04 - 3 Psychological Development

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CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT © ISTOCKPHOTO.COM/NADEZHDA KULAGINA For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

I t is parents' night at the beginning of the school year at the local primary school. Mrs. Vohland, the Grade 1 teacher, has given the parents of her new class a short presentation of the kinds of activities they will be doing over the academic year. The parents are milling around the room, looking at their children's artwork, and getting to know each other. A few parents approach Mrs. Vohland to introduce themselves or thank her for her presentation. One intense-looking father named Philip walks up to Mrs. Vohland and begins to ask her a series of pointed questions about her goals for the children. When will they learn to read? Will they have mastered addition and subtraction by the end of the year? Will his son be able to write short paragraphs by the end of the year? Mrs. Vohland tries to explain that Grade 1 is for developing the building blocks of reading, arithmetic, and writing. Some children will be very advanced by the end of the year, and some will not, because children develop at different paces. Philip is not satisfied with her answer, though, and informs Mrs. Vohland that his son has tested as 'bright' and he expects him to have accomplished all these goals by the end of the year. When Philip finally lets her go, Mrs. Vohland takes a deep breath and begins to tidy her desk. Another father, Sam, approaches. He also looks a bit intense, and Mrs. Vohland braces herself for another onslaught of questions. Sam begins by saying that he is concerned about his son, who apparently has also been labeled as 'bright' by some early intelligence tests. Sam's concerns, however, are quite different from Philip's. 'I just want him to have a normal childhood. He's only 6, and the hard work will come later. I want him to have fun and to enjoy school. I'm worried you might push him too hard because he's supposedly smart'. Parents, obviously, can have very different expectations for their children. Particularly with a first child, these expectations are often based on their own personal experiences as a child, or what they've read in the media or heard from friends. In addition, children vary greatly in their pace of development. In this chapter, we describe the progress of 'normal' development, but keep in mind the variations from this norm across children, families, and cultures. Of all mammals, human beings require the longest period of maturation and learning before they are self-sufficient. In general, the more complex an organism's nervous system, the longer the organism takes to

reach maturity. A lemur (a primitive primate) can move about on its own shortly after birth and is soon able to fend for itself. An infant monkey is dependent on its mother for several months, a chimpanzee for several years. But even a chimpanzee – one of For more Cengage Learning textbooks, visit www.cengagebrain.co.uk CHAPTER OUTLINE HEREDITY AND ENVIRONMENT Stages of development CAPACITIES OF THE NEWBORN Vision Hearing Taste and smell Learning and memory COGNITIVE DEVELOPMENT IN CHILDHOOD Piaget's stage theory A critique of Piaget's theory Alternatives to Piaget's theory Theory of mind The development of moral judgment PERSONALITY AND SOCIAL DEVELOPMENT Temperament Early social behavior Attachment Self-concept ADOLESCENT DEVELOPMENT CUTTING EDGE RESEARCH: ADOLESCENTS AND THE INTERNET SEEING BOTH SIDES: HOW INSTRUMENTAL ARE PARENTS IN THE DEVELOPMENT OF THEIR CHILDREN? 69

70 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT our closest relatives – will be a functioning adult member of its species long before a human of the same age. Developmental psychologists are concerned with how and why different aspects of human functioning develop and change across the life span. They focus on physical development, such as changes in height and weight and the acquisition of motor skills; cognitive development, such as changes in thought processes, memory, and language abilities; and personality and social development, such as changes in self-concept and interpersonal HEREDITY AND ENVIRONMENT The question of whether heredity ('nature') or environment ('nurture') is more important in determining the course of human development has been debated for centuries. The seventeenth-century British philosopher John Locke rejected the prevailing notion that babies were miniature adults who arrived in the world fully equipped with abilities and knowledge and simply had to grow for these inherited characteristics to appear. On the contrary, Locke believed that the mind of a newborn infant is a tabula rasa (Latin for 'blank slate'). What gets written on this slate is what the baby experiences – what he or she sees, hears, tastes, smells, and feels. According to Locke, all knowledge comes to us through our senses. It is provided entirely by experience; there is no built-in knowledge. Charles Darwin's theory of evolution (1859), which emphasizes the biological basis of human development, led many theorists to emphasize heredity. With the rise of behaviorism in the twentieth century, however, the environmentalist position once again dominated. Behaviorists like John B. Watson and B. F. Skinner argued that human nature is completely malleable: Early training can turn a child into any kind of adult, regardless of his or her heredity. Watson (1930, p. 104) stated this argument in its most extreme form: Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in, and I'll guarantee to take any one at random and train him to be any type of specialist I might select – doctor, lawyer, artist, merchant-chief, and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. Today most psychologists agree not only that both nature and nurture play important roles but also that they interact continuously to guide development. The newborn infant has an estimated 100 billion neurons in his or her For more Cengage Learning textbooks, visit www.cengagebrain.co.uk relationships. The development of particular psychological abilities and functions is treated in more detail in later chapters. In this chapter we provide a general overview of psychological development and consider two central questions: (1) How do biological factors interact with events in the child's environment to determine the course of development? and (2) Is development best understood as a gradual, continuous process of change or as a series of abrupt, qualitatively distinct stages? brain but relatively few connections between them. The connections between neurons develop rapidly after birth, and the infant brain triples in weight in the first three years

after birth (DiPietro, 2001). Brain development is heavily influenced both by genetic factors and by the stimulation or deprivation a child receives from the environment in the early years. Even forms of development that seem to be determined by innate biological timetables can be affected by environmental events. At the moment of conception, a remarkable number of personal characteristics are already determined by the genetic structure of the fertilized ovum. Our genes program our growing cells so that we develop into a person rather than a fish or a chimpanzee. They determine our sex, the color of our skin, eyes, and hair, and our overall body size, among other things. These genetically determined characteristics are expressed through the process of maturation – an innately determined sequence of growth and change that is relatively independent of external events. The human fetus develops according to a fairly fixed schedule, and fetal behavior, such as turning and kicking, also follows an orderly sequence that depends on the stage of growth. However, if the uterine environment is seriously abnormal in some way, maturational processes can be disrupted. For example, if the mother contracts rubella during the first three months of pregnancy (when the fetus's basic organ systems are developing according to the genetically programmed schedule), the infant may be born deaf, blind, or braindamaged, depending on which organ system was in a critical stage of development at the time of infection. Maternal malnutrition, smoking, and consumption of alcohol and drugs are other environmental factors that can affect the normal maturation of the fetus. Motor development after birth also illustrates the interaction between genetically programmed maturation and environmental influences. Virtually all children go through the same sequence of motor behaviors in the same order: rolling over, sitting without support, standing while holding onto furniture, crawling, and then walking

(see Figure 3.1). But they go through the sequence at different rates, and developmental psychologists have long wondered about the importance of learning and experience in such differences. Although early studies suggested that the answer was no (Dennis & Dennis, 1940; Gesell & Thompson, 1929; McGraw, 1935/1975), later studies indicate that practice or extra stimulation can accelerate the appearance of motor behaviors to some extent. For example, newborn infants have a stepping reflex. If they are held in an upright position with their feet touching a solid surface, their legs make stepping movements that are similar to walking. In some cultures, such as the Kipsigis people of rural Kenya, parents actively teach their infants how to sit up, stand, and walk, and these babies reach these developmental milestones three to five weeks earlier than American babies (Cole & Cole, 2001). In contrast, among the Ache, a nomadic people from eastern Paraguay, children get little experience with locomotion on their own because the forest they live in is so dense. These children begin walking almost a full year later than children in the United States or Europe (although they catch up to, and probably surpass, them in motor skills by mid-childhood). The development of speech provides another example of the interaction between genetically determined characteristics and experience. In the course of normal development, all human infants learn to speak, but not until they have attained a certain level of neurological development. With rare exceptions, infants less than a year old cannot speak in sentences. But children reared in an environment where people talk to them and reward them for making speechlike sounds talk earlier than children who do not receive such attention. For example, children in middle-class European homes begin to talk at about 1 year of age. Children reared in San Marcos, a remote village in Guatemala, have little verbal interaction with adults and do not utter their first words until they are more than 2 years old (Kagan, 1979). Note that the environment affects the rate at which children acquire the skills, not the ultimate skill level. Stages

of development In explaining the sequence of development, several psychologists have proposed discrete, qualitatively distinct steps or stages of development. Many of us use this concept informally. We think of the life span as being divided into the stages of infancy, childhood, adolescence, and adulthood. Parents might say that their adolescent is going through a ‘rebellious stage’. Developmental ª CORBIS/BETTMANN Both John Locke and Charles Darwin influenced the nature-nurture debate, but in different ways. Locke emphasized the role of the senses in the acquisition of knowledge, arguing that knowledge is provided only by experience. Darwin emphasized the biological basis of human development, leading to renewed interest in the role of heredity. © CORBIS/BETTMANN HEREDITY AND ENVIRONMENT For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

psychologists, however, have a more precise concept in mind: The concept of stages implies that behaviors at a given stage are organized around a dominant theme or a coherent set of characteristics, behaviors at one stage are qualitatively different from behaviors at earlier or later stages, and all children go through the same stages in the same order. Environmental factors may speed up or slow down development, but the order of the stages does not vary. A child cannot enter a later stage without going through an earlier one first. As we will see later in the chapter, however, not all psychologists agree that development proceeds according to a fixed sequence of qualitatively distinct stages. Closely related to the concept of stages is the idea of critical periods in human development – crucial time periods in a person’s life when specific events occur if development is to proceed normally. Critical periods have been identified for some aspects of physical development in the human fetus. For example, the period six to seven weeks after conception is critical for normal development of the sex organs. Whether the primitive sex organ develops into a male or female sexual structure depends on the presence of male hormones, regardless of the XX or XY arrangement of chromosomes. The absence of male hormones means that female sex organs will develop in either case. If male hormones are injected later in development, they cannot reverse the changes that have already taken place. The existence of critical periods for psychological development is less well established. It is probably more accurate to say that there are sensitive periods – periods that are optimal for a particular kind of development. If a certain behavior is not well established during this sensitive period, it may not develop to its full potential. For example, the first year of life appears to be a sensitive period for the formation of close interpersonal attachments (Rutter, Quinton, & Hill, 1990). The preschool years may be especially significant for intellectual development and language acquisition (DeHart et al., 2000). Children who have not had enough exposure to 2 4 6 Age in months 9 11 13 15 Walks alone Stands alone well Walks holding onto furniture Stands holding onto furniture Sits without support Bears some weight on legs Rolls over Figure 3.1 Motor Development. The bars indicate the age range in which most infants develop behavior indicated CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

Virtually all children go through the same sequence of motor behaviors in the same order, but they go through the sequence at different rates. language before age 6 or 7 may fail to acquire it altogether (Goldin-Meadow, 1982). The experiences of children during such sensitive periods may shape their future course of development in a manner that will be difficult to change later. INTERIM SUMMARY l Two central questions in developmental psychology are (1) How do biological factors (‘nature’) interact with environmental experiences (‘nurture’) to determine the course of development? and (2) Is development best understood as a continuous process of change or as a

series of qualitatively distinct stages? l Some developmental psychologists believe that development occurs in a sequence of periods in which (1) behaviors at a given stage are organized around a dominant theme or a coherent set of characteristics, (2) behaviors at one stage are qualitatively different from behaviors at earlier or later stages, and (3) all children go through the same stages in the same order. l An individual's genetic heritage is expressed through the process of maturation: innately determined sequences of growth or other changes in the body that are relatively independent of the environment. l Critical or sensitive periods are times during development when specific experiences must occur for psychological development to proceed normally. For more Cengage Learning textbooks, visit www.cengagebrain.co.uk CAPACITIES OF THE NEWBORN © Laura Dwight Photography CRITICAL THINKING QUESTIONS 1 Why do you think some parents are very concerned that their children develop basic skills faster than other children the same age? What effect do you think this has on the child's development? 2 Some theorists have claimed that there are sensitive periods for the development of attachments between an infant and his or her caregiver. What would the implications of such sensitive periods be, if they do exist? CAPACITIES OF THE NEWBORN At the end of the nineteenth century, psychologist William James suggested that the newborn child experiences the world as a 'buzzing, blooming confusion', an idea that was still prevalent as late as the 1960s. We now know that newborn infants enter the world with all of their sensory systems functioning and are well prepared to learn about their new environment. Because babies cannot explain what they are doing or tell us what they are thinking, developmental psychologists have had to design some ingenious procedures to study the capacities of infants. The basic method is to change the baby's environment in some way and observe the responses. For example, an investigator might present a tone or a flashing light and see if there is a change in heart rate or if the baby turns its head or sucks more

vigorously on a nipple. In some instances, the researcher presents two stimuli at the same time to determine whether infants look longer at one than at the other. If they do, it indicates that they can tell the stimuli apart and perhaps that they prefer one over the other. In this section we describe some research findings on infant capacities, beginning with studies of infants' vision. Vision Newborns have poor visual acuity, their ability to change focus is limited, and they are very nearsighted. The computer-manipulated picture in Figure 3.2 shows how a mother's face may look to an infant. By seven or eight months of age, infants' visual acuity is close to that of adults (Keil, in press). Newborns spend a lot of time actively looking about. They scan the world in an organized way and pause when their eyes encounter an object or some change in their visual field, which is the full scope of what they can see. They are particularly attracted to areas of high contrast, such as the edges of an object. Instead of scanning the entire object, as an adult would, they keep looking at areas that have the most edges. They also prefer complex patterns over plain ones and patterns with curved lines over patterns with straight lines. There is some evidence that newborns have a facial preference – an inborn, unlearned preference for faces. Newborns prefer to look at a normal face more than a scrambled or blank face, and even prefer to look at happy faces over fearful faces (Farroni et al., 2007). The brains of newborns may come prepared to orient toward faces and obtain information from faces (Johnson & Morton, 1991). Newborns do not come equipped to perceive faces exactly as older children and adults do, however, and a great deal of learning about faces happens in the early days and months of life. For example, although newborns prefer normal faces over scrambled ones (see Figure 3.3), they do not prefer normal faces over highly distorted ones in which the eyes are set so far apart the face appears rabbit-like. In contrast, three-month-olds show a clear preference for normal faces over distorted ones (Bhatt et al., 2005).

In addition, newborns do not show a Figure 3.2 Visual Acuity. The newborn's poor visual acuity makes the mothers face look fuzzy (left) rather than clear (right) even when viewed from close up. Figure 3.3 Normal versus scrambled faces. Infants as young as 3 months show a preference for a normally configured face and a face with the features scrambled. Such preferences may be present at birth. (From Bhatt, Berling, Hayden and Reed, 2005.) © VINICUS TUPINAMBA/DREAMSTIME.COM CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

preference for faces of their own culture or race, but by three months of age, infants clearly prefer to look at faces of their own race (Kelly et al., 2005; Kelly et al., in press). Thus, newborns seem to come equipped to perceive the basic features of faces and to learn very rapidly about the faces they frequently see. Hearing Even fetuses 26 to 28 weeks old move in response to a sharp sound. Newborn infants turn their heads toward the source of a sound. Interestingly, the head-turning response disappears at about six weeks and does not reemerge until three or four months, at which time the infants also search with their eyes for the source of the sound. By four months, infants reach toward the source of a sound in the dark, which helps young infants to learn what objects go with what sounds (Keil, in press). Infants seem to learn particularly rapidly about the sounds made in human speech, and this learning may begin in the womb. Newborns show a preference for their mothers' voice over a strangers, and even show a preference for stories their mothers read aloud in the last weeks of pregnancy over novel stories (DeCasper et al., 1994). While in the womb, infants are probably perceiving the low frequency sounds of their mothers' voices. They are also picking up on the distinctive qualities of their mother's language: newborns of French mothers can distinguish between recordings of a woman speaking French and Russian, while newborns whose mother is neither French nor Russian cannot discriminate the two recordings (Mehler et al., 1988). It seems it is the particular rhythms of a language that infants are discerning. Newborns will not distinguish between their own language and other languages that are similar in rhythm, such as Dutch and English, but will distinguish between languages with different rhythms, such as Japanese and Polish (Ramus, 2002). Across cultures, adults speak to young infants quite differently from how they speak to older children and adults, using a higher pitch to the voice, different contours to sentences (e.g., 'hellllloooo, little baby' with the 'hello' starting at a high pitch then declining in pitch and the 'l' and 'o' drawn out), and longer pauses between sentences. This style of speech, often referred to as babytalk or motherese, seems to be just what a baby wants and needs. Infants in the first months of life prefer motherese over normal speech, even when presented by a stranger, and motherese helps infants detect the boundaries between words (Cooper et al., 1997; Fernald, 1985; Thiessen et al., 2005). Infants as young as six months are also able to discriminate between intonations of voice indicating approval and disapproval, and smile more in response to approval intonations over disapproval intonations, even when presented in a language different from their own (Fernald, 1993). Thus, infants seem to be able For more Cengage Learning textbooks, visit www.cengagebrain.co.uk CAPACITIES OF THE NEWBORN to extract important meanings from the speech around them, and are especially attentive to the kind of speech most frequently directed at them. Taste and smell Infants can discriminate between tastes shortly after birth. They prefer sweet-tasting liquids over liquids that are salty, bitter, sour, or bland. The characteristic response of the newborn to a sweet liquid is a relaxed expression resembling a slight smile, sometimes accompanied by lip-licking. A sour solution produces pursed lips and a wrinkled nose. In response to a bitter solution, the baby opens its mouth with the corners turned down and sticks out its tongue in what appears to be an expression of disgust. Newborns

can also discriminate among odors. They turn their heads toward a sweet smell, and heart rate and respiration slow down; these are indicators of attention. Noxious odors, such as those of ammonia or rotten eggs, cause them to turn their heads away; their heart rate and respiration accelerate, indicating distress. Infants are able to discriminate among even subtle differences in smells. After nursing for only a few days, an infant will ª MICHAEL NEWMAN/PHOTOEDIT Infants show their likes and dislikes for certain tastes at a very young age using universal facial expressions, such as the expression for disgust.

76 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT consistently turn its head toward a pad saturated with its mother's milk in preference to one saturated with another mother's milk (Russell, 1976). Only breast-fed babies show this ability to recognize the mother's odor (Cernoch & Porter, 1985). When bottle-fed babies are given a choice between the smell of their familiar formula and that of a lactating breast, they choose the breast (Porter, Makin, Davis, & Christensen, 1992). There seems to be an innate preference for the odor of breast milk. In general, the ability to distinguish among smells has a clear adaptive value: It helps infants avoid noxious substances and thereby increases their chances of survival. Learning and memory It was once thought that infants could neither learn nor remember, but this is not the case. Evidence for early learning and remembering comes from several classic studies. In one, infants only a few hours old learned to turn their heads right or left, depending on whether they heard a buzzer or a tone. To taste a sweet liquid, the baby had to turn to the right when a tone sounded and to the left when a buzzer sounded. After only a few trials, the babies were performing without error – turning to the right when the tone sounded and to the left when the buzzer sounded. The experimenter then reversed the situation so that the infant had to turn the opposite way when either the buzzer or the tone sounded. The babies mastered this new task quickly (Siqueland & Lipsitt, 1966). By the time they are three months old, infants have good memories. When a mobile over an infant's crib was attached to one of the baby's limbs by a ribbon, threemonth-old infants quickly discovered which arm or leg would move the mobile. When the infants were placed in the same situation eight days later, they remembered which arm or leg to move (Rovee-Collier, 1999) (see Figure 3.4). More startling is evidence that infants remember sensations they experienced before birth, while still in the mother's uterus. We noted earlier that newborn infants can distinguish the sound of the human voice from other sounds. They also prefer the human voice over other sounds. A few days after birth, infants can learn to suck on an artificial nipple in order to turn on recorded speech or vocal music, and they suck more vigorously to hear speech sounds than to hear nonspeech sounds or instrumental music (Butterfield & Siperstein, 1972). They also prefer heartbeat sounds and female voices over male voices, and they prefer their mother's voice to other women's voices. But they do not prefer their father's voice to other men's voices (Brazelton, 1978; DeCasper & Fifer, 1980; DeCasper & Prescott, 1984) (see Figure 3.5). These preferences appear to stem from the infant's prenatal experience with sounds. For example, the mother's voice can also be heard in the uterus, which would appear to explain why a newborn infant prefers her voice over others. Perhaps most surprising is For more Cengage Learning textbooks, visit www.cengagebrain.co.uk Figure 3.4 A Study of Infant Memory. A study showed that 3-month-old infants could easily learn to move a mobile by pulling on a ribbon attached to their leg; the infants remembered this new behavior when tested in the same situation eight days later. (From Rovee-Collier, C. (1999). The development of infant memory. Current Directions in Psychological Science, 8, 80-85.) © RICH MALKAMES Figure 3.5 Preference for Sounds. A newborn can indicate a preference for certain sounds – such as the mother's voice – by sucking more vigorously on a nipple when it causes the preferred sounds to be played through the earphones.

evidence that the fetus may actually be learning to discriminate among some of the sounds of individual words. In an extraordinary experiment, pregnant women

read aloud passages from children's stories each day during the last six weeks of pregnancy. For example, some women read the first 28 paragraphs of the Dr. Seuss book The Cat in the Hat. Others read the last 28 paragraphs of the same story, but with the main nouns changed so that it was about the 'dog in the fog' instead of the 'cat in the hat'. By the time the infants were born, they had heard one of the selected stories for a total of about 31 2 hours. Two or three days after the infants were born, they were permitted to suck on a special pacifier wired to record sucking rates (like the apparatus shown in Figure 3.5). Sucking on the pacifier turned on a tape recording of either their mother's voice or an unfamiliar woman's voice reading aloud either the story the infants had heard before birth or the story they had not heard previously. As in previous experiments, the infants showed by their sucking rates that they preferred their mother's voice to the stranger's. The startling finding, however, was that they also preferred the familiar story over the unfamiliar one – even when the two stories were read by the stranger (DeCasper & Spence, 1986). In sum, the research we have described challenges the view of the newborn as experiencing the world as 'buzzing, blooming confusion', as well as the view that the child enters the world as a 'blank slate'. Clearly, the infant enters the world well prepared to perceive and learn. INTERIM SUMMARY l Early theorists believed that all sensory preferences and abilities had to be learned, but research over the past several decades has established that infants are born with their sensory systems intact and prepared to learn about the world. l Newborns have poor vision and cannot see as well as an adult until about age 2. l Some theorists thought infants were born with a preference for faces, but research suggests infants are not attracted to faces per se but to stimulus characteristics such as curved lines, high contrast, edges, movement, and complexity – all of which faces possess. l Even newborns pay attention to sounds, and they seem to be born with perceptual mechanisms that are already tuned to the properties of human speech that will help them learn language. l Infants can discriminate between different tastes and odors shortly after birth. They seem to show a preference for the taste and odor of breast milk. l Infants can learn from the moment they are born and show good memories by three months of age. For more Cengage Learning textbooks, visit www.cengagebrain.co.uk COGNITIVE DEVELOPMENT IN CHILDHOOD CRITICAL THINKING QUESTIONS 1 What do you think the evidence regarding infants' memories says about claims that adults can remember events from their first year of life? 2 Can an infant's environment be too stimulating? What might be the effects of an overly stimulating environment? COGNITIVE DEVELOPMENT IN CHILDHOOD Although most parents are aware of the intellectual changes that accompany their children's physical growth, they would have difficulty describing the nature of these changes. How contemporary psychologists describe these changes has been profoundly influenced by the Swiss psychologist Jean Piaget (1896–1980). Prior to Piaget, psychological thinking about children's cognitive development was dominated by two perspectives, the biological-maturation, which emphasized the 'nature' component of development, and the environmentallearning perspective, which emphasized 'nurture'. In contrast, Piaget focused on the interaction between the child's naturally maturing abilities and his or her interactions with the environment. In this section we outline Piaget's stage theory of development and then turn to a critique of that theory and to some more recent approaches. We also discuss the work of Lev Vygotsky, a Russian psychologist whose ideas about cognitive development, originally published in the 1930s, have attracted renewed interest in recent years. Piaget's stage theory Partly as a result of his observations of his own children, Piaget became interested in the relationship between the

child’s naturally maturing abilities and his or her interactions with the environment. He saw the child as an active participant in this process, rather than as a passive recipient of biological development or external stimuli. He viewed children as ‘inquiring scientists’ who experiment with objects and events in their environment to see what will happen. (‘What does it feel like to suck on the teddy bear’s ear?’ ‘What happens if I push my dish off the edge of the table?’) The results of these ‘experiments’ are used to construct schemas – theories about how the physical and social worlds operate. Upon encountering a novel object or event, the child attempts to assimilate it – understand it in terms of a preexisting schema. Piaget argued that if the

78 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT new experience does not fit the existing schema, the child, like any good scientist, will engage in accommodation, modifying a schema to fit new information, thereby extending the child’s theory of the world (Piaget & Inhelder, 1969). For example, if a boy’s schema for firefighter is a male adult who wears a big, bulky uniform, but he sees a picture of a woman in a firefighter’s uniform, he may first refuse to believe that women can be firefighters. He may argue that the woman in the picture must be playing ‘dress-up’. Upon further evidence of women firefighters, however, the boy may engage in accommodation of his schema for firefighters, accepting that firefighters can be women, too. Piaget’s first job as a postgraduate student in psychology was as an intelligence tester for Alfred Binet, the inventor of the IQ test (see Chapter 12). In the course of this work, he began wondering why children made the kinds of errors they did. What distinguished their reasoning from that of adults? He observed his own children closely as they played, presenting them with simple scientific and moral problems and asking them to explain how they arrived at their answers. Piaget’s observations convinced him that children’s ability to think and reason progresses through a series of qualitatively distinct stages. He divided cognitive development into four major stages, each of which has a number of substages. The major stages are the sensorimotor stage, the preoperational stage, the stage of concrete operations, and the stage of formal operations (see Concept Review Table). The sensorimotor stage Piaget designated the first two years of life as the sensorimotor stage, when infants are busy discovering the relationships between their actions and the consequences of those actions. They discover, for example, how far they have to reach to grasp an object and what happens when they push their dish over the edge of the table. In this way they begin to develop a concept of themselves as separate from the external world. An important discovery during this stage is the concept of object permanence, the awareness that an object continues to exist even when it is not present. If a cloth is placed over a toy that an eight-month-old is reaching for, the infant immediately stops reaching and appears to lose interest in the toy. The baby seems neither surprised nor upset, makes no attempt to search for the toy, and acts as if the toy had ceased to exist (see Figure 3.6). In contrast, a ten-month-old will actively search for an object that has been hidden under a cloth or behind a screen. The older baby, having attained the concept of object permanence, seems to realize that the object exists, even though it is out of sight. But even at this age, search is limited. The infant who has had repeated success in retrieving a toy hidden in a particular place will continue to look for it in that spot even after watching an adult conceal it in a new location. For more Cengage Learning textbooks, visit www.cengagebrain.co.uk CONCEPT REVIEW TABLE Piaget’s stages of cognitive development The ages given are averages. They may vary considerably depending on intelligence, cultural background, and socioeconomic factors, but the order of the progression is assumed to be the same for all children. Piaget has described more detailed phases within each stage; only a general characterization of each stage is given here.
Stage Characterization

1. Sensorimotor (birth–2 years) Differentiates self from objects Recognizes self as agent of action and begins to act intentionally; for example, pulls a string to set a mobile in motion or shakes a rattle to make a noise
2. Preoperational (2–7 years) Learns to use language and to represent objects by images and words Thinking is still egocentric: has difficulty taking the viewpoint of others Classifies objects by a single feature; for example, groups together all the red blocks regardless of shape or all the square blocks regardless of color
3. Concrete operational (7–11 years) Can think logically about objects and events Achieves conservation of number (age 6), mass (age 7), and weight (age 9) Classifies objects according to several features and can order them in series along a single dimension, such as size
4. Formal operational (11 years and up) Can think logically about abstract propositions and test hypotheses systematically Becomes concerned with the hypothetical, the future, and ideological problems Not until about 1 year of age will a child consistently look for an object where it was last seen, regardless of what happened on previous trials. The preoperational stage By about 11 2 to 2 years of age, children have begun to use symbols. Words can represent things or groups of things, and one object can represent another. A 3-year-old may treat a stick as a horse and ride it around the room, a block of wood can become a car, and one doll can become a father and another a baby. But although 3- and 4-year-olds can think in symbolic terms, their words and images are not yet organized in a logical manner. During this preoperational stage of cognitive development, the child does not yet comprehend certain rules or operations. An operation is a mental routine for separating,

combining, and otherwise transforming information in a logical manner. For example, if water is poured from a tall, narrow glass into a short, wide one, adults know that the amount of water has not changed because they can reverse the transformation in their minds. They can imagine pouring the water from the short glass back into the tall glass, thereby arriving back at the original state. In the preoperational stage of cognitive development, a child’s understanding of reversibility and other mental operations is absent or weak. As a result, according to Piaget, preoperational children have not yet attained conservation, the understanding that the amount of a substance remains the same even when its form is changed. They fail to understand that the amount of water is conserved – remains the same – when it is poured from the tall glass into the short one (see Figure 3.7). Piaget believed that preoperational thinking is dominated by visual impressions. A change in the visual appearance of the clay influences the child more than less obvious but more essential qualities, such as mass or weight. This reliance on visual impressions is illustrated by an experiment on the conservation of number. If two rows of checkers are matched one for one against each other, young children will say, correctly, that the rows have the same number of checkers (see Figure 3.8). If the checkers in one row are brought closer together to form a cluster, 5-year-olds say that there are now more checkers in the straight row even though no checkers have been removed. The visual impression of a long row of checkers overrides the numerical equality that was obvious when the checkers appeared in matching rows. In contrast, 7-year-olds assume that if the number of objects was equal before, it must remain equal. At this age, numerical equality has become more significant than visual impression. Another key characteristic of preoperational children, according to Piaget, is egocentrism. Preoperational children are unaware of perspectives other than their own – they Figure 3.6 Object Permanence. When the toy

is hidden by a screen, the infant acts as if the toy no longer exists. From this observation, Piaget concluded that the infant had not yet acquired the concept of object permanence. Figure 3.7 The Concept of Conservation. A 4-year old acknowledges that the two short, wide glasses contain the same amount of liquid. However, when the contents of one glass is poured into a tall, thin glass, she says that it contains more liquid. Not until she is several years older will she state that the two different-shaped glasses contain the same amount of liquid. COGNITIVE DEVELOPMENT IN CHILDHOOD For more Cengage Learning textbooks, visit www.cengagebrain.co.uk © Laura Dwight Photography © Laura Dwight Photography

believe that everyone else perceives the environment the same way they do (Piaget, 1950a). To demonstrate this, Piaget created the ‘three-mountain problem’. A child is allowed to walk around a table on which are arranged three mountains of different heights. Then the child stands on one side of the table while a doll is placed on the table at various locations (and therefore has a different view of the three mountains than the child). The child is asked to choose a photograph that shows what the doll is seeing. Before the age of 6 or 7, most children choose the photograph that illustrates their own perspective on the three mountains (Piaget & Inhelder, 1948/1956). Piaget believed that egocentrism explains the rigidity of preoperational thought. Because young children cannot appreciate points of view other than their own, they cannot revise their schemas to take into account changes in the environment. This is why they are unable to reverse operations or conserve quantity. Operational stages Between the ages of 7 and 12, children master the various conservation concepts and begin to perform other logical manipulations. They can place objects in order on the basis of a dimension such as height or weight. They can also form a mental representation of a series of actions. Five-year-olds can find their way to a friend’s house but cannot direct you there or trace the route with paper and pencil. They can find their own way because they know that they have to turn at certain places, but they have no overall picture of the route. In contrast, 8-year-olds can readily draw a map of the route. Piaget calls this period the concrete operational stage: Although children are using abstract terms, they are doing so only in relation to concrete objects – objects to which they have direct sensory access. At about the age of 11 or 12, children arrive at adult modes of thinking. In the formal operational stage, the person is able to reason in purely symbolic terms. In one test for formal operational thinking, the child tries to discover what determines how long a pendulum will swing back and forth (its period of oscillation). Given a length of string suspended from a hook and several weights that can be attached to the lower end, the child can vary the length of the string, change the attached weight, and alter the height from which the bob is released. Children who are still in the concrete operational stage experiment by changing some of the variables but not in a systematic way. Average adolescents, however, set up a series of hypotheses and test them systematically. They reason that if a particular variable (weight) affects the period of oscillation, the effect will appear only if they change one variable and hold all others constant. If this variable seems to have no effect on how long the pendulum swings, they rule it out and try another. Considering all the possibilities – working out the consequences for each hypothesis and confirming or denying these consequences – is the essence of formal operational thought. A critique of Piaget’s theory Piaget’s theory was a major intellectual achievement that revolutionized the way we think about children’s cognitive development. However, new, more sophisticated methods of testing the intellectual functioning of infants and preschool children reveal that Piaget underestimated their abilities. Many of the tasks designed to test stage theories actually require several skills, such as attention, memory, and specific factual knowledge. Children may have the ability being tested but be unable

to perform the task because they lack one of the other required skills. Figure 3.8 Conservation of Number. When two rows of ten checkers are evenly spaced, most children report that they contain the same amount. When one row is then spread out into a larger space, children under age 6 or 7 say that the original row contains fewer checkers. © LAURA DWIGHT CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

Take the example of object permanence. As we saw earlier, when infants younger than eight months are shown a toy that is then hidden or covered while they watch, they act as if the toy no longer exists and do not attempt to search for it. Note, however, that successful performance on this test requires children not only to understand that the object still exists but also to remember where the object was hidden and to show through some physical action that they are searching for it. Because Piaget believed that early cognitive development depends on sensorimotor activities, he did not consider the possibility that the infant might know that the object still exists but be unable to show this knowledge through searching behavior. In a study designed to test this possibility, children were not required to actively search for the hidden object. As shown in the far left section of Figure 3.9, the apparatus was a screen hinged at one edge to the top of a table. At first the screen lay flat on the table. As the infant watched, the screen was slowly rotated away from the infant through a complete 180-degree arc until it was again flat on the table. The screen was then rotated in the opposite direction, toward the infant. When the infants were first shown the rotating screen, they looked at it for almost a full minute, but after repeated trials they lost interest and turned their attention elsewhere. At that point a brightly painted box appeared on the table beyond the hinge, where it would be hidden as the screen moved into its upright position. (The infant was actually seeing a reflected image of a box, not the actual box.) As shown in Figure 3.9, the infants were then shown either a possible event or an impossible event. One group of infants saw the screen rotate from its starting position until it reached the point where it should bump against the box. At that point the screen stopped and then moved back to its starting position. The other group saw the screen rotate to the upright position but then continue to rotate all the way to the other side of the 180-degree arc, just as though no box was in the way. The investigators reasoned that if the infants thought the box still existed even when the screen hid it, they would be surprised when it seemed to pass through the box – an impossible event. The infants would then look at the screen longer than they would when the screen seemed to bump into the box before returning to its starting point. This is exactly what happened. Even though the impossible event was perceptually identical to an event that they had seen repeatedly and lost interest in, the infants found it more interesting than a physically possible event that they had never seen before – the screen stopping halfway through the arc and then reversing direction (Baillargeon, Spelke, & Wasserman, 1985). Because the infants in this experiment were only fourand-a-half months old, they displayed object permanence four to five months earlier than Piaget’s theory predicts. Replications of this study have found that some infants as young as three-and-a-half months display object permanence (Baillargeon, 1987; Baillargeon & DeVos, 1991). Other experiments using Piaget’s conservation tasks have also yielded evidence that children’s mental capacities develop earlier than he thought. In one study of number conservation, two sets of toys were lined up in one-to-one correspondence (as in Figure 3.8). The experimenter then said, ‘These are your soldiers and these are my soldiers. What’s more, my soldiers, your soldiers, or are they both the same?’ After the child answered this question correctly, the experimenter spread out one of the rows of toys and repeated the question. As Piaget and others had previously reported, 5-year-old children failed to conserve, stating that the Possible event Impossible event a) Habituation event

Infants are shown a rotating screen

until they no longer attend to it. b) Test events

In these test events, a box is placed where it can be hidden by the screen. The

infants then see either a possible event (the screen rotates until it would hit the

box and then returns to its starting position) or an impossible event (the screen

appears to pass right through the box). Infants attend more to the impossible

event, indicating that they realize that the hidden box still exists. Figure 3.9 Testing Object Permanence. (Adapted from Baillargeon, R., 'Object Performance in 3½ and 4½-Month-Old Infants', from Developmental Psychology, 23:655-664. Copyright © 1987. Reprinted by permission of the Academic Press. COGNITIVE DEVELOPMENT IN CHILDHOOD For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

82 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT spread-out row contained more soldiers. But then the investigator introduced a second set of conditions. Instead of describing the toys as individual soldiers, she said, 'This is my army and this is your army. What's more, my army, your army, or are they both the same?' With this simple change of wording, most of the children were able to conserve, judging the two 'armies' to be the same size, even when one of them was spread out. When children are prompted to interpret the display as an aggregate or collection rather than as a set of individual items, their judgments of equality are less likely to be influenced by irrelevant perceptual transformations (Markman, 1979). Other research has identified more factors that can influence the development of concrete operational thought. For example, the experience of going to school seems to promote mastery of Piagetian tasks (Artman & Cahan, 1993). This and other evidence suggest that concrete operational reasoning may not be a universal stage of development that emerges during middle childhood but, instead, a product of the cultural setting, schooling, and the specific wording of questions and instructions. Alternatives to Piaget's theory Developmental psychologists generally agree that these kinds of findings show that Piaget underestimated children's abilities, and his theory has been challenged on many grounds. However, there is no consensus on the best alternative to pursue. Some psychologists favor information-processing approaches, and others have pursued knowledge-acquisition and sociocultural approaches. Information-processing approaches We have already noted that many of the experiments challenging Piaget's views were inspired by investigators who view cognitive development as the acquisition of several separate information-processing skills – specific skills at gathering and analyzing information from the environment. Accordingly, they think that the standard Piagetian tasks fail to separate these skills from the skill that the task is supposed to assess. But they disagree among themselves about exactly how their views challenge Piaget's theory. For example, they disagree on the important question of whether development is best understood as a series of qualitatively distinct stages or as a continuous process of change. Some think that the entire notion of stages should be abandoned (Klahr, 1982). In their view, the separate skills develop smoothly and continuously rather than in a series of discrete stages. But other information-processing theorists think that gradual changes in information-processing skills

do in fact lead to discontinuous, stagelike changes in children's thinking (Case & Okamoto, 1996). These For more Cengage Learning textbooks, visit www.cengagebrain.co.uk theorists are sometimes referred to as neo-Piagetians. Other neo-Piagetians agree that there are genuine stages but only within more narrow domains of knowledge. For example, a child's language skills, mathematical understanding, social reasoning, and so forth may all develop in a stagelike fashion, but each domain proceeds at its own pace relatively independently of the others (Mandler, 1983). Knowledge-acquisition approaches Some developmental psychologists think that after infancy, children and adults have essentially the same cognitive processes and capacities and that the primary difference between them is the adult's more extensive knowledge base. By knowledge they mean not just a larger collection of facts but a deeper understanding of how facts in a particular domain are organized. An example of a knowledge-acquisition approach is Siegler's (1996) overlapping waves theory of cognitive development, which suggests that children have access to multiple ways of solving problems at any one time but with age and experience, some strategies become more frequent while others become less frequent. The distinction between facts and the organization of facts is shown in a study that compared a group of 10-year-old chess experts competing in a tournament with a group of college students who were chess amateurs. When asked to memorize and recall lists of random numbers, the college students easily outperformed the 10-year-olds. But when tested on their ability to recall actual positions of the chess pieces on the board, the ª MONIKA GRAFF/THE IMAGE WORKS Studies of young chess experts suggest their greater store of knowledge about chess allows them to process information about appropriate moves more efficiently, giving them the upper hand in competitions with older but less expert chess players.

10-year-old chess experts did better than the 18-year-old chess amateurs (Chi, 1978). The relevant difference between the two groups is not different stages of cognitive development or different information-processing abilities, but domain-specific knowledge. Because the 10-year-olds had a deeper grasp of the underlying structure of chess, they could organize and reconstruct the arrangements from memory by 'chunking' the separate pieces of information into larger meaningful units (for example, a kingside attack by white) and eliminating from consideration implausible placements of the pieces. (We discuss experts versus amateur problem solvers in Chapter 9.) Increasing knowledge of the world, rather than a qualitative shift in cognitive development, may also account for children's increasing ability to solve Piaget's conservation tasks as they grow older. For example, a child who does not know that mass or number is the critical feature that defines 'more clay' or 'more checkers' is likely to judge that the quantity has changed when only its visual appearance has changed. An older child may simply have learned the essential defining feature of 'more'. If this hypothesis is correct, children who fail to show conservation in one domain may show conservation in another, depending on their understanding of the domain. For example, in a study kindergarten children were told about a series of 'operations' that doctors or scientists had performed. Some operations altered an animal so that it looked like a different animal; other operations altered an animal so that it looked like a plant (see Figure 3.10). Children were told that the doctors took a horse [shows child picture of horse] and did an operation that put black and white stripes all over its body. They cut off its mane and braided its tail. They trained it to stop neighing like a horse, and they trained it to eat wild grass instead of oats and hay. They also trained it to live in the wilds in Africa instead of in a stable. When they were all done, the animal looked just like this [shows picture of zebra]. When they were finished, was this animal a horse or a zebra? (Keil, 1989, p. 307) Figure 3.10 Early Testing of Conservation. Children are told

that doctors or scientists operated on an animal until it looked like a different animal (horse to zebra) or until it looked like a plant (hedgehog to cactus). Children who say that the animal is ‘really’ the new animal or plant are failing to show conservation; children who say that the animal is stil ‘really’ the original animal are showing conservation. ISTOCKPHOTO.COM/JACOM STEPHENS © DAVID ASCH/DREAMSTIME.COM ISTOCKPHOTO.COM/JURGAR CHRISTOPHE TESTI/DREAMSTIME.COM COGNITIVE DEVELOPMENT IN CHILDHOOD For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

84 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT When asked about operations that transformed one kind of animal into another, a majority of the children failed to conserve. About 65 percent agreed that the horse had been genuinely changed into a zebra. But when faced with the transformation of an animal into a plant, only about 25 percent agreed that a porcupine had been genuinely changed into a cactus (Keil, 1989). Studies like these demonstrate that in some domains preoperational children can ignore dramatic changes in visual appearance because they have learned that an invisible but essential defining feature of the object has remained unchanged. Sociocultural approaches Although Piaget emphasized the child’s interactions with the environment, the environment he had in mind was the immediate physical environment. The social and cultural context plays virtually no role in Piaget’s theory. Yet much of what children must learn is the particular ways their culture views reality, what roles different people – and different sexes – are expected to play, and what rules and norms govern social relationships in their particular culture. In these areas there are no universally valid facts or correct views of reality. According to those who take a sociocultural approach to development, the child should be seen not as a physical scientist seeking ‘true’ knowledge but as a newcomer to a culture who seeks to become a native by learning how to look at social reality through the lens of that culture (Rogoff, 2000). Culture can influence children’s development in several ways (Keil, in press):

1. By providing the opportunity for specific activities: Children learn by observation, experience, or at least hearing about an activity. For example, because water is scarce in the desert, children of the Kung of the Kalahari Desert are unlikely to learn about conservation by pouring water from one glass to another, but children growing up in Seattle or Paris are unlikely to learn how to find water-bearing roots in the desert.
2. By determining the frequency of certain activities: For example, traditional dancing is important in Balinese culture, so children growing up in Bali become skilled dancers, but Norwegian children become expert skiers or skaters.
3. By how they relate different activities: For example, in cultures in which making pottery is important, children associate molding clay with interaction with their parents and perhaps with selling pots in the market. In cultures where making pottery is not important, children may view molding clay only as a nursery school pastime. For more Cengage Learning textbooks, visit www.cengagebrain.co.uk
4. By controlling the child’s role in the activity: In many cultures, meat is obtained in a supermarket, and children (and their parents) play no role in trapping, killing, and preparing the animal from which the meat comes. In other cultures, children learn from a young age how to hunt, kill, and prepare animals for family meals. The origins of this view of cognitive development can be seen in the work of the Russian scholar Lev Vygotsky (1934/1986). Vygotsky believed that we develop understanding and expertise primarily through what might be described as apprenticeship – we are guided by more

knowledgeable individuals, who help us understand more and more about our world and develop new skills. He also distinguished between two levels of cognitive development: the child's actual level of development, as expressed in problem-solving ability, and the child's level of potential development, which is determined by the kind of problem solving the child can do when guided by an adult or a more knowledgeable peer. According to Vygotsky, we need to know both the actual and potential levels of development in a particular child to fully understand that child's level of cognitive development and provide appropriate instruction. Because language is the primary means by which humans exchange social meanings, Vygotsky viewed language development as central to cognitive development. In fact, he regarded language acquisition as the most important aspect of children's development (Blanck, 1990). Language plays an important role in developing new skills and knowledge. As adults and peers help children master new tasks, the communication between them becomes part of the children's thinking. The children then use their language ability to guide their own actions as they practice the new skill. What Piaget referred to as egocentric speech Vygotsky considered an essential component of cognitive development: Children speak to themselves to give themselves guidance and direction. This kind of self-instruction is termed private speech. You can observe this process in a child who gives herself instructions about how to perform a task, such as tying her shoes, that she previously heard from an adult (Berk, 1997). Theory of mind As adults, we behave and think in ways that reflect our understanding that other people have minds – they think, they have expectations and beliefs, they have their own assumptions, and so on. Much of our behavior toward other people is based on our understanding of what they are thinking. For example, we have a date to meet a friend for coffee at 2 p.m. but realize that the meeting we are in is not going to be finished until 2:30 p.m. Knowing the

ª ISTOCKPHOTO.COM/MARILYN NIEVES Theory of mind studies suggest that very young children tend to think that everyone else has the same perspective on the world – including what is in a closed box – as they do. friend expects us to be at the coffee house at 2 p.m., we take a break from the meeting to call our friend and tell her we are going to be late. We also occasionally reflect on our own thinking process by, for example, evaluating what we think about a situation or wondering how we could have been mistaken in a belief. This thinking about thinking is referred to as metacognition. In recent years, psychologists have become interested in how metacognition, or more generally an individual's theory of mind, develops. These researchers have studied children's knowledge about basic mental states, such as desires, percepts, beliefs, knowledge, thoughts, intentions, and feelings. The following study is typical in research on theory of mind and illustrates the basic developmental finding (Flavell, 1999). An experimenter shows a 5-year-old child a candy box with pictures of candy on it and asks her what she thinks is in it. 'Candy', she replies. Then the child gets to look inside and discovers to her surprise that it actually COGNITIVE DEVELOPMENT IN CHILDHOOD contains crayons, not candy. The experimenter then asks her what another child who had not yet seen inside the box would think it contained. 'Candy', the child answers, amused at the deception. The experimenter then tries the same procedure with a 3-year-old. The response to the initial question is the expected 'Candy', but the response to the second is surprising – an unamused 'Crayons'. Even more surprising is that in response to further questioning, the 3-year-old claims that she had initially thought that there were crayons in the box and had even said that there were. The basic

interpretation of this finding is that preschoolers do not yet fully comprehend that other people have minds and thoughts different from their own, and therefore do not understand that people can have beliefs different from their own or different from reality. How does this understanding develop? Bartsch and Wellman (1995) argue that the developmental sequence has three steps. First, about age 2, children have an elementary conception of simple desires, emotions, and perceptual experiences. They understand that people can have wants and fears, and can see and feel things, but they do not understand that people mentally represent both objects and their own desires and beliefs. Second, at about age 3, children begin to talk about beliefs and thoughts as well as desires, and they seem to understand that beliefs can be false as well as true and can differ from one person to another. Yet, they still continue to explain their own actions and others' actions by appealing to desires rather than beliefs. Finally, at about age 4, children begin to understand that people's thoughts and beliefs affect their behaviors and that people can have beliefs that simply do not reflect reality. The building blocks for this understanding of others' minds are in place even earlier than 2 years of age, however (Tomasello, Carpenter, & Liszkowski, 2007). A good example is a 1-year-old's use of pointing to direct the attention of an adult. Such behavior suggests that the infant knows the adult's mind is different from her own and that by pointing, she can direct the adult's attention to an interesting object. Evidence that pointing is used intentionally to direct the mind (attention) of an adult comes from experiments in which adults ignored an infant's pointing at an object like a puppet – such behavior on the part of the adult results in annoyance by the infant and repeated attempts to direct the adult's attention (Liszkowski et al., 2004). One of the most interesting applications of research on theory of mind is the study of autism, a serious disorder in which children can seem unresponsive to others and tend to have significant problems in communicating with others (see Chapter 15 for a more extensive discussion of autism). Simon Baron-Cohen (Baron-Cohen & Wheelwright, 2004) has suggested that children with autism lack a fundamental theory of mind, which robs them of

 the ability to understand others' feelings, desires, and beliefs. As a result, people can seem like any other object to an autistic child. This contributes to the autistic child's apparent lack of interest in others and retreat into an inner world. Author Temple Grandin, who has autism but has still achieved much in her life, describes it this way: Social interactions that come naturally to most people can be daunting for people with autism. As a child, I was like an animal that had no instincts to guide me; I just had to learn by trial and error. I was always observing, trying to work out the best way to behave, but I never fit in. I had to think about every social interaction. When other students swooned over the Beatles, I called their reaction an ISP – interesting sociological phenomenon. I was a scientist trying to figure out the ways of the natives. I wanted to participate, but did not know how…. All my life I have been an observer, and I have always felt like someone who watches from the outside. I could not participate in the social interactions of high school life…. My peers spent hours standing around talking about jewelry or some other topic with no real substance. What did they get out of this? I just did not fit in. I never fit in with the crowd, but I had a few friends who were interested in the same things, such as skiing and riding horses. Friendship always revolved around what I did rather than who I was. (Grandin, 1995, p. 132). The development of moral judgment In addition to studying the development of children's thought, Piaget was interested in how children develop moral judgment, children's understanding of moral rules and social conventions. He believed that children's overall level of cognitive development determined their moral judgment. On the basis of observations he made of children of different ages playing games with rules, such as marbles, he proposed that children's

understanding of rules develops in a series of four stages (Piaget, 1932/ 1965). The first stage emerges at the beginning of the preoperational period. Children at this stage engage in ‘parallel play’, in which each child follows a private set of idiosyncratic rules. For example, a child might sort marbles of different colors into groups or roll all the big ones across the room, followed by all the small ones. These ‘rules’ give the child’s play some regularity, but they are frequently changed and serve no collective purpose such as cooperation or competition. Beginning about age 5, the child develops a sense of obligation to follow rules, treating them as absolute moral imperatives handed down by some authority such For more Cengage Learning textbooks, visit www.cengagebrain.co.uk as God or the child’s parents. Rules are permanent, sacred, and not subject to modification. Obeying them to the letter is more important than any human reason for changing them. For example, children at this stage reject the suggestion that the position of the starting line in the marble game might be changed to accommodate younger children who might want to play. At this stage, children judge an act more by its consequences than by the intentions behind it. Piaget told children several pairs of stories. In one pair, a boy broke a teacup while trying to steal some jam when his mother was not home; another boy, who was doing nothing wrong, accidentally broke a whole trayful of teacups. ‘Which boy is naughtier?’ Piaget asked. Preoperational children tended to judge as naughtier the person in the stories who did the most damage, regardless of the intentions or motivation behind the act. In Piaget’s third stage of moral development, the child begins to appreciate that some rules are social conventions – cooperative agreements that can be arbitrarily changed if everyone agrees. Children’s moral realism also declines: When making moral judgments, children in this stage give weight to subjective considerations such as a person’s intentions, and they see punishment as a human choice rather than as inevitable, divine retribution. The beginning of the formal operational stage coincides with the fourth and final stage in children’s understanding of moral rules. Youngsters show an interest in generating rules to deal even with situations they have never encountered. This stage is marked by an ideological mode of moral reasoning, which addresses wider social issues rather than just personal and interpersonal situations. The American psychologist Lawrence Kohlberg extended Piaget’s work on moral reasoning to adolescence and adulthood (Kohlberg, 1969, 1976). He looked for universal stages in the development of moral judgments by presenting research participants with moral dilemmas in the form of stories. In one story, a man whose dying wife needs a drug he cannot afford pleads with a pharmacist to let him buy the drug at a cheaper price. When the pharmacist refuses, the man decides to steal the drug. Participants are asked to discuss the man’s action. By analyzing answers to several such dilemmas, Kohlberg arrived at six developmental stages of moral judgment, which he grouped into three levels: preconventional, conventional, and postconventional (see Concept Review Table). The answers are scored on the basis of the reasons given for the decision, not on the basis of whether the action is judged to be right or wrong. For example, agreeing that the man should have stolen the drug because ‘If you let your wife die, you’ll get in trouble’ or disagreeing because ‘If you steal the drug, you’ll be caught and sent to jail’ are both scored at Level I, or preconventional. In both instances, the man’s actions are

evaluated as right or wrong on the basis of anticipated punishment. Kohlberg believed that all children are at Level I until about age 10, when they begin to evaluate actions in terms of other people’s opinions, which characterizes the conventional level. Most youngsters can reason at this level by age 13. Following Piaget, Kohlberg argued that only individuals who have achieved formal operational thought are capable of the abstract thinking that is necessary for Level III, postconventional morality, in which actions are evaluated in terms of higher-order ethical

principles. The highest stage, Stage 6, requires the ability to formulate abstract ethical principles and uphold them in order to avoid self-condemnation. Kohlberg reported that fewer than 10 percent of his adult participants showed the kind of 'clear-principled' Stage 6 thinking that is exemplified by the following response of a 16-year-old to the story described earlier: 'By the law of society [the man] was wrong. But by the law of nature or of God the druggist was wrong and the husband was justified. Human life is above financial gain. Regardless of who was dying, if it was a total stranger, man has a duty to save him from dying' (Kohlberg, 1969, p. 244). Before he died, Kohlberg eliminated Stage 6 from his theory; Level III is now sometimes simply referred to as high-stage principled reasoning. Kohlberg presented evidence for this sequence of stages in children from several cultures, including the United States, Mexico, Taiwan, and Turkey (Colby, Kohlberg, Gibbs, & Lieberman, 1983; Nisan & Kohlberg, 1982). On the other hand, there is evidence that people use different rules for different situations and that the stages are not sequential (Kurtines & Greif, 1974). The theory has also been criticized as 'male centered' because it places a 'masculine' style of abstract reasoning based on justice and rights higher on the moral scale than a 'feminine' style of reasoning based on caring and concern for the integrity and continuation of relationships (Gilligan, 1982). Piaget's assertion that young children cannot distinguish between social conventions (rules) and moral prescriptions has also been challenged. In one study, 7-yearold children were given a list of actions and asked to indicate which ones would be wrong even if there were no rules against them. There was widespread agreement among these children that lying, stealing, hitting, and selfishness would be wrong even if there were no rules against them. In contrast, they thought that there was nothing wrong with chewing gum in class, addressing a teacher by his or her first name, boys entering the girls' bathroom, or eating lunch with one's fingers – as long as there were no rules against these acts (Nucci, 1981). CONCEPT REVIEW TABLE Stages of moral reasoning Kohlberg believed that moral judgment develops with age according to these stages. (Kohlberg, L. (1969), 'Stages of Moral Reasoning', from 'Stage and Sequence: The Cognitive Development Approach to Socialization', in Handbook of Socialization Theory and Research, D. A. Goslin (ed.). Reprinted by permission of Rand McNally.) Level I Preconventional morality Stage 1 Punishment orientation (Obeys rules to avoid punishment) Stage 2 Reward orientation (Conforms to obtain rewards, to have favors returned) Level II Conventional morality Stage 3 Good-boy/good-girl orientation (Conforms to avoid disapproval of others) Stage 4 Authority orientation (Upholds laws and social rules to avoid censure of authorities and feelings of guilt about not 'doing one's duty') Level III Postconventional morality Stage 5 Social-contract orientation (Actions guided by principles commonly agreed on as essential to the public welfare; principles upheld to retain respect of peers and, thus, self-respect) Stage 6 Ethical principle orientation (Actions guided by self-chosen ethical principles, which usually value justice, dignity, and equality; principles upheld to avoid self-condemnation) COGNITIVE DEVELOPMENT IN CHILDHOOD For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

88 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT INTERIM SUMMARY l Piaget's theory describes stages in cognitive development. They proceed from the sensorimotor stage (in which an important discovery is object permanence), through the preoperational stage (when symbols begin to be used) and the concrete operational stage (when conservation concepts develop), to the formal operational stage (when hypotheses are tested systematically in problem solving). l New methods of testing reveal that Piaget's theory underestimates children's abilities, and several alternative approaches have been proposed. l Information-processing approaches view cognitive development as reflecting the gradual development of processes such as attention and memory. l Other

theorists emphasize increases in domain-specific knowledge. l Still others, including Vygotsky, focus on the influence of the social and cultural context. l Much of the newest research in children's cognitive development focuses on children's theory of mind, or understanding that other people have beliefs and expectations that can be different from their own and different from reality. l Piaget believed that children's understanding of moral rules and judgments develops along with their cognitive abilities. Kohlberg extended Piaget's work to include adolescence and adulthood. He proposed three levels of moral judgment: preconventional, conventional, and postconventional. CRITICAL THINKING QUESTIONS 1 What does Piaget's theory suggest about the likely success of academic programs for elementary school children that attempt to 'accelerate' children's cognitive development? What do newer theories of cognitive development suggest about these programs? 2 What level of moral reasoning seems to be implied by campaigns designed to discourage young people from using drugs or being sexually active? Can you think of campaign themes that would appeal to a higher stage of moral reasoning? For more Cengage Learning textbooks, visit www.cengagebrain.co.uk PERSONALITY AND SOCIAL DEVELOPMENT Soon after Christine brought baby Mike home from the hospital, she noticed that he seemed different from her first child, Maggie, at the same age. Maggie had been an easy baby to deal with – Christine's mother and sisters had been amazed at how quickly she fell into a regular sleeping and eating schedule, and how easily she adapted to changes. It seemed she could fall asleep anywhere, and she didn't seem to mind being passed around from relative to relative at the family's large, noisy holiday gatherings. Mike wasn't really difficult to deal with, but it took a bit more time and patience to get him on a regular schedule. Every new experience, from his first bath to his first taste of strained peas, met with mild but clear protest from Mike. But Christine soon discovered that if she soothed him, kept trying, and gave him a little time, he eventually adjusted to each new thing (adapted from DeHart et al., 2000, p. 213). Like Christine, parents are often surprised that their second child has a very different personality from their first. As early as the first weeks of life, infants show individual differences in activity level, responsiveness to changes in their environment, and irritability. One infant cries a lot; another cries very little. One endures diapering or bathing without much fuss; another kicks and thrashes. One is responsive to every sound; another is oblivious to all but the loudest noises. Infants even differ in 'cuddliness': Some seem to enjoy being cuddled and mold themselves to the person holding them; others stiffen and squirm (Rothbart & Bates, 1998). The term temperament is used to refer to such mood-related personality characteristics. Temperament The observation that temperamental differences arise early in life challenges the traditional view that all of an infant's behaviors are shaped by its environment. Parents of a fussy baby, for example, tend to blame themselves for their infant's difficulties. But research with newborns has shown that many temperamental differences are inborn and that the relationship between parent and infant is reciprocal – in other words, the infant's behavior also shapes the parent's response. An infant who is easily soothed, who snuggles and stops crying when picked up, increases the parent's feelings of competence and attachment. An infant who stiffens and continues to cry, despite efforts to comfort it, makes the parent feel inadequate and rejected. The more responsive a baby is to the stimulation provided by the parent (snuggling and quieting when held, attending alertly when talked to or played with), the easier it is for parent and child to establish a loving bond.

ª JARENWICKLUND j DREAMSTIME.COM Children differ in their temperaments. A pioneering study of temperament began in the 1950s with a group of 140 middle- and upper-class American infants. The initial data were gathered through interviews with parents and were later supplemented by

interviews with teachers and by scores on tests administered to the children. The infants were scored on nine traits, which were later combined to define three broad temperament types. Infants who were playful, were regular in their sleeping and eating patterns, and adapted readily to new situations were classified as having an easy temperament (about 40% of the sample). Infants who were irritable, had irregular sleeping and eating patterns, and responded intensely and negatively to new situations were classified as having a difficult temperament (about 10% of the sample). Infants who were relatively inactive, tended to withdraw from new situations in a mild way, and required more time than easy infants to adapt to new situations were classified as having a slow to warm up temperament (about 15% of the sample). The remaining 35 percent of the infants were not rated high or low on any of the defining dimensions (Thomas, Chess, Birch, Hertzig, & Korn, 1963). Of the original sample, 133 individuals were followed into adult life and again assessed on temperament and psychological adjustment. The results provide mixed evidence for the continuity of temperament. On the one hand, temperament scores across the first five years of these children's lives showed significant correlations: Children with 'difficult' temperaments were more likely than 'easy' children to have school problems later on. Adult measures of both temperament and adjustment were also significantly correlated with measures of childhood temperament obtained at ages 3, 4, and 5. On the other hand, all the correlations were low (about .3), and when considered separately, most of the nine traits measured showed little or no continuity across time (Chess & Thomas, 1984; Thomas & Chess, 1986, 1977). This early research on the stability of temperament was criticized on several methodological grounds. It relied heavily on parents' reports of their infants' temperaments, and there is reason to believe that parents For more Cengage Learning textbooks, visit www.cengagebrain.co.uk PERSONALITY AND SOCIAL DEVELOPMENT can be biased in their judgments, either rating their baby more positively or negatively than observers rate the baby. Later research, using both parents' reports and direct observation of children's behavior, suggests that the stability of temperamental characteristics shown in the early infant years is low. That is, a child's temperament at two months of age doesn't resemble very closely that child's temperament at age 5 years. But assessments of temperament made once a child is at least in the toddler years do predict the child's emotional and behavioral characteristics later in life (Rothbart & Bates, 1998). In one study, 79 children were categorized at 21 months as either extremely inhibited or uninhibited. At age 13, those who had been categorized as inhibited at 21 months of age scored significantly lower on a test of externalizing, delinquent behavior and aggressive behavior (Schwartz, Snidman, & Kagan, 1996). Other research has found that the tendency to approach or avoid unfamiliar events, which is an aspect of temperament, remains moderately stable over time (Kagan & Snidman, 1991). There is evidence that temperament is at least somewhat influenced by heredity. Several studies show more similarity in temperament between identical twins than between fraternal twins (Rothbart & Bates, 1998). This greater similarity between identical twins than fraternal twins suggests that genes play a role in temperament, because identical twins share the same genetic makeup, but fraternal twins are no more alike genetically than any other two siblings. Researchers emphasize that continuity or discontinuity of temperament is a function of the interaction between the child's genotype (inherited characteristics) and the environment. In particular, they believe that the key to healthy development is a good fit between the child's temperament and the home environment. When parents of a difficult child provide a happy, stable home life, the child's negative, difficult behaviors decline with age (Belsky, Fish, & Isabella, 1991). Thomas and Chess cite the case of Carl, who displayed a very difficult temperament from the first few months of life through age 5. Because Carl's father took delight in his son's 'lusty' temperament and allowed for his initial negative

reactions to new situations, Carl flourished and became increasingly ‘easy’. At age 23 he was clearly classified into the ‘easy’ temperament group. Nevertheless, Carl’s original temperament often emerged briefly when his life circumstances changed. For example, when he started piano lessons in late childhood, he showed an intense negative response, followed by slow adaptability and eventual positive, zestful involvement. A similar pattern emerged when he entered college (Thomas & Chess, 1986). Strong evidence for an interaction between genes and environment in producing a child’s temperament comes from a study of twins raised apart since early in life (Plomin, 1994). Identical twins raised apart showed some similarity in their tendencies to be inhibited and to show

90 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT ª ISTOCKPHOTO.COM/DAMIR CUDIC The infant’s ability to smile may contribute to a mutually reinforcing system of social interaction with its primary caregivers. negative emotions, which could be considered aspects of temperament. Yet, the similarity of these twins raised apart was significantly less than the similarity of identical twins raised together, suggesting that environment does play a role. Early social behavior Within minutes of birth, babies can imitate gross facial expressions of adults, suggesting they enter the world ready for social interaction (Meltzoff & Decety, 2003). By two months of age, the average child smiles at the sight of its mother’s or father’s face. Delighted with this response, parents go to great lengths to encourage it. Indeed, the infant’s ability to smile at such an early age may have evolved precisely because it strengthened the parent–child bond. Parents interpret these smiles to mean that the infant recognizes and loves them, and this encourages them to be even more affectionate and stimulating in response. A mutually reinforcing system of social interaction is thus established and maintained. For more Cengage Learning textbooks, visit www.cengagebrain.co.uk Infants all over the world begin to smile at about the same age, suggesting that maturation plays an important role in determining the onset of smiling. Blind babies also smile at about the same age as sighted infants, indicating that smiling is an innate response (EiblEibesfeldt, 1970). By their third or fourth month, infants show that they recognize and prefer familiar members of the household by smiling or cooing more when seeing these familiar faces or hearing their voices, but they are still fairly receptive to strangers. At about seven or eight months, however, many infants begin to show wariness or distress at the approach of a stranger and protest strongly when left in an unfamiliar setting or with an unfamiliar person. Parents are often disconcerted when their formerly gregarious infant, who had always happily welcomed the attentions of a babysitter, now cries inconsolably when they prepare to leave – and continues to cry for some time after they have left. Although not all infants show this stranger anxiety, the number of infants who do increases dramatically from about eight months of age until the end of the first year. Similarly, distress over separation from the parent reaches a peak between 14 and 18 months and then gradually declines. By the time they are 3 years old, most children are secure enough in their parents’ absence to interact comfortably with other children and adults. The waxing and waning of these two fears appears to be only slightly influenced by conditions of child rearing. The same general pattern has been observed among American children reared entirely at home and among those attending a day care center. Figure 3.11 shows that although the percentage of children who cry when their mother leaves the room varies in different cultures, the age-related pattern of onset and decline is very similar (Kagan, Kearsley, & Zelazo, 1978). How do we explain the systematic timing of these fears? Two factors seem to be important in both their onset and their decline. One is the growth of memory capacity. During the second half of the first year, infants become better able to remember past events and to compare past and present. This makes it possible for the baby to detect, and

sometimes fear, unusual or unpredictable events. The emergence of stranger anxiety coincides with the emergence of fear of a variety of stimuli that are unusual or unexpected. A weird-looking mask or a jack-in-the-box that brings smiles to a four-month-old often causes an eight-month-old to look apprehensive and distressed. As children learn that strangers and unusual objects are not generally harmful, such fears gradually diminish. Memory development is probably also involved in separation anxiety, the child's distress when a caretaker is not nearby. The infant cannot 'miss' the parent unless he or she can recall that parent's presence a minute earlier and compare it with the parent's absence now. When the

African Bushmen (n = 25) Guatemalan Indian (n = 34) Israeli Kibbutz (n = 122) Antigua, Guatemala (n = 36) Percent of children who cried after mother's departure 60 20 0 10 20 30 Age (months) Figure 3.11 Children's Stress at Mother's Departure. Even though the percentages of children who cry when their mothers leave the room varies from one culture to another, the agerelated pattern of onset and decline of such distress is similar across cultures. (Reprinted by permission of the publisher from Infancy: Its pae in Human Development by Jerome Kagan, R. B. Kearsley and P. R. Zelazo, p. 107, Cambridge, Mass.: Harvard University Press, Copyright © 1978 by the President and Fellows of Harvard College.) parent leaves the room, the infant is aware that something is amiss, and this can lead to distress. As the child's memory of past instances of separation improves, the child becomes better able to anticipate the return of the absent parent, and anxiety declines. The second factor is the growth of autonomy, the child's independence from caretakers. One-year-olds are still highly dependent on the care of adults, but children 2 or 3 years old can head for the snack plate or toy shelf on their own. They can also use language to communicate their wants and feelings. Dependence on caregivers in general and on familiar caregivers in particular decreases, and the parent's presence becomes less critical for the child. Attachment The term attachment is used to describe an infant's tendency to seek closeness to particular people and to feel more secure in their presence. Psychologists at first theorized that attachment to the mother developed because she was the source of food, one of the infant's most basic needs. But some facts did not fit. For example, ducklings and baby chicks feed themselves from birth, yet they still follow their mothers about and spend a great deal of time with them. The comfort they derive from the mother's presence cannot come from her role in feeding. A wellknown series of experiments with monkeys also showed that there is more to mother–infant attachment than nutritional needs (Harlow & Harlow, 1969). For more Cengage Learning textbooks, visit www.cengagebrain.co.uk PERSONALITY AND SOCIAL DEVELOPMENT Infant monkeys were separated from their mothers shortly after birth and placed with two artificial 'mothers' constructed of wire mesh with wooden heads. The torso of one mother was bare wire; the other was covered with foam rubber and terry cloth, making it cuddly and easy to cling to (see Figure 3.12). Either mother could be equipped to provide milk by means of a bottle attached to its chest. The experiment sought to determine whether the young monkey would cling to the mother that was always the source of food. The results were clear-cut: No matter which mother provided food, the infant monkey spent its time clinging to the terry-cloth mother. This purely passive but soft-contact mother was a source of security. For example, the obvious fear of the infant monkey placed in a strange environment was allayed if the infant could make contact with the cloth mother. While holding on to the cloth mother with one hand or foot, the monkey was willing to explore objects that were otherwise too terrifying to approach. Although contact with a cuddly, artificial mother provides an important aspect of 'mothering', it is not © MARTIN ROGERS/STOCK BOSTON Figure 3.12 A Monkey's Response to an Artificial Mother. Although it is fed via a wire mother, the infant spends more time with the terry-

cloth mother. The terry-cloth mother provides a safe base from which to explore strange objects.

92 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT enough for satisfactory development. Infant monkeys raised with artificial mothers and isolated from other monkeys during the first six months of life showed bizarre behavior in adulthood. They rarely engaged in normal interaction with other monkeys later on (either cowering in fear or showing abnormally aggressive behavior), and their sexual responses were inappropriate. When female monkeys that had been deprived of early social contact were successfully mated (after considerable effort), they made poor mothers, tending to neglect or abuse their first-born infants – although they became better mothers with their later children. Note, however, that these monkeys were deprived of all social contact. Monkeys with artificial mothers do fine as adults if they are allowed to interact with their peers during the first six months. Although generalizing from research on monkeys to human development requires care, there is evidence that the human infant's attachment to the primary caregiver serves the same functions. Most of the work on attachment in human infants originated with the psychoanalyst John Bowlby in the 1950s and 1960s. Bowlby became interested in attachment while watching the behaviors of infants and young children who were in residential nurseries and hospital wards and therefore separated from their mothers. His research convinced him that a child's failure to form a secure attachment to one or more persons in the early years is related to an inability to develop close personal relationships in adulthood (Bowlby, 1973). Mary Ainsworth, one of Bowlby's associates, made extensive observations of children and their mothers in Uganda and the United States and then developed a laboratory procedure for assessing the security of a child's attachments from about 12 to 18 months of age (Ainsworth, Blehar, Waters, & Wall, 1978). This procedure, called the strange situation, is a series of episodes in which a child is observed as the primary caregiver leaves and returns to the room (see Table 3.1). Throughout this sequence, the baby is observed through a one-way mirror and several observations are recorded: the baby's activity level and play involvement, crying and other distress signs, proximity to and attempts to gain the attention of the mother, proximity to and willingness to interact with the stranger, and so on. On the basis of their behaviors, babies are categorized into one of the following three groups: Securely attached. Regardless of whether they are upset at the mother's departures (episodes 3 and 5), babies who are classified as securely attached seek to interact with her when she returns. Some are content simply to acknowledge her return from a distance while continuing to play with the toys. Others seek physical contact with her. Still others are completely preoccupied with the mother throughout the entire session, showing intense distress when she leaves. The majority of babies fall into this category. Insecurely attached: avoidant. These babies avoid interacting with the mother during the reunion episodes. Some Table 3.1 Episodes in the strange situation procedure

1. A mother and her child enter the room. The mother places the baby on the floor, surrounded by toys, and goes to sit at the opposite end of the room.
2. A female stranger enters the room, sits quietly for a minute, converses with the mother for a minute, and then attempts to engage the baby in play with a toy.
3. The mother leaves the room unobtrusively. If the baby is not upset, the stranger returns to sitting quietly. If the baby is upset, the stranger tries to soothe him or her.
4. The mother returns and engages the baby in play while the stranger slips out of the room.
5. The mother leaves again, this time leaving the baby alone in the room.
6. The stranger returns. If the baby is upset, the stranger tries to comfort him or her.

7. The mother returns and the stranger slips out of the room. ignore her almost entirely; others display mixed attempts to interact and avoid interacting. Avoidant babies may pay little attention to the mother when she is in the room and often do not seem distressed when she leaves. If they are distressed, they are as easily comforted by the stranger as by the mother. Insecurely attached: ambivalent. Babies are classified as ambivalent if they show resistance to the mother during the reunion episodes. They simultaneously seek and resist physical contact. For example, they may cry to be picked up and then squirm angrily to get down. Some act very passive, crying for the mother when she returns but not crawling toward her, and then showing resistance when she approaches. Because some babies did not seem to fit any of these categories, studies have included a fourth category, disorganized (Main & Solomon, 1986). Babies in this category often show contradictory behaviors. For example, they may approach the mother while taking care not to look at her, approach her and then show dazed avoidance, or suddenly cry out after having settled down. Some seem disoriented, appear emotionless, or look depressed. Babies who are maltreated or whose parents are being treated for mental disorders are more likely to fall into this category. Parenting styles In attempting to account for differences in attachment among babies, researchers have directed most of their attention to the behavior of the primary caregiver, usually

the mother. The main finding is that a caregiver's sensitive responsiveness to the baby's needs produces secure attachment. Mothers of securely attached babies usually respond promptly when the baby cries and behave affectionately when they pick up the baby. They also tailor their responses to the baby's needs (Clarke-Stewart, 1973). In feeding, for example, they use an infant's signals to determine when to begin and end feeding, and they attend to the baby's food preferences. In contrast, mothers of babies who are insecurely attached respond according to their own needs or moods rather than according to signals from the baby. For example, they respond to the baby's cries for attention when they feel like cuddling the baby but ignore such cries at other times (Stayton, 1973). Not all developmental psychologists agree that the caregiver's responsiveness is the major cause of an infant's attachment behaviors. They call attention to the baby's own inborn temperament (Campos, Barrett, Lamb, Goldsmith, & Stenberg, 1983; Kagan, 1984). Perhaps the temperaments that make some babies 'easy' also make them more securely attached than do the temperaments of 'difficult' babies. And, as noted earlier, a parent's response to a child is often itself a function of the child's own behavior. For example, mothers of difficult babies tend to spend less time playing with them (Green, Fox, & Lewis, 1983). Attachment patterns may reflect this interaction between a baby's temperament and the parents' responsiveness. In reply, attachment theorists point to evidence that supports the 'sensitive responsiveness' hypothesis. For example, in the first year of life, an infant's crying changes much more than the mother's responsiveness to the crying does. Moreover, the mother's responsiveness over a 3-month period predicts the infant's crying over the next three months significantly better than the infant's crying predicts the mother's subsequent responsiveness to crying. In short, the mother appears to influence the infant's crying more than the infant influences the mother's ª AMI BEYER j DREAMSTIME.COM Attachment patterns reflect a baby's temperament and a parent's responsiveness. For more Cengage Learning textbooks, visit www.cengagebrain.co.uk PERSONALITY AND SOCIAL DEVELOPMENT responsiveness to crying (Bell & Ainsworth, 1972). In general, the mother's behavior appears to be the most important factor in establishing a secure or insecure attachment (Isabella & Belsky, 1991). Other research may resolve this debate. Recall that

the attachment classification is based not on the baby's distress when the mother leaves but on how the baby reacts when she returns. It appears that an infant's temperament predicts the former but not the latter (Frodi & Thompson, 1985; Vaughn, Lefever, Seifer, & Barglow, 1989). Babies with easy temperaments typically are not distressed when the mother leaves. When she returns, they tend to greet her happily – showing secure attachment – or show the avoidant type of insecure attachment. Babies with difficult temperaments typically are distressed when the mother leaves. When she returns, they tend to seek her out and cling to her – showing secure attachment – or show the ambivalent type of insecure attachment (Belsky & Rovine, 1987). Children's overall reaction to the departure and return of their primary caregiver is a function of both the caregiver's responsiveness to the child and the child's temperament. Later development A baby's attachment classification remains quite stable when retested several years later – unless the family experiences major changes in life circumstances (Main & Cassidy, 1988; Thompson, Lamb, & Estes, 1982). Stressful life changes are likely to affect parental responsiveness to the baby, which, in turn, affects the baby's feelings of security. Early attachment patterns also appear to be related to how children cope with new experiences. In one study, 2-year-olds were given a series of problems requiring the use of tools. Some of the problems were within the child's capacity; others were quite difficult. Children who had been rated as securely attached at 12 months approached the problems with enthusiasm and persistence. When they encountered difficulties, they seldom cried or became angry. Rather, they sought help from adults. Children who had earlier been rated as insecurely attached behaved quite differently. They easily became frustrated and angry, seldom asked for help, tended to ignore or reject directions from adults, and quickly gave up trying to solve the problems (Matas, Arend, & Sroufe, 1978). These and similar studies suggest that children who are securely attached by the time they enter their second year are better equipped to cope with new experiences. However, we cannot be certain that the quality of children's early attachments is directly responsible for their later competence in problem solving. Parents who are responsive to their children's needs in infancy probably continue to provide effective parenting during early childhood – encouraging autonomy and efforts to cope with new experiences, yet ready with help when needed.

94 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT Table 3.2 The percentages of attachment styles, as measured by the Strange Situation, varies dramatically across different cultures. Perecentages do not add to 100 because attachment styles could not be reliably coded for some infants or were coded as Type D. (Adapted from Thompson, 1998). Avoidant Secure Anxious Sweden 21.57% 74.51% 3.92% Israel 8.43% 56.63% 33.73% Great Britain 22.22% 75.00% 2.78% Japan 0.00% 68.33% 31.67% Germany 48.9% 32.65% 12.24% Netherlands 34.15% 5.85% 0.00% United States 21.70% 66.04% 12.26% A child's competence may therefore reflect the current state of the parent–child relationship rather than the relationship that existed two years earlier. Moreover, children's temperament – which, as we saw earlier, affects their behavior in the strange situation procedure – might also influence their competence as preschoolers. Cultural differences in attachment classifications Although Ainsworth conducted some research in Uganda, the majority of her work was in middle-class American samples. Subsequent research suggested there is wide variation in the percentages of children classified into the traditional attachment categories based on their responses to the strange situation paradigm (see Table 3.2). For example, the majority of German infants were categorized as having either an avoidant or anxious attachment style, and much larger percentages of Japanese and Israeli infants were categorized as having the anxious attachment style compared to American, Dutch, Swedish or British infants (Thompson, 1998).

These cultural differences may arise because the strange situation task is an inappropriate indicator of the quality of the relationship between mother and child in many cultures (Keil, in press). For example, Japanese infants typically are not separated from their mothers much at all in their early years, thus the forced separation created by the strange situation may be particularly frightening to them, leading them to be classified as ‘insecure: anxious’. In contrast, some German children are encouraged to be independent from their mothers at an early age; their responses to the strange situation may have suggested they were ‘insecure: avoidant’ when they were really demonstrating their familiarity with independence. This is not to say that there are not differences in interpersonal styles across cultures. Rather, results from the strange situation must be understood within the cultural milieu of the child, and not misinterpreted to conclude that some cultures are better at raising secure children than others. Self-concept If you stealthily put a red smudge on the forehead of an 18month-old child without her realizing it, then put her in front of a mirror, she will reach up and touch the mark on her head (Gallup, 1998). This rudimentary test, called the mirror test, indicates that children this young have some sense that the image in the mirror is themselves, and that it is different from what they usually look like. Prior to about 18 months, children in the mirror test will either not reach up and touch the mark on their own head or will try to touch the mark on the ‘other child’s’ head in the mirror. Children’s self-concepts grow steadily through development, and encompass many different aspects of self’ (Harter, 1998; Neisser, 1988). These may include a sense of their bodies in space and a sense of the self as continuous in time (‘I am who I am, yesterday and today’). Children develop a sense of themselves as social agents interacting with others and a sense of the self in the broader social and cultural context, including their roles in relation to others. Finally, as we discussed somewhat in the section on ‘theory of mind’, children have a sense of the self as a private entity that others do not have direct access to. Self-esteem One aspect of the self that has been studied extensively in children is self-esteem, which we might define as the value-laden sense of self (Harter, 1998). Children’s selfesteem generally shows several patterns of change from preschool into the adolescent years. Preschoolers tend to have extremely positive views of themselves that are sometimes comically unrealistic. A 3-year-old may boast ª HALLGERD j DREAMSTIME.COM Children’s self-concepts develop as they grow.

that he is the bravest, fastest, smartest kid around! This extreme self-optimism may be adaptive for the young child, giving him confidence to persist even in the face of frequent failures. Children in the early school years tend to be positive, but not as unrealistically positive as preschoolers. They may compare themselves to others, but more often compare themselves to their younger selves, commenting on how much taller, stronger, or bigger they now are (Ruble & Frey, 1991). They may become discouraged if they fail at tasks (Lewis et al., 1992), but failures usually do not have a persistent effect on their general sense of self. In middle childhood (roughly ages 8-12), children engage in considerably more comparisons of themselves and their skills to other children, and these social comparisons begin to influence the children’s self-esteem (Frey & Ruble, 1990). For example, a child may notice that she can’t kick the ball as far as her soccer teammates, or run as fast, and conclude that she is not as good an athlete as others. Children’s self-esteem is often domain-specific; they will tell you they are not a good athlete, but they are good at math, for example. But although children may differentiate between their abilities in different domains, they are beginning to make trait-attributions for themselves, for example, believing they will never be good at athletics, but they will continue to be good at math. Finally, in adolescence and young adulthood, social comparison becomes key to self-esteem. Young people care deeply about how

they compare to others, and what others think of them. These social comparisons and evaluations can have profound effects on how positively they think of themselves (although young people differ greatly in how susceptible they are to these evaluations). Their sense of self becomes complex, and they increasingly think of themselves in terms of enduring traits and dispositions. Moreover, in many societies, young people must begin making life choices based on their own, and others', evaluations of their talents and capabilities. ª MONKEY BUSINESS IMAGES j DREAMSTIME.COM Peers are increasingly important to self-concept in adolescence. For more Cengage Learning textbooks, visit www.cengagebrain.co.uk PERSONALITY AND SOCIAL DEVELOPMENT Gender identity and sex typing Most children acquire a gender identity, a firm sense of themselves as either male or female. But most cultures elaborate the biological distinction between male and female into a sprawling network of beliefs and practices that permeate virtually every domain of human activity. Different cultures may define the socially correct behaviors, roles, and personality characteristics differently, and these expectations may change over time within a culture. But whatever its current definition, each culture still strives to transform male and female infants into 'masculine' and 'feminine' adults. The term sex typing refers to the acquisition of behaviors and characteristics that a culture considers appropriate to one's sex. Note that gender identity and sex typing are not the same thing. A girl may have a firm acceptance of herself as female yet not avoid all behaviors that are labeled masculine. But are gender identity and sex typing simply the product of cultural prescriptions and expectations, or are they partly a product of 'natural' development? In this section we will examine four theories that attempt to answer this question. Social learning theory. The account of sex typing put forward by social learning theory emphasizes the rewards and punishments that children receive for sex-appropriate and sex-inappropriate behaviors, respectively, and the ways children learn sex-typed behavior by observing adults (Bussey & Bandura, 2004). Observational learning also enables children to imitate same-sex adults and thereby acquire sex-typed behaviors. Two broader points about social learning theory are worth noting. Social learning theory treats sex-typed behaviors as any other learned behaviors. No special psychological principles or processes must be proposed to explain how children become sex typed. Second, if there is nothing special about sex-typed behaviors, then sex typing itself is neither inevitable nor unmodifiable. Children become sex typed because sex happens to be the basis on which their culture chooses to base reward and punishment. If a culture becomes less sex typed in its ideology, children become less sex typed in their behavior. Considerable evidence supports the social learning account of sex typing. Parents do differentially reward and punish sex-appropriate and sex-inappropriate behaviors, as well as serve as the child's first models of masculine and feminine behavior. From infancy on, most parents dress boys and girls differently and provide them with different toys. Observations in the homes of preschool children have found that parents reward their daughters for dressing up, dancing, playing with dolls, and simply following them around but criticize them for manipulating objects, running, jumping, and climbing. In contrast, parents reward

96 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT ª JONATHA BORZICCHI j DREAMSTIME.COM Some theorists argue that parents impose sex-roles on their children by insisting they behave in sex-stereotyped behaviors, such as girls competing in beauty contests. their sons for playing with blocks but criticize them for playing with dolls, asking for help, or even volunteering to be helpful (Fagot, 1978). Parents demand more independence of boys and have higher expectations of them. They also respond less quickly to boys' requests for help and focus less on the interpersonal aspects of a task. And finally, parents punish boys both verbally and physically more often than

they punish girls (Maccoby & Jacklin, 1974). In reacting differently to boys and girls, some researchers suggest, parents may not be imposing their own stereotypes on them but simply reacting to innate differences between the behaviors of the two sexes (Maccoby, 1998). Even as infants, boys demand more attention than girls do, and research suggests that human males are innately more physically aggressive than human females (Maccoby & Jacklin, 1974), which could be why parents punish boys more often. There For more Cengage Learning textbooks, visit www.cengagebrain.co.uk may be some truth to this, but it is also clear that adults approach children with stereotyped expectations that lead them to treat boys and girls differently. For example, adults viewing newborn infants through the window of a hospital nursery believe that they can detect sex differences. Infants thought to be boys are described as robust, strong, and large featured; identical-looking infants thought to be girls are described as delicate, fine featured, and 'soft' (Luria & Rubin, 1974). Fathers appear to be more concerned with sex-typed behavior than mothers are, particularly with their sons. They react more negatively than mothers by interfering with the child's play or expressing disapproval when their sons play with 'feminine' toys. Fathers are less concerned when their daughters engage in 'masculine' play, but they still show more disapproval than mothers do (Langlois & Downs, 1980). But if parents and other adults treat children in sex-stereotyped ways, children themselves are the real 'sexists'. Peers enforce sex stereotyping much more severely than parents. Boys, in particular, criticize other boys when they see them engaged in 'girls' ' activities. They are quick to call another boy a sissy if he plays with dolls, cries when he is hurt, or shows concern toward another child in distress. In contrast, girls seem not to object to other girls who play with 'boys' ' toys or engage in masculine activities (Langlois & Downs, 1980). Although social learning theory plausibly explains many phenomena of sex typing, there are some observations that the theory cannot easily explain. First, it treats the child as a passive recipient of environmental forces: Society, parents, peers, and the media all 'do it' to the child. This view of the child is inconsistent with the observation that children themselves construct and enforce their own exaggerated version of society's gender rules more insistently than most of the adults in their world. Second, there is an interesting developmental pattern to the child's view of gender rules. For example, a majority of 4-year-olds and 9-year-olds believe that there should be no sex-based restrictions on one's choice of occupation: Let women be doctors and men be nurses if they wish. Between these ages, however, children hold more rigid opinions. Most 6- and 7-year-olds believe that there should be sex-based restrictions on occupations. Do these observations sound familiar? If you think these children sound like Piaget's preoperational moral realists, you are right. That is why Kohlberg (1966) developed a cognitive-developmental theory of sex typing based directly on Piaget's theory of cognitive development. Cognitive-developmental theory. Although 2-year-olds can identify their own sex in a photograph of themselves and

are usually able to identify the sex of a stereotypically dressed man or woman in a photograph, they cannot accurately sort photographs into 'boys' and 'girls' or predict another child's toy preferences on the basis of sex (Thompson, 1975). At about 21 2 years, however, a more conceptual awareness of sex and gender begins to emerge, and at this point cognitive-developmental theory becomes relevant. In particular, the theory proposes that gender identity plays a critical role in sex typing. The sequence is 'I am a girl [boy]; therefore I want to do girl [boy] things' (Kohlberg, 1966). In other words, it is the motive to behave consistently with one's gender identity – not to obtain external rewards – that prompts children to behave in sex-appropriate ways. As a result, they willingly take on the task of sex typing themselves – and their peers. According to cognitive-developmental theory, gender identity itself develops slowly over the years

from 2 to 7, in accordance with the principles of the preoperational stage of cognitive development. In particular, preoperational children's overreliance on visual impressions and their resulting inability to conserve an object's identity when its appearance changes become relevant to their concept of sex. Thus, 3-year-olds can separate pictures of boys and girls, but many of them cannot say whether they themselves will be a mommy or a daddy when they grow up (Thompson, 1975). The understanding that a person's sex remains the same despite changes in age and appearance is called gender constancy and is analogous to conservation of quantity with water, clay, and checkers. Substantial evidence supports Kohlberg's general sequence of sex-role identity development (Szkrybalo & Ruble, 1999). The notion that sex-role identity becomes stable only after gender constancy is in place has not been supported. Children have strong and clear preferences for activities deemed appropriate for their sex long before they attain gender constancy (Maccoby, 1998). In addition, Kohlberg's theory, as well as social learning theory, fails to address the fundamental question of why children should organize their self-concepts around their maleness or femaleness in the first place. Why should sex have priority over other potential categories of self-definition? It is this question that the next theory, gender schema theory, was designed to answer (Bem, 1985). Gender schema theory. Both social learning theory and cognitive-developmental theory provide reasonable explanations for how children might acquire information about their culture's rules and norms for sex-appropriate behaviors, roles, and personality characteristics. But the culture is also teaching the child a much deeper lesson – that the distinction between male and female is so For more Cengage Learning textbooks, visit www.cengagebrain.co.uk PERSONALITY AND SOCIAL DEVELOPMENT important that it should be used as a lens through which all other aspects of culture are viewed. Consider, for example, the child who first enters a day care center offering a variety of new toys and activities. The child could use many potential criteria in deciding which toys and activities to try. Should she consider indoor or outdoor activities? Does he prefer a toy that involves artistic production or one that requires mechanical manipulation? How about an activity that can be done with other children or one that can be done in solitude? But of all the potential criteria, the culture emphasizes one above all others: 'Be sure to consider first and foremost whether the toy or activity is appropriate for your sex'. At every turn, the child is encouraged to look at the world through the lens of gender – in other words, in terms of the gender schema, or set of beliefs about gender (Bem, 1993). Parents and teachers do not directly teach children about the gender schema. Instead, the lesson is embedded in the daily practices of the culture. Consider, for example, a teacher who wishes to treat children of both sexes equally. She lines them up at the drinking fountain by alternating boys and girls. If a boy is selected to be hall monitor on Monday, a girl will be hall monitor on Tuesday. Equal numbers of boys and girls must be selected for the class play. This teacher believes that she is teaching her students the importance of gender equality. She is right, but she is also unwittingly teaching them the importance of gender. The students learn that no matter how unrelated to gender an activity might seem, one cannot engage in it without paying attention to the distinction between boys and girls. Children also learn to apply the gender schema to themselves, to organize their self-concepts around their maleness or femaleness, and to judge their self-worth in terms of their answer to the question, 'Am I masculine or feminine enough?' For these reasons, gender schema theory is a theory of gender identity as well as of sex typing. Gender schema theory, then, is one possible answer to the question of why children organize their selfconcepts around their maleness or femaleness. Like cognitive-developmental theory, gender schema theory views the developing child as an active agent in his or her own socialization. But like social learning theory, gender schema theory implies that sex typing is neither inevitable nor unmodifiable. According to this theory, children become

sex typed because sex happens to be a major focus around which their culture chooses to organize its view of reality. The theory implies that if the culture becomes less sex typed, children will become less sex typed in their behaviors and selfconcepts.

98 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT INTERIM SUMMARY l Some early social behaviors, such as smiling, reflect innate responses that appear at about the same time in all infants, including blind infants. The emergence of many later social behaviors – including wariness of strangers and distress over separation from primary caregivers – appears to depend on the child's developing cognitive skills. l An infant's tendency to seek closeness to particular people and to feel more secure in their presence is called attachment. Attachment can be assessed in a procedure called the strange situation, a series of episodes in which a child is observed as the primary caregiver leaves and returns to the room. l Securely attached infants seek to interact with a caretaker who returns from an absence. l Insecurely attached: avoidant infants avoid a caretaker returning from an absence. l Insecurely attached: ambivalent infants show resistance to a caretaker returning from an absence. l Disorganized infants show contradictory behaviors (sometimes avoidant, sometimes approaching) to a caretaker returning from an absence. l A caregiver's sensitive responsiveness to a baby's needs has important influences on the security of the attachment. The baby's temperament also plays a role. l There are cultural differences in the percentage of babies classified in various attachment categories. These differences may indicate that the strange situation paradigm is not an appropriate test of attachment across cultures. l Children's self-concepts grow throughout development, from a generally positive sense of the self to a more complex, domain-specific sense of one's enduring traits and capabilities. l Gender identity is the degree to which one regards oneself as male or female. It is distinct from sex typing, the acquisition of characteristics and behaviors that society considers appropriate for one's sex. l Social learning theory emphasizes the rewards and punishments that children receive for sex-appropriate and sex-inappropriate behaviors, as well as a process of identification with same-sex adults that is based on observational learning. l A cognitive-developmental theory of gender identity and sex typing holds that once children can identify themselves as male or female, they are motivated to acquire sex-typed behaviors. Their understanding of sex and gender corresponds to Piaget's stages of cognitive development, especially their understanding of gender constancy – the realization that a person's For more Cengage Learning textbooks, visit www.cengagebrain.co.uk sex remains constant despite changes of age and appearance. l Gender schema theory seeks to explain why children base their self-concept on the male–female distinction in the first place. It emphasizes the role of culture in teaching children to view the world through the lens of gender. CRITICAL THINKING QUESTIONS 1 Some psychologists have suggested that our childhood attachment styles can influence the kinds of romantic relationships we form as adults. What forms might the attachment styles discussed in this chapter assume in an adult romantic relationship? Can you relate your own adult 'attachment styles' to your childhood attachment style or to features of your childhood environment? 2 Would your parents have characterized your infant personality as easy, difficult, or slow to warm up? Which aspects of your current personality seem to be primarily a reflection of your inborn temperament, which aspects seem to reflect the way you were raised, and which aspects seem to reflect a blend or interaction between nature and nurture? ADOLESCENT DEVELOPMENT Adolescence refers to the period of transition from childhood to adulthood. It extends roughly from age 12 to the late teens, when physical growth is nearly complete. During this period, the young person becomes sexually mature and establishes an identity as an individual apart from the family. Sexual development Puberty, the

period of sexual maturation that transforms a child into a biologically mature adult capable of sexual reproduction, takes place over a period of three or four years. It starts with a period of very rapid physical growth (the so-called adolescent growth spurt) accompanied by gradual development of the reproductive organs and secondary sex characteristics (breast development in girls, beard growth in boys, and the appearance of pubic hair in both sexes).

CUTTING EDGE RESEARCH Adolescents and the Internet The Internet is a fixture in the lives of adolescents in many nations. Between 85 and 98 percent of teenagers in the United Kingdom and the United States use the Internet, and over half log on daily, surfing the web, trading emails, and creating their own websites (Linehart, Madden, & Hitten, 2005). The most frequent use of the Internet among teens is communicating with friends (Gross, 2004). Through emails, PDAs, text messages on cell phones, and social networking sites, teens communicate with friends they way they formerly did by phone, sharing personal information and gossip. Given the prevalence of Internet use among today's youth, researchers have begun to assess whether adolescents' Internet use is good or bad for their development and well-being. One of the greatest fears for parents is that their Internetsurfing teens will become victims of online sexual predators. Sexual solicitation and harassment are not rare experiences for teens. One study of over 1500 adolescents in the U.S. found that one in four had experienced at least one unwanted sexual solicitation or harassment over the Internet in the last year (Mitchell, Ybarra, & Finkelhor, 2007). The youths who had been victimized were more depressed, anxious, and afraid than those who had not been victimized. Some youths engage in risky behaviors that increase their risk of victimization. A study of teenagers in New Zealand found that onethird had given out personal information on the Internet, and one-quarter had actually met in person with someone they had met on the Internet (Berson & Berson, 2005). Another concern is that some troubled teens use the Internet to facilitate their maladaptive behaviors. For example, one study found over 400 message boards for 'self-injurors', people who engage in cutting, burning, and otherwise harming themselves (Whitlock, Powers, & Eckenrode, 2006). The vast majority of visitors to these sites were teenage girls. On the one hand, these sites provided these girls with an opportunity to talk about their behaviors and their feelings with supportive others. Many girls who engage in self-injury are Menarche, the first menstrual period, occurs relatively late in puberty – about 18 months after a girl's growth spurt has reached its peak. The first menstrual periods tend to be irregular, and ovulation (the release of a mature egg) does not usually begin until a year or so after menarche. A boy's first ejaculation typically occurs about two years after the growth spurt begins. The first seminal fluid does not contain sperm; the number of sperm and their fertility gradually increase. There is wide variation in the age at which puberty begins and the rate at which it progresses. Some girls attain menarche before age 11, others as late as 17, and the average age is about 12 years. Boys, on the average, experience their growth spurt and mature about two For more Cengage Learning textbooks, visit www.cengagebrain.co.uk ADOLESCENT DEVELOPMENT depressed and isolated, hiding their self-injury from their parents and friends, but desperate to talk to someone. These message boards provide social support and encouragement to seek professional help. On the other hand, these message boards also may normalize self-injury, making it seem common and acceptable, thereby reinforcing the behaviors. Some boards even provide 'how to' instructions on self-injury, and on hiding self-injuries from others. Similar concerns have been raised about message boards for people with eating disorders, which normalize the behavior and provide 'training' as to how to successfully engage in bingeing, purging, and selfstarvation. There are also many benefits to Internet use for teens, however. Researchers gave a group of African-American teens home access

to the Internet, and found that those who used the Internet more showed increases in standardized academic test scores over a 16-month period (Jackson et al., 2007). The authors speculate that engagement in the Internet provided youths with opportunities to improve reading skills, and generally increased their motivation to learn. Internetbased programs are also providing health interventions to people who might not otherwise have access to them. A weight-loss program called Hipteens included exercises for overweight teen girls to evaluate their food intake, plan dietary changes, recognize triggers for eating, and communicate with personal counselors (Williamson et al., 2007). The adolescents who participated in the program lost significantly more body fat over the first six months than a control group of adolescents who did not participate in the program. As adolescents' use of the web-based program declined beyond the initial six months, however, they tended to gain back the weight. Thus, it seems that the Internet can be both a danger and detriment in teens' lives, and a benefit and force for positive change. Supervision by parents of their adolescents' Internet use is an important safeguard to increase the good, and protect against the bad that the Internet can bring. years later than girls. They begin to ejaculate semen with live sperm sometime between the ages of 12 and 16; the average age is 141 2. The wide variation in the timing of puberty is strikingly apparent in classrooms of young adolescents. Some of the girls look like mature women with fully developed breasts and rounded hips; others still have the size and shape of little girls. Some of the boys are gangly adolescents; others look much as they did at the age of 9 or 10. (See the discussion of hormonal changes at puberty in Chapter 10.) Psychological effects of puberty Conventional wisdom holds that adolescence is a period of 'storm and stress', characterized by moodiness, inner

100 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT ªISTOCKPHOTO.COM/CHRISTOPHER PATTBERG There is wide variation in the age at which puberty begins and the rate at which it progresses. As a result, some adolescents may be much taller and more physically mature than others of the same age. turmoil, and rebellion. Modern research has largely not supported this view (Steinberg & Morris, 2001). Many adolescents do experiment with worrisome behavior, but experimentation leads to enduring problems in only a small subset of adolescents. Many adolescents experiment with alcohol during high school or do something that is against the law, but most of them do not develop an alcohol problem or a criminal career (Farrington, 1995). In addition, those adolescents who do show serious behavioral or emotional problems tend to have a history of similar problems during childhood. For example, most adolescent delinquents had recurrent problems with the law from an early age (Moffitt, 1993). Similarly, most adolescents who become seriously depressed suffered from anxiety or other types of psychological distress as children (Zahn-Waxler et al., 2000). Some of the upsurge in problems in adolescence may be linked directly to the hormonal changes of puberty (Buchanan, Eccles, & Becker, 1992), but many are related to the personal and social effects of physical changes and, most important, the timing of those changes. Being an early or late maturer (one year earlier or later than average) affects adolescents' satisfaction with their appearance and their body image. In general, 12–13-yearold boys who have reached puberty report positive moods more often than their prepubertal male classmates, and they tend to be more satisfied with their weight and their overall appearance than later-maturing boys – a reflection of the importance of strength and physical prowess for males in our society. But early-maturing boys also tend to have less self-control and emotional stability than latermaturing boys. They are more likely to smoke, drink, use drugs, and get into trouble with the law (Williams & For more Cengage Learning textbooks, visit www.cengagebrain.co.uk Dunlop, 1999). In contrast, late-maturing boys feel worst about themselves at age 12 but typically end up as the healthiest group

by age 18 (Petersen, 1989). Early maturation has the opposite effect on the selfesteem of girls. Compared with later maturers, earlier maturers experience more depression and anxiety, have lower self-esteem, and are generally less satisfied with their weight and appearance (Caspi & Moffit, 1991; Ge et al., 1996). They tend to be embarrassed that their bodies are more womanly than those of their female classmates – particularly because current standards for female attractiveness emphasize a lean look. Although early maturers also achieve early popularity, this is partly because they are seen as sexually precocious. They are also more likely to have conflicts with their parents, to drop out of school, and to have both emotional and behavioral problems (Caspi & Moffitt, 1991; Stattin & Magnusson, 1990). Nevertheless, early adolescence is relatively trouble-free for most males and females. Parents often report a lot of storm and stress in their relationships with their adolescents, and here the research largely backs up the common lore (Steinberg & Morris, 2001). Bickering and squabbling between parents and their offspring increase in adolescence, and there is a decline in how close parents and adolescents feel to each other (Larson & Richards, 1991). Adolescents typically pull away from their parents in an attempt to forge their own individual identities, and many parents are distressed by this withdrawal (Silverberg & Steinberg, 1990). In most families, however, the period of increased conflict in early adolescence is followed by the establishment of a new parent–adolescent relationship that is less volatile and more egalitarian. Parents who remain authoritative – warm and supportive but firm and clear about rules and their enforcement – tend to have adolescents who come through the adolescent years with the least enduring problems (Steinberg & Morris, 2001). In contrast, adolescents whose parents are authoritarian (with rigid rules and little obvious warmth in their dealings with their children) or overly permissive tend to encounter more emotional and behavioral problems (Baumrind, 1980). Identity development The psychoanalyst Erik Erikson believed that the major task confronting the adolescent is to develop a sense of identity, to find answers to the questions ‘Who am I?’ and ‘Where am I going?’ Although Erikson coined the term identity crisis to refer to this active process of self-definition, he believed that it is an integral part of healthy psychosocial development. Similarly, most developmental psychologists believe that adolescence should be a period of role experimentation for young people to explore various behaviors, interests, and ideologies. Many beliefs,

ª ACE STOCK LIMITED / ALAMY In most families, conflict between teens and parents is short-lived. roles, and ways of behaving may be tried on, modified, or discarded in an attempt to shape an integrated concept of the self. Adolescents try to synthesize these values and appraisals into a consistent picture. If parents, teachers, and peers project consistent values, the search for identity is easier. In a simple society in which adult models are few and social roles are limited, the task of forming an identity is relatively easy. In a society as complex as ours, it is a difficult task for many adolescents. They are faced with an almost infinite array of possibilities regarding how to behave and what to do in life. As a result, there are large differences among adolescents in how the development of their identity proceeds. Moreover, any particular adolescent’s identity may be at different stages of development in different areas of life (for example, sexual, occupational, and ideological). Ideally, the identity crisis should be resolved by the early or mid-twenties so that the individual can move on to other life tasks. When the process is successful, the individual is said to have achieved an identity – a coherent ADOLESCENT DEVELOPMENT sense of sexual identity, vocational direction, and ideological worldview. Until the identity crisis is resolved, the individual has no consistent sense of self or set of internal standards for evaluating his or her self-worth in major

areas of life. Erikson called this unsuccessful outcome identity confusion. Erikson's theory about adolescent identity development has been tested and extended by other researchers (see Steinberg & Morris, 2001). On the basis of openended interviews, James Marcia (1966, 1980) arrived at four identity statuses or positions, based on whether the person perceives an identity issue and whether a resolution has been reached: Identity achievement. Individuals in this status have passed through an identity crisis, a period of active questioning and self-definition. They are committed to ideological positions that they have worked out for themselves, and they have decided on an occupation. They have begun to think of themselves as a future doctor, not just a pre-med chemistry major. They have reexamined their family's religious and political beliefs and discarded those that don't seem to fit their identity. Foreclosure. Those in this status are also committed to occupational and ideological positions, but they show no signs of having gone through an identity crisis. They have accepted their family's religion without question. When asked about politics, they often say that they have never given it much thought. Some of them seem committed and cooperative; others seem rigid, dogmatic, and conforming. They give the impression that they would be lost if a major event challenged their unexamined rules and values. Moratorium. These young people are in the midst of an identity crisis. They are actively seeking answers but have not resolved the conflicts between their parents' plans for them and their own interests. They may express a set of political or religious beliefs with great intensity for a while, only to abandon them after a period of reconsideration. At best, they seem sensitive, ethical, and open-minded; at worst, they appear anxiety-ridden, self-righteous, and vacillating (Scarr, Weinberg, & Levine, 1986). Identity diffusion. This is Marcia's term for what Erikson calls identity confusion. Some individuals in this category have had an identity crisis; others have not. In either case, they still have no integrated sense of themselves. They say that it might be 'interesting' to go to law school or start a business, but they are not taking steps in either direction. They say that they are not interested in religion or politics. Some seem cynical, and others shallow and confused. Some, of course, are still too young to have reached the identity development of adolescence.

SEEING BOTH SIDES HOW INSTRUMENTAL ARE PARENTS IN THE DEVELOPMENT OF THEIR CHILDREN? Parents have no lasting influence on the personality or intelligence of their children Judith Rich Harris, award winning psychologist and author (The Nurture Assumption, No Two Alike) Your parents took care of you when you were little. They taught you many things. They play leading roles in your memories of childhood. Nevertheless, your parents may have had no lasting impact on your personality or intelligence or on the way you behave when they're not around. Hard to believe? Try to put aside your gut reaction for a moment and consider the evidence. Consider, for example, studies designed to separate the effects of genes from those of the home environment by examining pairs of people who are or are not biologically related, and who did or did not grow up in the same home (Plomin, 1990). Such studies have shown that having similar genes makes people more alike, but that sharing a childhood home environment does not. Unless they are biologically related, people who grew up in the same home are not noticeably more alike in personality or intelligence than two people picked at random from the same population. Almost all the similarities between brothers or sisters reared together are due to the genes they have in common. If they are adoptive siblings, they are no more alike than adoptees reared in different homes. On average, an adopted child reared by agreeable parents is no nicer than one reared by grouches. One reared by parents who love books is no smarter, as an adult, than one reared by parents who love soap operas (Harris, 1995, 1998). These findings don't fit conventional views of child development but they are backed up by a variety of other observations. For example, the only

child does not, on average, differ in personality from children who have to vie with their siblings for parental attention (Falbo & Polit, 1986). Behavioral differences between boys and girls did not diminish when parents began to try to treat their sons and daughters alike (Serbin, Powlishta, & Gulko, 1993). Children who speak Korean or Spanish at home but English with their peers end up as English speakers. The language learned outside the home takes precedence over the one their parents taught them – and, unlike their parents, they speak it without a foreign accent (Baron-Cohen & Staunton, 1994). But what about the evidence that dysfunctional parents tend to have dysfunctional offspring, and that children who are treated with affection tend to turn out better than children who are treated harshly? The trouble with this evidence is that it comes from studies that provide no way to distinguish genetic from environmental influences, or causes from effects. Are the offspring's problems due to the unfavorable environment provided by the parents or to personality characteristics inherited from them? Do the hugs cause the child to develop a pleasant personality, or does her pleasant personality make her parents want to hug her? Research using advanced techniques has shown that the problems are at least partly inherited and that the child's pleasant personality evokes the hugs (Reiss, 2005). Some developmental psychologists have tried to explain away the findings that puzzle them by claiming that parents do have important effects but it's difficult to measure their influence. The difficulty is blamed on the fact that the outcome of a given style of parenting depends on the child's genetic makeup (Collins et al., 2000). Undoubtedly, some individuals are genetically more vulnerable than others (Thapar et al., 2007), but this can't account for the negative results of the studies I described above (Harris, 2006). Nor can it account for the fact that rearedtogether identical twins often differ in personality and in mental health problems. Identical twins have the same genes and thus should react similarly to parental treatment, but pairs reared in the same home – treated very much alike by their parents – are no more alike in personality than those separated at birth. Nor are they less alike (Bouchard et al., 1990). There is no question that parents influence the way their children behave at home. The problem is that the way children behave at home is not a good predictor of how they'll behave in the classroom or playground. When researchers discover that children behave differently in different social contexts, they usually assume that the way children behave with their parents is somehow more important or long lasting than the way they behave elsewhere. But the children who speak Korean or Spanish at home and English outside the home use English as their primary language in adulthood. A boy whose cries evoke sympathy when he hurts himself at home learns not to cry when he hurts himself on the playground, and as an adult he seldom cries. A child who is dominated by her older sibling at home is no more likely than a firstborn to allow herself to be dominated by her peers (Abramovitch et al., 1986). Children learn separately how to behave at home and outside the home, and it's their outside-the-home behavior they bring with them to adulthood. This makes sense, since they are not destined to spend their adult lives in their parents' house. The notion that children are in a great hurry to grow up and that they see their own world as a pale imitation of the adult world is an adult-o-centric one. A child's goal is not to be like her mother or his father – it's to be a successful child. Children have their own agenda; they are not putty in their parents' hands. They have to learn how to get along in the world outside the home, and out there the rules are different. Judith Rich Harris CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

SEEING BOTH SIDES HOW INSTRUMENTAL ARE PARENTS IN THE DEVELOPMENT OF THEIR CHILDREN? Parents are instrumental in the development of their children Jerome Kagan, Harvard University The development of the skills, values, and social behaviors that facilitate a child's

adaptation to his or her society requires an orchestration of a number of relatively independent conditions. The most important are: (1) inherited temperamental biases, (2) the social class, ethnic, and religious affiliations of the child's family, which become bases for later identifications, (3) social relationships with siblings and peers, (4) historical era and the culture in which childhood and adolescence are spent, and (5) the behaviors and personality of the parents. The parents' influences assume two different forms. The first refers to their direct interactions with their child, including the behaviors they reward or punish, the skills they praise, and the actions that their children interpret either as signs of affection implying that they are valued, or signs of indifference or neglect which are interpreted as rejection or hostility. Parents who talk or read to their children typically produce adolescents with the largest vocabularies, the highest intelligence scores, and the best grades (Raikes et al., 2006). Parents who reason with their children while making requests for obedience typically have more civil children (Kagan, 1998). The power of the family is seen in a study of over 1000 children from ten different American cities who were raised only at home or had surrogate care for varied amounts of time each week. The family had the most important influence on the older child's personality, cognitive skills, and character (NICHD Early Childcare Research Network, 2004). Even children who were orphaned, or made homeless by war, were able to regain intellectual and social skills they did not develop during their early privation, if they were adopted before age 4 by nurturant, accepting families (Rathbun et al., 1958). Culture and historical period can bias the child to construct different interpretations of the same behaviors. Almost all children of Puritan parents growing up in seventeenth-century New England were punished harshly, but most interpreted these practices as motivated by the parents' desire for them to develop good character. As a result, the undesirable consequences of harsh punishment that would occur in contemporary New England did not occur in the seventeenth century. Chinese parents centuries ago used to bind the feet of their young daughters in order to make them attractive to future suitors. Although this was extremely painful and compromised their ability to walk, most girls accepted this burden because they believed it served their interests. The same conclusion would not be arrived at today. The important principle is that it is the child's interpretation of the parents' behaviors, not the actual behaviors, that is critical for development. Children are also influenced by their parents' personality characteristics and behaviors that are not necessarily direct interactions with the child. Children arrive at conclusions about themselves, often incorrect, because they assume that since they are biological offspring, they probably possess some psychological qualities of their parents. This emotionally charged belief, called identification, is the basis for pride in and loyalty to one's family, on the one hand, or shame over undesirable parental characteristics, including alcoholism, criminality, or unemployment, on the other. If children perceive their parent as affectionate, fair, and talented, they are likely to assume that they, too, possess desirable traits and, as a result, feel more confident than they are entitled to given the objective evidence. Children who perceive a parent as rejecting, unfair in doling out punishment, or without talent feel ashamed because they assume that they may possess some of the same undesirable characteristics (Kagan, 1998). By the sixth or seventh birthday, children have begun to identify with the social class of their family. Children from affluent, middle-class families come to believe that they have a greater sense of agency and more privilege than children from economically disadvantaged families. The latter are apt to perceive their relative deprivation of material advantage as implying some compromise in their sense of psychological potency. This belief is usually supported by parental actions and communications implying that life is difficult and their children face serious obstacles as they plan their lives. As a result, the social class of rearing in North America and Europe is the best predictor of IQ scores, grades in school, criminality, future

occupation, and a variety of illnesses (Werner & Smith, 1982; Johnson et al., 1990). The dramatic advances in the neurosciences and genetics, disseminated by the media, have persuaded many Americans and Europeans that genes are the more important cause of the intellectual and emotional profiles of adolescents. However, this claim is exaggerated. The evidence reveals that the family remains an important cause of variation in many psychological traits, especially values, academic talents, and attitude toward authority, more important than any gene discovered thus far. The current attraction to genetic determinism is popular because it removes some of the blame from the family for undesirable outcomes in their children. Most societies, ancient and modern, believe that the family has a significant influence on children, but it is often difficult to measure. A commentator who denied parental influence resembles someone who decides on a foggy morning that the trees have disappeared because they cannot see them. Jerome Kagan ADOLESCENT DEVELOPMENT For more Cengage Learning textbooks, visit www.cengagebrain.co.uk

104 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT As expected, the percentage of adolescents who have attained identity achievement increases steadily from before high school to the late college years, as the percentage remaining in identity diffusion steadily decreases (Waterman, 1985). More contemporary research has focused on the development of self-concept from the perspective of cognitive theories, rather than based on Erikson's stages of identity development. As adolescents mature cognitively, they develop more abstract characterizations of themselves. They begin to view themselves more in terms of personal beliefs and standards and less according to social comparisons (Harter, 1998). Adolescents' self-concepts vary across different situations, so that they see themselves differently when they are with parents than when they are with peers (Harter, 1998). They often engage in behaviors that do not represent how they really see themselves, especially among classmates or in romantic relationships. In early adolescence, self-esteem is somewhat unstable but becomes more stable during later adolescence (Harter, 1998). African American adolescents tend to have higher self-esteem than white adolescents (Gray-Little & Hafdahl, 2000), and males have higher self-esteem than females (Kling et al., 1999). Not surprisingly, however, across both genders and most ethnic groups, higher self-esteem is related to parental approval, peer support, adjustment, and success in school (DuBois et al., 1998). During adolescence and early adulthood, many minority youth struggle with their ethnic identity, and their resolution of this struggle can come in many forms (Phinney & Alipuria, 1990; Sellers et al., 1998). Some minority youth assimilate into the majority culture by rejecting their own culture. Some live in the majority culture but feel estranged. Some reject the majority culture and focus only on their own culture. And some try to find a balance between the majority culture and their own culture, a resolution sometimes referred to as biculturalism. For more Cengage Learning textbooks, visit www.cengagebrain.co.uk INTERIM SUMMARY l Puberty has significant effects on an adolescent's body image, self-esteem, moods, and relationships; but most adolescents make it through this period without major turmoil. l According to Erikson's theory, forming a personal sense of identity is the major task of the adolescent period. l Identity crisis is the phrase coined by Erikson to describe the active period of self-definition characteristic of adolescence. l Identity confusion is the unsuccessful outcome of identity crisis. The adolescent has no consistent sense of self or set of internal standards for evaluating his or her self-worth in major areas of life. CRITICAL THINKING QUESTIONS 1 Using the categories of identity achievement, foreclosure, moratorium, and identity diffusion, can you identify how and when your religious, sexual, occupational, and political identities have developed and changed over time? 2 What experiences might influence the development of a minority youth's ethnic identity? For example, what experiences might lead a

youth to develop a bicultural identity, and what experiences might lead a youth to reject majority culture?

CHAPTER SUMMARY Two central questions in developmental psychology are: (a) How do biological factors (‘nature’) interact with environmental experiences (‘nurture’) to determine the course of development? and (b) Is development best understood as a continuous process of change or as a series of qualitatively distinct stages? Some developmental psychologists believe that development occurs in a sequence of periods in which (a) behaviors at a given stage are organized around a dominant theme or a coherent set of characteristics, (b) behaviors at one stage are qualitatively different from behaviors at earlier or later stages, and (c) all children go through the same stages in the same order. Critical or sensitive periods are times during development when specific experiences must occur for psychological development to proceed normally. Early theorists believed that all sensory preferences and abilities had to be learned, but research over the last several decades has established that infants are born with their sensory systems intact and prepared to learn about the world. Newborns have poor vision and cannot see as well as an adult until about age 2. Some theorists thought infants were born with a preference for faces, but research suggests infants are not attracted to faces per se but to stimulus characteristics such as curved lines, high contrast, edges, movement, and complexity – all of which faces possess. Even newborns pay attention to sounds. They seem to be born with perceptual mechanisms that are already tuned to the properties of human speech that will help them learn language. Infants can discriminate between different tastes and odors shortly after birth. They seem to prefer the taste and odor of breast milk. Infants can learn from the moment they are born and show good memories by three months of age. Piaget’s theory describes stages in cognitive development. These proceed from the sensorimotor stage (in which an important discovery is object permanence), through the preoperational stage (when symbols begin to be used) and the concrete operational stage (when conservation concepts develop), to the formal operational stage (when hypotheses are tested systematically in problem solving). New methods of testing reveal that Piaget’s theory underestimates children’s CHAPTER SUMMARY abilities, and several alternative approaches have been proposed. Information-processing approaches view cognitive development as reflecting the gradual development of processes such as attention and memory. Other theorists emphasize increases in domainspecific knowledge. Still others, including Vygotsky, focus on the influence of the social and cultural context. More recent research in children’s cognitive development focuses on children’s theory of mind, or understanding that other people have beliefs and expectations that can be different from their own and different from reality. Piaget believed that children’s understanding of moral rules and judgments develops along with their cognitive abilities. Kohlberg extended Piaget’s work to include adolescence and adulthood. He proposed three levels of moral judgment: preconventional, conventional, and postconventional. An infant’s tendency to seek closeness to particular people and to feel more secure in their presence is called attachment. Attachment can be assessed in a procedure called the strange situation, a series of episodes in which a child is observed as the primary caregiver leaves and returns to the room. Securely attached infants seek to interact with a caretaker who returns from an absence. Insecurely attached: avoidant infants avoid a caretaker who returns from an absence. Insecurely attached: ambivalent infants show resistance to a caretaker who returns from an absence. Disorganized infants show contradictory behaviors (sometimes avoidant, sometimes approaching) to a caretaker who returns from an absence. A caregiver’s sensitive responsiveness to a baby’s needs has

important influences on attachment. The baby’s temperament also plays a role. Cultural differences in the percentage of children classified in different attachment categories may indicate that the strange situation paradigm is an inappropriate test of attachment in some cultures. Gender identity is the degree to which one regards oneself as male or female. It is distinct from sex typing, the acquisition of characteristics and behaviors that society considers appropriate for one’s sex. Social learning theory emphasizes the rewards and punishments that children receive for sex-appropriate and sex-inappropriate behaviors,

106 CHAPTER 3 PSYCHOLOGICAL DEVELOPMENT as well as a process of identification with same-sex adults that is based on observational learning. A cognitive-developmental theory of gender identity and sex typing holds that once children can identify themselves as male or female, they are motivated to acquire sex-typed behaviors. Their understanding of sex and gender corresponds to Piaget’s stages of cognitive development, especially their understanding of gender constancy – the realization that a person’s sex remains constant despite changes of age and appearance. Gender schema theory seeks to explain why children base their self-concepts on the male–female distinction in the first place. It emphasizes the role of culture in teaching children to view the world through the lens of gender. CORE CONCEPTS information-processing skills knowledge sociocultural approach metacognition theory of mind autism moral judgment preconventional level of moral development conventional level of moral development postconventional level of moral development temperament easy temperament difficult temperament slow to warm up temperament separation anxiety maturation stages of development critical periods sensitive periods visual field facial preference schema assimilation accommodation sensorimotor stage object permanence preoperational stage operation conservation egocentrism concrete operational stage formal operational stage For more Cengage Learning textbooks, visit www.cengagebrain.co.uk Puberty has significant effects on an adolescent’s body image, self-esteem, moods, and relationships, but most adolescents make it through this period without major turmoil. According to Erikson’s theory, forming a personal sense of identity is the major task of the adolescent period. Identity crisis is Erikson’s phrase to describe the active period of self-definition characteristic of adolescence. Identity confusion is the unsuccessful outcome of identity crisis in which the adolescent has no consistent sense of self or set of internal standards for evaluating his or her selfworth in major areas of life. attachment strange situation securely attached insecurely attached: avoidant insecurely attached: ambivalent disorganized sensitive responsiveness self-concepts self-esteem gender identity sex typing gender schema adolescence puberty menarche identity crisis identity confusion

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