

CHAPTER 9 OUTLINE

Development Across the Lifespan

I. EXPLORING HUMAN DEVELOPMENT

What does "genetic influence" mean?

A. HISTORICAL PERSPECTIVE

1. John Locke (1690s), an empiricist philosopher argued that childhood experiences—nurture permanently affect people. Empiricists saw the newborn as a blank slate or *tabula rasa* on which experience writes.
2. Jean-Jacques Rousseau (1760s) argued nature alone gives children all they need to grow and learn, without adult guidance.
3. Arnold Gesell (1900s), an American psychologist, argued motor skills develop in a fixed sequence of stages in all children due to **maturation**, natural growth or change, which unfolds in a fixed sequence relatively independent of the environment. *Development* encompasses not only maturation but also the behavioral and mental processes that are influenced by learning.
4. John B. Watson (1930s) claimed that all development is due to environmental inputs, not -nature.
5. Jean Piaget saw nature and nurture as inseparable and interactive in cognitive development.

B. UNDERSTANDING GENETIC INFLUENCES

1. **Behavioral genetics** is the study of how **genes** affect behavior. This research demonstrated that nature and nurture jointly contribute to development in two ways.
 - a. Nature and nurture help make people similar.

Example: Motor skill milestones occur at similar times for most children due to common genes for the nervous system's motor control and common basic care and nutrition patterns.
 - b. Nature and nurture also help make people unique. Different inherited genes and environments underlie variations in personality, intelligence, speech patterns, etc.
 - c. Behavioral geneticists are concerned with the differences between groups of individuals, not with characteristics of a single individual.

Example: Genes account for about 80% to 95% of the variability in

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height. Determination and genetic influence refers only to the origins of average individual differences in the population.

- d. If researchers discovered that a certain trait is 50% heritable, it would mean that approximately half of the differences between people on that trait can be explained by genetic factors.

C. GENES AND THE ENVIRONMENT

The relative contributions of nature and nurture differ for specific aspects of development, but their influences on all human characteristics is forever intertwined.

II. BEGINNINGS

Why should pregnant women stay away from tobacco and alcohol?

A. PRENATAL DEVELOPMENT

1. Prenatal development begins when a sperm fertilizes an egg and forms a brand-new cell. Most human cells contain 46 **chromosomes**, made up of thousands of genes, which are made of **deoxyribonucleic acid (DNA)**.
 - a. New cells are constantly being produced through the process of *mitosis*; the cell's chromosomes duplicate themselves so that each new cell contains copies of the 23 pairs of chromosomes in the original.
 - b. But for male sperm cells and female ovas, *meiosis* occurs when the chromosome pairs are randomly split and rearranged leaving each new sperm and egg cell with just one member of the chromosome pair. The fertilized cell, the *zygote*, carries the usual 23 pairs of chromosomes, but half of each pair comes from the mother and half from the father. The zygote divides first into copies of itself; then it divides and redivides into the billions of specialized cells that form a complete new human being.
2. Stages of prenatal development.
 - a. The first two weeks after conception are called the *germinal*, or *zygotic*, stage. Rapidly dividing cells form a *neural tube* which will become the central nervous system.
 - b. The *embryonic stage* begins after two weeks, during which time the basic body plan and organs are created.

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- c. The *fetal stage* begins after two months. The **embryo** becomes a **fetus** and its various organ systems grow and function more efficiently.

3. Prenatal risks.

- a. During prenatal development, a *placenta* forms to act as a filter through which the embryo or fetus can take in nutrients from the mother and send away waste. The placenta is an imperfect filter, allowing many substances to reach the embryo.

Example: A baby whose mother has rubella during the 3rd or 4th week after conception has a 50% chance of being born blind, deaf, or mentally retarded, or of having heart malformations.

- b. **Teratogens** are harmful substances that cause birth defects if they reach the womb. Teratogens are of concern in the embryonic stage because it is a **critical period**, a time in which certain kinds of growth *must* occur if development is to proceed normally.
- c. Critical factors for embryonic and fetal development include the mother's health and age, her nutrition before and during pregnancy, the emotional and physical stresses she experiences, and the nicotine, alcohol and other drugs she uses.
 - i. Smoking constricts the flow of blood and oxygen to the baby. Nicotine causes irregular heartbeat and other harmful effects.
 - ii. Babies born to women who abuse alcohol have a 44% chance of suffering from **fetal alcohol syndrome**, in which infants have facial deformities and mental retardation.
 - iii. Pregnant cocaine users may give birth to babies prematurely, and the babies are more often of low birth weight, are tense and fussy. They may suffer delayed physical growth and motor development and malformed kidneys, genitals or other organs. Their mental abilities are not all that different from those of any baby born into an impoverished environment.
- d. The likelihood that harmful conditions and substances will affect a particular infant depends on a combination of the infant's inherited strengths or weaknesses, the stage of prenatal development during which the infant was exposed to a teratogen, and the intensity of the teratogen.

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- i. Less than 10% of all babies born in the US will have mental or physical problems resulting from harmful factors.

B. THE NEWBORN

To study newborns' abilities, researchers show stimuli and note where infants look and for how long. Researchers also note changes in heart rates, sucking rates, brain waves, movement, and skin conductance (a physiological measure of emotional arousal).

1. *Vision* is very poor; newborns can see only large objects close up. Newborns lack a *fovea*, the part of the eye onto which images are focused. Brain areas that process visual information are still poorly developed. Researchers estimate that newborns' vision is 20:300.
 - a. Infants younger than 2 months focus on edges. Later they are able to scan whole objects; and they enjoy looking at faces.
2. *Hearing*. A few days after birth, newborns hear soft voices, locate sounds, and discriminate tones. They prefer rising tones spoken by women and children and high-pitched, exaggerated, expressive speech (*baby talk*).
 - a. Some hearing problems stem from learning to pay attention. Until later in childhood, it is difficult to listen selectively to some sounds over others.
3. Newborns have *smell* and *taste* preferences. They prefer sweet tastes, and breast-fed babies prefer the odor of their own mother to that of another mother.
4. *Reflexes and Motor Skills*. Movements during the first few months are dominated by involuntary, unlearned reactions, called **reflexes**. Over twenty reflexes have been observed in newborns, including the grasping, rooting (turn mouth toward a finger or nipple that touches the cheek), and sucking (suck on anything that touches the mouth) reflexes.
5. Voluntarily controlled movement develops in time, partly from a genetic unfolding of increased muscle strength and coordination and also partly due to trial-and-error experiences with moving about the world. Motor development results from a combination of maturation and experience.

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III. INFANCY AND CHILDHOOD: COGNITIVE DEVELOPMENT

How do babies think?

A. THE DEVELOPMENT OF KNOWLEDGE: PIAGET'S THEORY

1. Piaget saw the ability to think as growing in a fixed sequence of *stages*, each *qualitatively* different from the rest. By this view, a child is not a miniature adult, with a smaller *quantity* of adult cognitive skill. Rather, a child's thinking is qualitatively different.
2. Piaget viewed intelligence as made of units called schemas. **Schemas** are mental images or generalizations that form as people experience the world. They organize past experiences and provide a framework for understanding future experiences.

- a. In **assimilation**, people use an existing schema to fit a new experience and gather information from it.

Example: When you put a finger in an infant's hand, it uses its grasping reflex to hold onto your finger.

- b. In **accommodation**, people modify an existing schema to better fit.

Example: If you put a beach ball on an infant's hand, its grasping schema will not work. The infant may modify its behavior to simply caress the ball.

3. The **sensorimotor period** covers the first two years of life, with mental activity limited to sensory and motor functions.
 - a. Sensorimotor infants cannot form schemas that are *mental representations* of objects and actions—they can only think about objects in the "here and now," directly sensing or acting on them.
 - b. This period ends as a child forms *mental representations*—thinking about objects in their absence. Knowing that objects exist even if you cannot directly sense them is **object permanence**.

Example: If a toy rolls behind the curtains, a child without object permanence can no longer think about the toy, as if the toy no longer exists. A child with object permanence pursues the toy, looking behind the curtains.

4. Modern researchers have shown that infants know more, and sooner, than Piaget hypothesized. Children are not just sensing and moving as

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infants—they are thinking, too. Developmental psychologists generally agree that infants develop some mental representations earlier than Piaget suggested. They disagree about whether the knowledge is programmed in infants, develops quickly through interactions with the outside world, or is constructed through the recombination of old schemas into new ones.

B. FOCUS ON RESEARCH: WHAT DO INFANTS KNOW ABOUT PHYSICS?

1. *What was the researcher's question?*

Renee Baillergeon used a creative experimental design to find out if very young infants possess some of the same fundamental beliefs about objects that adults do.

2. *How did the researcher answer the question?*

Baillergeon's basic method was to show infants events, some physically possible and others not. She measured the length of time the infants looked at the objects in each trial.

3. *What did the researcher find?*

Results showed that three-month-old infants looked longest at objects that appeared totally unsupported against gravity but which did not fall. By the time infants were six months of age, they were also more likely to look longer at objects that appeared only partly, and insufficiently, supported, but which nevertheless did not fall.

4. *What do the results mean?*

These data suggest that knowledge about gravity occurs early, and that experience with age adds to such knowledge, such as by a growing appreciation for an object's center of gravity.

5. *What do we still need to know?*

Does an infant's tendency to stare longer at a particular sight necessarily indicate "surprise"? How do babies know about physics? Does knowledge develop from experience or is it innate? Further research suggests that giving babies extra-experience results in more knowledge.

C. OTHER PIAGETIAN STAGES

1. The **preoperational period** (about ages two to seven) begins as children understand, create, and use *symbols* (e.g., language) to represent absent

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things; they can pretend, draw, and talk. During the second half of the preoperational stage children begin to make intuitive guesses about the world, but they cannot tell the difference between imagination and reality.

- a. Preoperational thought is dominated by what a child sees and touches. The child lacks **conservation**, knowing that certain properties of substances (e.g., volume) stay the same even as appearances change. Children also do not understand *reversibility* or *complementarity*.
2. In the *concrete operational period* (usually age seven to adolescence), children use simple logic and mental operations. They apply logic only to concrete objects (e.g., trees, books), but not abstract concepts (e.g., liberty).
3. The formal operational period (adolescence) brings an ability to think logically about abstract ideas.

D. MODIFYING PIAGET'S THEORY

1. Developmental psychologists also believe that cognitive abilities develop slowly, at different ages in different domains, rather than in large all-or-none steps or stages. Children's reasoning depends on:
 - a. how easy the task is.
 - b. how familiar they are with the objects involved.
 - c. how well they understand the language being used.
 - d. what experiences they have had in similar situations.

E. INFORMATION PROCESSING DURING CHILDHOOD

The **information-processing approach** examines how information is taken in, remembered, and used. This approach focuses on gradual, quantitative changes in children's mental capacities.

1. As children get older, their information-processing skills gradually get better, they have longer attention spans, and their memory's storage capacity improves.
2. Both nature and nurture are important. Children do better with familiar material. Children learn memorization strategies in school.

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F. LINKAGES: DEVELOPMENT AND MEMORY

Few adults remember anything from their first few years of life, creating a kind of *infantile amnesia*. There are several hypotheses explaining this.

1. Children could lack adult-like memory encoding and storage capacity. Yet, two- and three-year-old children can remember events from several months ago.
2. Infantile amnesia may occur because infants do not have a strong self-identity, and thus cannot organize memories around what happens to them. This would not explain losing memory from ages two to three, when children do have self-identity.
3. Memories may be there but may only be accessible in implicit, not explicit, form.
4. Early memories may be lost because we do not have the language skills to talk about, and thus solidify, those memories.
5. Access to early memories could depend on retrieval cues organized around child-like schemas. As adults, such schemas may have been abandoned, and thus the capacity to retrieve the still-stored memories may be lost.
 - a. Childhood memories may be fused into *generalized event representations*, such as "going to Grandma's house," from which specific experiences are not generally recalled.

G. CULTURE AND COGNITIVE DEVELOPMENT

1. Lev Vygotsky viewed the human mind as a product of cultural history. A child's mind grows through interaction with other minds.
2. Researchers have studied how social routines (e.g., family dinners, religious services, birthday parties) affect a child's growing knowledge of how the world works.
 - a. Quite early, children form *scripts*, mental representations of the sequences in which activities of their culture should proceed.

Example: A child's mental representation for mail may include the fact that first someone writes a letter, then the letter goes in a mailbox, then the letter is delivered to the family's mailbox, then Mommy or Daddy gets the letter and hands it to the child, then the child opens the letter, and so on.

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3. Cognitive abilities are shaped by one's language. It is harder to analyze concepts for which one's language has few words.

H. INDIVIDUAL VARIATIONS IN COGNITIVE DEVELOPMENT

1. Some individual variations in development are due to heredity.
2. The environment has a substantial affect on cognitive development.
 - a. Cognitive development can be slowed by extremes of deprivation, such as those resulting from poverty and poor nutrition.
 - b. Parents can aid a child's cognitive development by exposing him or her to many interesting materials and experiences, supportive conversation, and loving interactions with family members or others as well as by encouraging the child to take on challenges actively.
 - c. Project Head Start and other programs for poor preschool children can enhance children's cognitive abilities.

IV. INFANCY AND CHILDHOOD: SOCIAL AND EMOTIONAL DEVELOPMENT

How do infants become attached to their caregivers?

Mutual attraction begins immediately after birth between parents and infants. Infants are sensitive to the people around them. Children a year old use their mothers' emotional expressions to guide their own behavior when they are uncertain. Infants communicate their feelings to their parents, signaling when they want to interact.

A. INDIVIDUAL TEMPERAMENT

1. **Temperament** is an infant's style and frequency of emotional expression, a prelude to its personality. Temperament is considered largely genetic although it can be affected by the prenatal environment.
 - a. *Easy babies*, the most common, are predictable, react to new situations cheerfully, and seldom fuss.
 - b. *Difficult babies* are irregular and irritable.
 - c. *Slow-to-warm-up babies* react warily to new situations, but slowly come to enjoy them.
2. Early temperamental characteristics have lasting effects.
 - a. Temperament patterns persist later in life—but nature interacts with nurture.

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- b. The match between an infant's temperament and parental expectations or personal style affects the stability of a child's temperamental qualities.
- c. There is an adaptive interplay of innate and cultural factors in the development of temperament operating in all cultures.

B. THE INFANT GROWS ATTACHED

1. As they interact with parents and other important figures, infants form deep, loving, close, and enduring relationships—**attachments**.
2. Harry Harlow's experiments studied the nature and importance of attachments.
 - a. Newborn monkeys removed from their mothers formed "attachments" with a soft, cloth-covered artificial mother, but not with a similarly shaped wire-mesh artificial mother, even if the wire mother held a milk bottle.
 - b. Attachments seem to follow from needs for softness and cuddling, rather than from meeting basic physical needs.
 - c. Infant monkeys were very impaired socially, emotionally, and physically when attachments were prevented. They did not engage in normal sexual behavior and when females became mothers through artificial insemination, they did not have adequate maternal behaviors.
 - d. Similar serious problems are seen in children abandoned by their mothers and neglected by orphanage workers. Neurologists suggest that there is developmental brain dysfunction and damage brought on by a lack of touch and body movement in infancy.
3. In most cultures, infants first grow attached to their mothers. By six or seven months, infants prefer their mother to anyone else. In most cultures, attachment to the father occurs later than that to the mother and may be different in nature.
4. Attachments are studied by putting the child in an experimental *strange situation*, where the natural coming and going of the attached person is simulated.
 - a. Most infants in the U.S. form a *secure attachment* to loving mothers. These children tolerate brief separations from mother but are happy to see her return.

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- b. Some infants form an *insecure attachment*.
 - i. *Avoidant*: the infant avoids or ignores the mother when she approaches, or when she returns from a brief separation.
 - ii. *Ambivalent*: the infant is upset when the mother leaves, but acts angry and rejects her when she approaches.
 - iii. *Disorganized*: the infant is inconsistent, disturbed, and disturbing.
- c. The type of attachment formed has lasting effects. Compared to children with insecure attachments, securely attached children tend to be more competent socially and emotionally; more cooperative, enthusiastic, and persistent; better problem solvers; more popular and playful; and better students.
- d. Patterns of attachment vary widely in different parts of the world.

C. THINKING CRITICALLY: DOES DAY CARE HARM THE EMOTIONAL DEVELOPMENT OF INFANTS?

1. *What am I being asked to believe or accept?*

Daily separations due to day care damage attachment between the mother and infant and harm the child's emotional development.

2. *Is there evidence available to support the claim?*

Infants placed in day care do form attachments to their mothers. However, these infants are more likely to show little effect from being separated from their parents, ignoring or avoiding them when they return, and thus more often are classified as insecurely attached.

3. *Can that evidence be interpreted another way?*

Infants who experience routine separations may feel more comfortable being left alone, so they seek less closeness with their mothers because they are more independent, not insecure. Also, parents who value independence in themselves and their children may be more likely to work and place children in day care. Thus, people who use day care are a *self-selected* group, and perhaps not a representative sample of the larger population.

4. *What evidence would help to evaluate the alternatives?*

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Other measures of emotional adjustment are needed to know if children are actually harmed by day-care separations. A large study of infant day care found that infants in day care were no more likely to have emotional problems or to be insecurely attached to their mothers than infants NOT in day care. Infants in poor quality day care and whose mothers were insensitive to their needs were less likely to develop a secure attachment to their mothers.

5. *What conclusions are most reasonable?*

Day care by itself does not lead to insecure attachment. But if the day care is of poor quality, it can worsen a situation at home and increase the likelihood that infants will have problems forming a secure attachment to their mothers.

D. RELATIONSHIPS WITH PARENTS AND PEERS

Peers and Psychosocial Development

1. Erik Erikson described personality development as following a series of eight "psychosocial crises," each building on earlier ones. How, and how well, one resolves each crisis adds to ongoing emotional development over the lifetime.
 - a. In the first year of life, the crisis centers on basic trust or mistrust about the world.
 - b. After the child forms trusting relationships, his or her next major crisis is between being autonomous and independent versus the scary uncertainty of trying things on your own.
2. *Parenting styles*: **Socialization** is the process whereby authority figures channel a child's energy and teach a child the skills and rules needed to function in their culture.
 - a. Cultural forces powerfully shape socialization. In the United States, Hispanic parents are often influenced by the more collectivist cultural traditions of Puerto Rico, Mexico, and Central America, in which family community is emphasized over individual goals. Compared to European-American parents, Hispanic parents in the United States more often expect children to respect and obey elders and to do less questioning, negotiating, or arguing.
 - b. There are distinct patterns of socialization or parenting styles among European-American parents.

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- i. *Authoritarian parents* are strict, punitive, and unsympathetic. They value obedience from their children.
 - Children raised in this way tend to be unfriendly, distrustful, and withdrawn.
 - ii. **Permissive parents** give their children complete freedom with little discipline.
 - Children raised in this way tend to be immature, dependent, and unhappy.
 - iii. **Authoritative parents** reason with their children, giving greater responsibilities with age. They set firm limits but also remain understanding and encourage independence.
 - Children raised in this way tend to be friendly, cooperative, self-reliant, and socially responsible. They are also more successful in school and better tolerate divorce of their parents, if it should occur.
- c. Links between particular socialization styles and children's personalities are correlations (and not particularly strong ones); it is unclear what the cause-and-effect relationships are. Children may also shape their parents' behavior.
 - d. Also, it may not be the parents' socialization practices that influence their children but rather how the children perceive the discipline they receive.
 - e. There is little research on parenting except with European-American families. Parenting styles must be evaluated in terms of its cultural context.
3. Social development is also shown by children's peer relationships.
 - a. Two-year-olds play together only by exchanging or fighting over toys. Three-year-olds use toys to get a response from peers. Four-year-olds converse about the toys they play with and by the end of preschool, children begin to share toys and tasks cooperatively. During the school years, peer interaction becomes more complex and structured. At this age children realize that feelings, not things, keep friends together. Children without friends usually experience problems later in life.

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E. SOCIAL SKILLS

1. Social skills, like cognitive skills must be learned. Very young children lack the social skills for sustained, responsive interactions with others. Parents can help children develop such skills by encouraging lots of pretend play, positive social behaviors with others, and exploring positive ways to express and deal with their emotions.
2. Children gain social competence by learning to detect and interpret emotional signals and social roles.
 - a. Girls are able to do this earlier than boys.
 - b. Those without these skills tend to be rejected or neglected.

F. GENDER ROLES

Becoming Gendered: How Others Tell if We Are an "X" or a "Y"

1. Many social roles that children learn are linked to gender. All societies have traditional **gender roles**, patterns of work, appearance, and behavior associated with being male or female.
2. Gender roles persist because they are deeply rooted in both nature and nurture.
 - a. Girls mature faster physically, are less susceptible to illness, and have fewer difficulties with speech, learning, sleep disorders, mental retardation, and emotions. Girls speak and write earlier and more fluently.
 - b. Boys are more skilled at manipulating objects, constructing three-dimensional forms, and mentally manipulating figures and pictures. They are more physically active and aggressive, play in larger groups and spaces, and enjoy noisier, more strenuous physical games.
 - c. The biological nature of these sex differences is suggested by sex differences in anatomy, hormones, and brain organization as well as by cross-cultural demonstration of consistent gender patterns, despite very different socialization.
3. Gender roles are nurtured by social interactions and environmental cues. From birth, boys and girls are treated differently.

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- a. Parents pass on ideas about "appropriate" behaviors for boys and girls. Boys tend to receive encouragement to achieve, compete, and act independently, while girls are more often encouraged to be expressive, nurturant, dependent, and unselfish.
 - b. Children also pick up gender-appropriate behavior from peers.
 - c. Social and cultural training tends to support and amplify any biological predispositions that distinguish boys and girls.
4. Some parents have attempted to de-emphasize gender-role socialization. Such efforts may reduce some gender differences, such as those in verbal and mathematics skills, but other gender differences persist, such as those in visualizing and manipulating figures and pictures.

V. ADOLESCENCE

What threatens adolescents' self-esteem?

A. THE CHALLENGES OF CHANGE

1. Adolescence begins with a sudden growth spurt. **Puberty**, the beginning of reproductive capability, causes dramatic bodily changes.
2. In *early adolescence self-esteem*, their sense of being worthy, capable, and deserving of respect, is challenged.
 - a. The pace of physical maturity affects self-esteem. Fast-maturing boys tend to be happy, poised, relaxed, and regarded as emotionally mature by others. But for girls, maturing early more often leads to embarrassment, sexual activity, and family conflict.
3. Adolescent changes and pressures often cause family conflicts. In most homes, however, the level of conflict is moderate. More than half of teens in Western cultures find early adolescent relatively trouble free.
4. If there is serious conflict, sexuality is often involved.
 - a. About half of sixteen-year-olds in North America have had sexual intercourse. Fifty years ago, the figure was less than 10 percent.
 - b. Sexually active teens tend to hold less conventional attitudes and values and are more likely to smoke, drink alcohol, and use other drugs.

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- c. Sexual activity is often followed by lower school achievement, sexually transmitted diseases, and unwanted pregnancies.
- d. In the United States, about 10 percent of girls get pregnant before age of nineteen. Many girls choose to keep their babies which has negative impact on both the mother and the baby. Teenage parents tend to be less positive and stimulating and more likely to abuse their child than older parents.

B. IDENTITY AND DEVELOPMENT OF THE SELF

1. Adolescents extended time as students and trainees make it hard to find and form an identity.
2. Preschool children describe themselves in terms of a favorite activity. At 8 or 9, children give facts about themselves. At about age 11, children describe themselves in terms of social relationships, personality traits, and other general stable psychological characteristics.
 - a. Adolescents may describe themselves in terms of their ethnic or national identity. A positive **ethnic identity** (seeing their own group as superior) adds to self-esteem.
 - b. *Bicultural people*, who affirm both their ethnic and a national identity, tend to have a positive self-concept.
3. According to Erikson, late adolescence precipitates an **identity crisis** -- a struggle to create an integrated and unique self-image. In late adolescence, young people do consider alternative identities. They "try out" various behaviors to help resolve questions about sexuality, self-worth, industriousness, and independence. For those who fail to resolve identity issues, there are often problems ahead.

C. ABSTRACT THOUGHT AND MORAL REASONING

Developing Morals

1. Piaget's **formal operational period** of cognitive development, which typically occurs in adolescence, marks the ability to think hypothetically and logically about even abstract concepts. People who have not gone to school are less likely to exhibit formal operations. Even people with formal operations tend to use such reasoning in their own domains and not others.
2. *Lawrence Kohlberg's stages of moral reasoning* are based on the reasons given for moral choices.

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- a. **Preconventional** (Stages 1 and 2): Moral judgments are selfish, trying to avoid punishment.
 - b. **Conventional** (Stages 3 and 4): Moral judgments consider other people, following rules, conventions, duty, and vows.
 - c. **Postconventional** (Stages 5 and 6): Moral judgments are based on personal standards or universal principles of justice, equality, and respect for human life.
 - d. In forty-five studies in twenty-seven cultures, as subjects grew older, they ascended through Kohlberg's Stages 1 through 4 without reversing; however, Stages 5 and 6 did not always appear.
 - e. Some criticize Kohlberg's stages, which were based on U.S. male subjects. Moral ideals are not absolute.
 - i. People in collectivist cultures define moral ideals differently, arguing that supporting the community is more important than supporting personal standards.
 - ii. Carol Gilligan argues that the moral ideal for women is not the abstract concept of justice in Kohlberg's subjects, but one of caring and relationships.
3. Moral ideals are not absolute and universal. The highest levels of moral reasoning are the product of culture and history.

VI. ADULTHOOD

What developmental changes occur in adulthood?

Early adulthood is ages 20 to 40; middle adulthood is ages 40 to 65; and late adulthood is after age 65.

A. PHYSICAL CHANGES

1. In early adulthood (ages twenty to forty), physical growth continues, and these years are often the "prime of life."
2. By middle adulthood (ages forty to sixty-five), the senses lose acuity. Women generally experience *menopause*, the shutdown of reproductive capability in their late forties or early fifties.
3. In late adulthood (age sixty-five and on), physical changes include the dwindling of bone mass and a higher risk of heart disease. There are more digestive disorders, and weakened reflexes. The brain shrinks.

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B. COGNITIVE CHANGES

1. Cognitive changes through age sixty are usually improvements: learning new information and skills, retaining old information, and honing skills.
 - a. Adult thought is more complex and adaptive than adolescent thought. People's thinking becomes *dialectical*; they understand that knowledge is relative, not absolute.
2. After age sixty-five, some people see a decline in certain intellectual abilities—memory, flexibility, speed of processing new information, and the ability to concentrate. Given more time, older adults can perform as well as or better than younger adults. Mental and physical exercise helps maintain high levels of cognitive ability.
 - a. Cognitive declines are less likely and occur less often in people who are healthy and more educated and who have high socioeconomic status, an intellectually stimulating environment, and mentally able companions.
 - b. The greatest threat to cognitive abilities in late adulthood is Alzheimer's disease.

C. SOCIAL CHANGES

What Is This Thing Called Love?

1. Many people in their twenties focus on careers and love. Erikson named this an "intimacy versus isolation" crisis.
 - a. Adult perceptions of intimacy parallel their earlier patterns of infant attachment. Insecurely attached adults were found to engage in more one-night stands and less cuddling than those whose attachment style was secure.
 - b. Parenting is another development phase accompanied by change. For many couples marital satisfaction declines. When the father does not do his share of caring for the baby, both mothers and fathers are dissatisfied.
2. By their forties, adults may focus on producing something to outlast them. Erikson called this a *crisis of generativity*. For many North American adults the greatest tension is between two types of generativity: Parenthood vs achievement.

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3. Around age forty, people go through a **midlife transition**, modifying their lives and relationships, usually for the better. For some, but not all, the transition is a troubling crisis. The happiness and healthiness of people in midlife depend on how much control they feel they have over their job, finances, marriage, children, and sex life; the level of education they have attained; and the type of work they are doing.
4. Most people between 65 and 75 view themselves as middle-aged, not old. They are just as satisfied with life as people at other periods of adulthood. People in late adulthood tend to become more introspective, cautious, and conforming. They interact with other less frequently, but enjoy these interactions more. As long as they have a network of at least three close relatives or friends, they are content.

D. DEATH AND DYING

A few years or months before death, people often show a sharp decline in mental functioning known as **terminal drop**. The awareness of impending death is the last psychological crisis, as people review, evaluate, and try to integrate their lives and accomplishments.

1. Research suggests people live longer if they do not have a history of heavy drinking and if they live independently in old age rather than in nursing homes. Longevity is NOT related to higher levels of education, income, or occupation. Being curious, conscientious, and not overemphasizing the importance of negative events in life also leads to a longer life.