3. shame or doubt 4. Initiative 5. inferiority 6. Identity 7. Isolation 8. stagnation 9. Integrity 10. despair 11. F 12. F 13. F 14. F 15. Different historical times. People born in various decades may have very different life experiences. This makes it difficult to identify universal patterns (Stewart & Ostrove, 1998).

Psychology in Action



Effective Parenting—Always Kiss Your Children Goodnight

Gateway Question 3.12: *How do effective parents discipline and communicate with their children?*

Authoritative parents help their children grow up with a capacity for love, joy, fulfillment, responsibility, and self-control through *positive parent-child interactions*. Positive interactions occur when parents spend enjoyable time encouraging their children in a loving and mutually respectful fashion (Dinkmeyer, McKay, & Dinkmeyer, 1997; Takeuchi & Takeuchi, 2008).

However, as any parent can tell you, it is all well and good to talk about positive interactions until little Johnny misbehaves (and he will, count on it!). As children mature and become more independent, parents must find ways to control their children's behavior ("No, you may not smear banana pudding on Daddy's face"). When parents fail to provide *discipline* (guidance regarding acceptable behavior), children become antisocial, aggressive,

and insecure. And yet, it is not easy to have a positive interaction while disciplining your child. This is one reason why overly permissive parents avoid disciplining children.

Effective discipline socializes a child without destroying the bond of love and trust between parent and child. Children should feel free to express their deepest feelings. However, this does not mean they can do whatever they please. Rather, the child is allowed to move freely within con-



sistent, well-defined boundaries for acceptable behavior.

Effective Discipline

Parents typically discipline children in one of three ways. **Power assertion** refers to physical punishment or a show of force, such as taking away toys or privileges. As an alternative, some parents use **withdrawal of love**, or withholding affection, by refusing to speak to a child, threatening to leave, rejecting the child, or otherwise acting as if the child is temporarily unlovable. **Management techniques** combine praise, rec-

Power assertion The use of physical punishment or coercion to enforce child discipline.

Withdrawal of love Withholding affection to enforce child discipline.

Management techniques Combining praise, recognition, approval, rules, and reasoning to enforce child discipline

ognition, approval, rules, reasoning, and the like to encourage desirable behavior. Each of these approaches can control a child's behavior, but their side effects differ considerably.

What are the side effects? Power-oriented techniques—particularly harsh or severe physical punishment—are associated with fear, hatred of parents, and a lack of spontaneity and warmth (Hergenbahn & Olson, 2009). Most children show no signs of long-term damage from spanking—if spanking is backed up by supportive parenting (Baumrind, Larzelere, & Cowan, 2002). However, emotional damage does occur if spankings are severe, frequent, or coupled with harsh parenting. In addition, frequent spanking tends to increase aggression, and it leads to *more* problem behaviors, not fewer (Aucoin, Frick, & Bodin, 2006; Thomas, 2004). After reviewing many studies, psychologist Elizabeth Gershoff (2002) concludes that parents should minimize spanking or avoid it entirely.

BRIDGES

Punishment also has important effects on learning. **For more tips on how to use punishment wisely, see Chapter 6, pages 227–228.**

Withdrawal of love produces children who tend to be self-disciplined. You could say that such children have developed a good conscience. Often, they are described as “model” children or as unusually “good.” But as a side effect, they are also frequently anxious, insecure, and dependent on adults for approval.

Management techniques also have limitations. Most important is the need to carefully adjust to a child's level of understanding. Younger children don't always see the connection between rules, explanations, and their own behavior. Nevertheless, management techniques receive a big plus in another area: There is a direct connection between discipline and a child's self-esteem.

How does discipline affect self-esteem? If you regard yourself as a worthwhile person, you have **self-esteem**. In school, children with high self-esteem tend to be more popular, cooperative, and successful in class. Children with low self-esteem are more withdrawn and tend to perform below average (Amato & Fowler, 2002).

Low self-esteem is related to physical punishment and the withholding of love. And why not? What message do children receive if

a parent beats them or tells them they are not worthy of love? Thus, it is best to minimize physical punishment and avoid withdrawal of love. In contrast, high self-esteem is promoted by management techniques. Children who feel that their parents support them emotionally tend to have high self-esteem (Amato & Fowler, 2002).

Can self-esteem ever get too high? Many modern parents try to “empower” their children by imposing few limits on behavior, making them feel special, and giving them everything they want (Mamen, 2004). But such good intentions can backfire, leaving parents with children who have developed an artificially high level of self-esteem and a sense of entitlement. That is, overly permissive parenting produces spoiled, self-indulgent children who have little self-control (Baumrind, 1991). Their sense of entitlement can lead them to bully other children to get their way or even to engage in criminal activity. As adults, such children may become addicted to seeking ways to enhance their self-esteem. For example, they may place excessive importance on being physically attractive, leading to stress, drug and alcohol use, and eating disorders (Crocker & Park, 2004).

Consistent Discipline Individual parents choose limits on behavior that are more “strict” or less “strict.” But this choice is less important than **consistency**—maintaining stable rules of conduct. Consistent discipline gives a child a sense of security and stability. Inconsistency makes the child's world seem insecure and unpredictable.

What does consistent discipline mean in practice? To illustrate the errors parents often make, let's consider a few examples of inconsistency (Fontenelle, 1989):

Saying one thing and doing something else. You tell the child, “Bart, if you don't eat your Brussels sprouts you can't have any dessert.” Then you feel guilty and offer him some dessert.

Making statements you don't mean. “If you don't quiet down, I'm going to stop the car and make you walk home.”

Responding differently to the same misbehavior. One day a child is sent to his room for fighting with his sister. The next day the fighting is overlooked.

Inconsistency gives children the message: “Don't believe what I say because I usually don't mean it.”

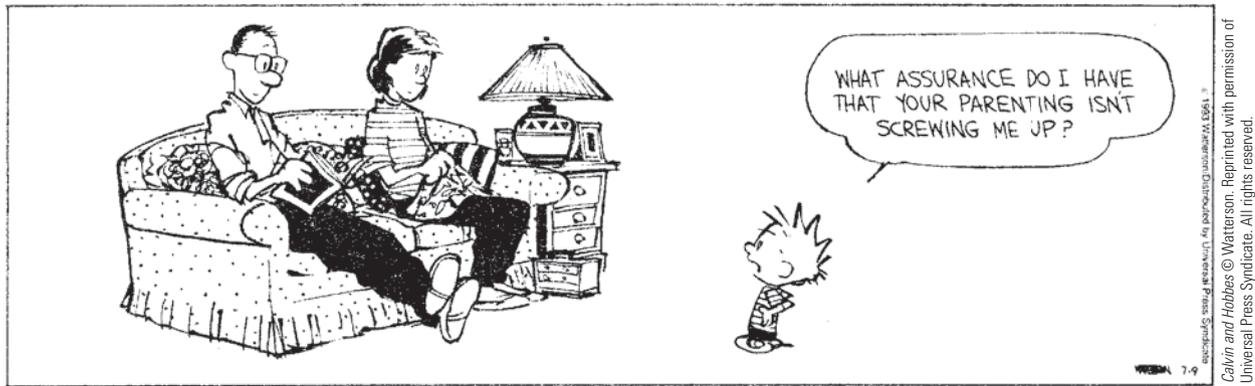
Using Discipline Constructively At one time or another, most parents use power assertion, withdrawal of love, or management techniques to control their children. Each mode of discipline has its place. However, physical punishment and withdrawal of love should always be used with caution. (Remember, too, that it is usually more effective to reward children when they are being good than it is to punish them for misbehavior.) Here are some guidelines:

1. State specifically what misbehavior you are punishing. Explain why you have set limits on this kind of conduct.
2. Parents should separate disapproval of the act from disapproval of the child. Instead of saying, “I'm going to punish you because *you are bad*,” say, “I'm upset about *what you did*.” Also remember that the message “I don't love you right now” can be more painful and damaging than any spanking.
3. Punishment should never be harsh or injurious. Don't physically punish a child while you are angry. If you do use physical punishment, reserve it for situations that pose an immediate danger to younger children; for example, when a child runs onto the street.
4. Spanking and other forms of physical punishment are not particularly effective for children younger than age 2. The child will only be confused and frightened. Spankings also become less effective after age 5 because they tend to humiliate the child and breed resentment.
5. Punishment, such as a scolding or taking away privileges, is most effective when done immediately. This is especially true for younger children.

After age 5, management techniques are the most effective form of discipline, especially techniques that emphasize communication and the relationship between parent and child (Bath, 1996).

Communicating Effectively with Children

Effective communication with children depends on *I-messages* and a reliance on *logical consequences*.



I-Messages Child psychologist Thomas Gordon (2000) believes that parents should send *I-messages* to their children rather than *you-messages*.

What's the difference? **You-messages** take the form of threats, name-calling, accusing, bossing, lecturing, or criticizing. Generally, you-messages tell children what's "wrong" with them. An **I-message** tells children what effect their behavior had on you. For example, after a hard day's work, Maria wants to sit down and rest awhile. She begins to relax with a newspaper when her 5-year-old daughter starts banging loudly on a toy drum. Many parents would respond with a you-message such as "You go play outside this instant" (bossing) or "Don't you ever make such a racket when someone is reading" (lecturing). Gordon suggests sending an I-message such as, "I am very tired, and I would like to read. I feel upset and can't read with so much noise." This forces the child to accept responsibility for the effects of her actions (Dinkmeyer, McKay, & Dinkmeyer, 1997).

Logical Consequences It is worth avoiding direct *power struggles*. Suppose a child refuses to eat. A parent would be better off not leading off with something like "I'm your parent. Now eat your supper." It is bet-

ter to recognize that some events automatically discourage misbehavior. For example, a child who refuses to eat dinner will get uncomfortably hungry (Fontenelle, 1989). In such instances, a child's actions have **natural consequences**, or intrinsic effects. Another possibility is to set up **logical consequences**, or rational and reasonable effects. For example, a parent might say, "You can play on your Wii once you've eaten your supper."

The concept of logical, parent-defined consequences can be combined with I-messages to handle many day-to-day instances of misbehavior. The key idea is to use an I-message to set up consequences and then give the child a choice to make: "Michelle, I'm trying to watch TV. You can settle down and watch with me or go play elsewhere. You decide which you'd rather do" (Dinkmeyer, McKay, & Dinkmeyer, 1997).

How could Maria have dealt with her 5-year-old—the one who was banging on a drum? A response that combines an I-message with logical consequences would be, "I would like for you to stop banging on that drum; otherwise, please take it outside or else I will put it away." If the child continues to bang on the drum inside the house, then she has caused the toy to be put

away. If she takes it outside, she has made a decision to play with the drum in a way that respects her mother's wishes. In this way, both parent and child have been allowed to maintain a sense of self-respect and a needless clash has been averted.

After you have stated consequences and let the child decide, be sure to respect the child's choice. If the child repeats the misbehavior, you can let the consequences remain in effect longer. But later, give the child another chance to cooperate.

With all child management techniques, remember to be firm, kind, consistent, respectful, and encouraging. And most of all, try every day to live the message you wish to communicate.

Self-esteem Regarding oneself as a worthwhile person; a positive evaluation of oneself.

Consistency With respect to child discipline, the maintenance of stable rules of conduct.

You-message Threatening, accusing, bossing, lecturing, or criticizing another person.

I-message A message that states the effect someone else's behavior has on you.

Natural consequences The effects that naturally tend to follow a particular behavior.

Logical consequences Reasonable consequences that are defined by parents.

Knowledge Builder

Effective Parenting

RECITE

1. Effective discipline gives children freedom within a structure of consistent and well-defined limits. T or F?
2. One good way to maintain consistency in child management is to overstate the consequences for misbehavior. T or F?

3. Spankings and other physical punishments are most effective for children under the age of 2. T or F?
4. Giving recognition for progress and attempts to improve is an example of parental _____.
5. I-messages are a gentle way of accusing a child of misbehavior. T or F?
6. In situations where natural consequences are unavailable or do not discourage misbehavior, parents should define logical consequences for a child. T or F?

REFLECT**Think Critically**

7. Several Scandinavian countries have made it illegal for parents to spank their own children. Does this infringe on the rights of parents?
8. If power assertion is a poor way to discipline children, why do so many parents use it?

Self-Reflect

What do you think are the best ways to discipline children? How would your approach be classified? What are its advantages and disadvantages?

Parents can probably never be completely consistent. Think of a time when your parents were inconsistent in disciplining you. How did it affect you?

Think of a you-message you have recently given a child, family member, roommate, or spouse. Can you change it into an I-message?

Answers: 1. T 2. F 3. T 4. encouragement 5. F 6. T 7. Such laws are based on the view that it should be illegal to physically assault any person, regardless of their age. Although parents may believe they have a "right" to spank their children, it can be argued that children need special protection because they are small, powerless, and dependent (Durrant & Janson, 2005). 8. Most parents discipline their children in the same ways that they themselves were disciplined. Parenting is a responsibility of tremendous importance, for which most people receive almost no training.



Chapter in Review Gateways to Human Development

Gateway QUESTIONS REVISITED

3.1 How do heredity and environment affect development?

3.1.1 Heredity (nature) and environment (nurture) are interacting forces that are both necessary for human development. However, caregivers can only influence environment.

3.1.2 The chromosomes and genes in each cell of the body carry hereditary instructions. Most characteristics are polygenic and reflect the combined effects of dominant and recessive genes.

3.1.3 Maturation of the body and nervous system underlies the orderly development of motor skills, cognitive abilities, emotions, and language. Many early skills are subject to the principle of readiness.

3.1.4 Prenatal development is influenced by environmental factors, such as various teratogens, including diseases, drugs, and radiation, as well as the mother's diet, health, and emotions.

3.1.5 During sensitive periods in development, infants are more sensitive to specific environmental influences.

3.1.6 Early perceptual, intellectual, or emotional deprivation seriously retards development, whereas deliberate enrichment of the environment has a beneficial effect on infants.

3.1.7 In general, environment sets a reaction range within which maturation unfolds.

3.1.8 Temperament is hereditary. Most infants fall into one of three temperament categories: easy children, difficult children, and slow-to-warm-up children.

3.1.9 A child's developmental level reflects heredity, environment, and the effects of the child's own behavior.

3.2 What can newborn babies do?

3.2.1 Infant development is strongly influenced by heredity. However, environmental factors such as nutrition, parenting, and learning are also important.

3.2.2 The human neonate has a number of adaptive reflexes, including the grasping, rooting, sucking, and Moro reflexes. Neonates begin to learn immediately, and they appear to be aware of the effects of their actions.

3.2.3 The rate of maturation varies from person to person. Also, learning contributes greatly to the development of basic motor skills.

3.2.4 Tests in a looking chamber reveal a number of visual preferences in the newborn. The neonate is drawn to bright lights and circular or curved designs.

3.2.5 Infants prefer human face patterns, especially familiar faces. In later infancy or early childhood, interest in the unfamiliar emerges.

3.2.6 Emotions develop in a consistent order, starting with generalized excitement in newborn babies. Three of the basic emotions—fear, anger, and joy—may be unlearned.

3.3 Of what significance is a child's emotional bond with adults?

3.3.1 Emotional attachment of human infants is a critical early event.

3.3.2 Infant attachment is reflected by separation anxiety. The quality of attachment can be classified as secure, insecure-avoidant, or insecure-ambivalent.

3.3.3 Secure attachment is fostered by consistent care from parents who are sensitive to a baby's signals and rhythms.

3.3.4 High-quality day care is not harmful and can even be helpful to preschool children. Low-quality care can be risky.

3.3.5 Meeting a baby's affectional needs is as important as meeting needs for physical care.

3.4 *How important are parenting styles?*

3.4.1 Three major parental styles are authoritarian, permissive, and authoritative (effective). Studies suggest that parental styles have a substantial impact on emotional and intellectual development. Authoritative parenting appears to benefit children the most.

3.4.2 Whereas mothers typically emphasize care giving, fathers tend to function as playmates for infants. Both caregiving styles contribute to the competence of young children.

3.4.3 Parenting styles vary across cultures. The ultimate success of various parenting styles depends on what culture or ethnic community a child will enter.

3.5 *How do children acquire language?*

3.5.1 Learning to use language is a cornerstone of early intellectual development. Language development proceeds from crying to cooing, then babbling, the use of single words, and then to telegraphic speech.

3.5.2 The underlying patterns of telegraphic speech suggest a biological predisposition to acquire language. This innate tendency is augmented by learning.

3.5.3 Pre-language communication between parent and child involves shared rhythms, nonverbal signals, and turn-taking.

3.5.4 Motherese or parentese is a simplified, musical style of speaking that parents use to help their children learn language.

3.6 *How do children learn to think?*

3.6.1 The intellect of a child is less abstract than that of an adult. Jean Piaget theorized that intellectual growth occurs through a combination of assimilation and accommodation.

3.6.2 Piaget also held that children mature through a fixed series of cognitive stages. The stages and their approximate age ranges are sensorimotor (0–2), preoperational (2–7), concrete operational (7–11), and formal operational (11–adult).

3.6.3 Caregivers should offer learning opportunities that are appropriate for a child's level of cognitive development.

3.6.4 Learning principles provide an alternate explanation that assumes cognitive development is continuous; it does not occur in stages.

3.6.5 Studies of infants under the age of 1 year suggest that they are capable of thought well beyond that observed by Piaget. Similarly, children begin to outgrow egocentrism as early as age 4.

3.6.6 Lev Vygotsky's sociocultural theory emphasizes that a child's mental abilities are advanced by interactions with more competent partners. Mental growth takes place in a child's zone of proximal development, in which a more skillful person may scaffold the child's progress.

3.7 *Why is the transition from adolescence to adulthood especially challenging?*

3.7.1 The timing of puberty can complicate the task of identity formation, a major task of adolescence.

3.7.2 Identity formation is even more challenging for adolescents of ethnic descent.

3.7.3 In Western industrialized societies, the transition into adulthood is further complicated as it is increasingly delayed well into the 20s.

3.8 *How do we develop morals and values?*

3.8.1 Developing mature moral standards is also an important task of adolescence.

3.8.2 Lawrence Kohlberg identified preconventional, conventional, and postconventional levels of moral reasoning.

3.8.3 Most people function at the conventional level of morality, but some never get beyond the selfish, preconventional level. Only a minority of people attain the highest, or postconventional level, of moral reasoning.

3.8.4 Carol Gilligan distinguished between Kohlberg's justice perspective and a caring perspective. Mature adult morality likely involves both.

3.9 *What are the typical tasks and dilemmas through the life span?*

3.9.1 Erik Erikson identified a series of challenges that occur across the life span. These range from a need to gain trust in infancy to the need to live with integrity in old age.

3.9.2 Successful resolution of the dilemmas produces healthy development whereas unsuccessful outcomes make it harder to deal with later crises.

3.10 *What is involved in well-being during middle and later adulthood?*

3.10.1 Physical aging starts early in adulthood. Every adult must find ways to successfully cope with aging.

3.10.2 Only a minority of people have a midlife crisis, but midlife course corrections are more common.

3.10.3 Well-being during adulthood consists of six elements: self-acceptance, positive relations with others, autonomy, environmental mastery, having a purpose in life, and continued personal growth.

3.10.4 Intellectual declines associated with aging are limited, at least through one's 70s. This is especially true of individuals who remain mentally active.

3.10.5 Successful lives are based on happiness, purpose, meaning, and integrity.

3.10.6 Ageism refers to prejudice, discrimination, and stereotyping on the basis of age. It affects people of all ages but is especially damaging to older people. Most ageism is based on stereotypes, myths, and misinformation.

3.11 *How do people typically react to death?*

3.11.1. Typical emotional reactions to impending death include denial, anger, bargaining, depression, and acceptance, but not necessarily in that order or in every case.

3.11.2 Death is a natural part of life. There is value in understanding it and accepting it.

3.12 *How do effective parents discipline and communicate with their children?*

3.12.1 Positive parent-child interactions occur when parents spend enjoyable time encouraging their children in a loving and mutually respectful fashion.

3.12.2 Effective parental discipline tends to emphasize child management techniques (especially communication), rather than power assertion or withdrawal of love. Effective parents allow

their children to express their feeling but place limits on their behavior.

3.12.3 Consistency is also an important aspect of effective parenting.

3.12.4 Much misbehavior can be managed by use of I-messages and the application of natural and logical consequences.

MEDIA RESOURCES

Web Resources

Internet addresses frequently change. To find an up-to-date list of URLs for the sites listed here, visit your Psychology CourseMate.

Heredity Versus Environment Read more about the interplay of nature and nurture.

Diving into the Gene Pool Learn more about modern genetics from the Exploratorium.

Human Genome Project Learn more about your human genetic heritage.

The Parent's Page Visit links for expectant couples and new parents.

Parenthood.com A comprehensive site for parents.

Crack Babies A photostory by Ken Kobre.

Harry Harlow Read more about Harry Harlow and his famous experiments on maternal deprivation in monkeys.

Attachment Theory Read more on attachment styles.

How to Choose a Daycare That's Right for Your Child An information resource about day care options.

Language Development In Children Much more information about language development in children.

How Does Your Child Hear and Talk? Discover a milestone chart for hearing and talking.

Speech & Language: Talk to Me Explore the role parents play in early language development.

Jean Piaget and Cognitive Development Read a more complete account of Piaget's theory.

Theory of Mind Watch a video illustrating the false-belief test used to assess young children's theory of mind.

Scaffolding as a Teaching Strategy Download a paper on the application of Vygotsky's idea of scaffolding to teaching.

A Positive Approach to Identity Formation of Biracial Children Join the debate about multi-ethnicity and identity formation.

Delayed Adulthood Read two articles about delayed adulthood.

Kohlberg Dilemmas Try your hand at answering several moral dilemmas.

Welcome to Middle Age Home page of middleage.org.

The AARP Home page of the American Association of Retired Persons.

Hospice A website of information about death, bereavement, and hospices.

Nine Steps to More Effective Parenting Read some more good advice on effective parenting.

Discipline: Logical & Natural Consequences Read about ways to effectively structure discipline.

Ten Reasons Not to Hit Your Kids Some reasons to avoid a heavy reliance on power-oriented discipline techniques.

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