Developmental Psychology

Brief Chapter Outline

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Detailed Chapter Outline

Developmental psychology is the scientific study of biological, cognitive, social, and personality development throughout the life span.

Instructor Video Tool Kit for Introductory Psychology
You may want to introduce developmental psychology with one of these videos about physical development that include information that may be surprising to students. If students have already seen Do Video Games Teach People To Be Violent? during your discussion of observational learning, you can opt to reinforce key points regarding the development of the prefrontal cortex by showing a second video on the topic.

Worth Video Anthology for Introductory Psychology: Do Video Games Teach People To Be Violent? (4:30)
This video reports on a court case in which the manufacturer of a violent video game has been sued for teaching an adolescent to commit murder. Psychologist David Walsh discusses the potential for this happening in the context of the current scientific understanding of observational learning in relation to brain development. He reports that the prefrontal cortex, which enables people to “think ahead, consider consequences, and manage urges,” is not fully developed during adolescence. Although Dr. Walsh acknowledges that playing violent video games does not by itself cause people to act out violent scripts, he argues that a teen’s prolonged playing of them, when coupled with other risk factors (for example, a disrupted childhood), does enhance the probability of that teen mimicking the
actions in the game. To supplement this video, you may wish to access and discuss portions of the article by Gentile, Lynch, Linder, and Walsh (2004) that is mentioned in the segment. The video is also suitable for use when discussing the functions of the frontal lobe (Chapter 2, Neuroscience) and observation learning (Chapter 4, Learning).


Worth Video Anthology for Introductory Psychology: Do Adolescents Lack Empathy? (3:20)
This video presents evidence that the teenage brain is not yet fully developed. It illustrates how a teenager is unable to distinguish facial expressions of fear from expressions of surprise or anger. When the teen is viewing the pictures, fMRI readings reveal activity in the emotional areas (similar to adult activity), but no activity in the frontal lobe (unlike the pattern of activation in adults). Because the frontal lobes of the brain are involved in planning and judgment, these findings suggest that teens’ reactions to stimuli may not be tempered by mature decision making. Additionally, the differences between teens and adults support the narrator’s contention that the teenage brain is not physically mature.

A major issue in developmental psychology is nature versus nurture: Do people’s traits and behaviors result from heredity (nature) or the environment (nurture)?

Worth Video Anthology for Introductory Psychology: Nature Versus Nurture: Growing Up Apart (1:48)
This video illustrates the case of twins who were separated at birth and not reunited until adulthood. The men share many traits (including the same occupation), suggesting the influence of nature (genetic factors) on their development. The similarities in mannerisms is obvious and a great resource to revisit the nature–nurture issue.

Worth Video Anthology for Introductory Psychology: Homosexuality and the Nature–Nurture Debate (8:00)
The video focuses on two cases of male twins: a set of 8-year-old fraternal twins and a set of adult identical twins. One of the 8-year-olds has clear feminine interests, whereas the other has clear male interests, differences that their mother had observed when they were only 18 months old. Because the boys were raised in a similar home environment, psychologist Michael Bailey suggests that nurture is not a plausible explanation. Although the two adult males are identical twins, one is straight and the other is gay, also reflecting behavioral differences they had demonstrated in childhood. If identical twins have differing sexual orientations, clearly an explanation other than genes is warranted. Bailey proposes that the environment in the womb may be a contributing factor.
As a prelude to the development of this explanation, the video illustrates how research with rats has indicated that male rats castrated at birth behave like females, whereas female rats injected with testosterone at birth behave like males, implicating hormones as a strong influence on sexual orientation. Other research consistently demonstrates that the more older brothers a man has, the greater the likelihood of his being gay (e.g., Blanchard & Bogaert, 1996, shown in the video). One theoretical explanation is that when a woman is pregnant with a male fetus, her body reacts by producing antibodies to the proteins on the male Y chromosome as if they were foreign substances, changing the prenatal environment for subsequent male babies. This explanation, however, does not answer the question of why twins who developed in the same womb have different sexual orientations. The appeal of this video is heightened not only by the answers it offers, but by the unanswered questions it raises.


Most psychological researchers agree that there are seven stages of development (Table 7.1).
1. Prenatal (conception to birth)
2. Infancy (birth to 2 years)
3. Childhood (2 to 12 years)
4. Adolescence (12 to 18 years)
5. Young adulthood (18 to 40 years)
6. Middle adulthood (40 to 65 years)
7. Late adulthood (65 years and over)

**I. Prenatal Development and Infancy**

*PsychSim 5 Tutorial: Conception to Birth*

This module provides a visual introduction to developmental psychology, and prenatal development, in particular. Some of our students have found prenatal development to be rather dry material, so we suggest using this module as a preview of developmental psychology before any class discussion of it. After offering explanations of fertilization, the germinal phase, the embryonic phase, and the fetal phase, with information about the process involved in each phase, the module concludes by giving viewers an opportunity to observe the entire prenatal development process.

**A. Prenatal Development**

1. Human conception begins when a sperm (male reproductive cell) penetrates the membrane of an ovum or egg (female reproductive cell). When the two combine, a complete set of genetic instructions is formed, half from the father and half from the mother. The fertilized egg that is formed from the union of the sperm and egg is called a *zygote*.
2. The *gene* is the basic unit of genetic instructions. Genes are short segments of *chromosomes*, molecules of DNA that hold the genetic instructions for every cell in our body.

   Every cell of a normal human has 23 pairs of chromosomes, one of each pair coming from the mother and one from the father. It is the 23rd pair of chromosomes that determines a person’s sex. In a female, there are two X-shaped chromosomes (XX); in a male, there is one X-shaped chromosome and one smaller Y-shaped chromosome (XY). It is the Y chromosome that leads to the development of a male, so the sex of the zygote is determined by which sperm, X or Y, fertilizes the egg.
Sometimes the growing cluster of duplicated cells breaks apart early in development, resulting in two clusters with identical genes. These clusters become **identical (monozygotic) twins** because they come from the same zygote. **Fraternal ( dizygotic) twins** originate from the fertilization of two eggs at about the same time. Chance determines which of the $23$ pairs of chromosomes goes to a reproductive cell, so there are $2^{23}$ (about $8$ million) chromosome possibilities for each reproductive cell in each parent, so fraternal twins, as well as any two children of the same parents, may vary greatly in appearance.

3. **Prenatal development** occurs in three stages.

*PsychSim 5 Tutorial: Conception to Birth*

In this demonstration, students will observe prenatal growth and development in an animation from conception to birth. Stages of development are shown in segments throughout the activity and then shown fully in the video animation review prior to a summarizing activity for students. Individual screens will illustrate conception through $8$ weeks, weeks $9$ through $13$, weeks $14$ through $25$, weeks $26$ through birth ($38$ weeks), and the actual birth process.

a. The germinal stage begins with the formation of the zygote and ends after about two weeks when the outer portion of the zygote’s developing cluster of cells has attached itself to the uterine wall.

b. During the embryonic stage (from two weeks to about two months), the major structures and organs of the body begin to develop, and the embryo starts to resemble a human being.

c. During the fetal stage (from about two months to birth), the developing organism is called a fetus, and the body structures and organs complete their growth very rapidly.

*Worth Video Anthology for Introductory Psychology: Prenatal Brain Development: From Conception to Birth (5:29)*

This video contains a descriptive animation of the process of prenatal brain development. The animation follows the developing nervous system of the fetus from conception to birth, showing the forebrain, midbrain, and hindbrain as they grow and specialize, and as the cerebral cortex expands. The processes of neurogenesis, exuberant synaptogenesis, and synaptic pruning are also illustrated.

*Worth Video Anthology for Introductory Psychology Prenatal Animation (2:25)*

This video shows a rapid time animation of the cell division and development of a fetus from conception to birth. We suggest using the video, after discussing this topic in class, as a tool to review this information. If used after such discussions, the video can be stopped periodically to test student understanding of this process.

4. Prenatal development is mainly a function of the zygote’s genetic code (nature), but the environment (nurture) also plays a role. **Teratogens** are environmental agents (such as drugs or viruses), diseases (such as German measles), and physical conditions (such as malnutrition) that impair prenatal development and lead to birth defects or even death. For instance, **fetal alcohol syndrome (FAS)** occurs when mothers consume large amounts of alcohol during pregnancy, resulting in a range of severe effects, including mental retardation and facial abnormalities. Being a young mother (15 years or younger) or an older mother (35 years or older) also increases the health risks of the fetus.
Premature birth (before the 37th week) and low birth weight are other risks to newborns. Risks of premature birth include immaturity of the lungs and of the digestive and immune systems. Low birth weight is related to neurological handicaps and increased mortality risk.

**Worth Video Anthology for Introductory Psychology: Testing Competency in the Newborn (1:05)**

This video provides an overview of the APGAR test given to newborns immediately at birth and 5 minutes after birth. If there appear to be any problems with the child, another test is given 10 minutes after birth. The term APGAR stands for activity, pulse, grimace/reflex irritability, appearance/skin color, and respiration. For each of these five dimensions, scores range from 0 to 2, with higher numbers indicating a healthier baby. A score of 7 is considered average. For more information about the APGAR test, go to [http://kidshealth.org/parent/pregnancy_newborn/pregnancy/apgar.html](http://kidshealth.org/parent/pregnancy_newborn/pregnancy/apgar.html).

**B. How We Develop During Infancy**

1. The motor development of an infant begins with reflexes. A reflex is an unlearned response to a specific stimulus. Some reflexes (for example, breathing) have survival value and do not disappear. Other reflexes (such as the following) do disappear.
   a. The Babinski reflex occurs when infants fan their toes upward when their feet are touched.
   b. The grasping reflex occurs when infants grasp any object that touches their palm.
   c. The sucking reflex leads infants to suck anything that touches their lips.
   d. The rooting reflex leads infants to turn their mouth toward anything that touches their cheeks and search for something to suck on.

   Motor development is not a process that unfolds through a genetic program. Instead, it depends on the interaction of factors such as physical strength, body proportions, perceptual abilities, and balance. For instance, infants who can crawl develop a fear of heights, but infants of the same age who are not yet crawling do not show this fear.

**Worth Video Anthology for Introductory Psychology: Reflexes in the Newborn (2:36)**

This video provides a visual demonstration of many of the reflexes discussed in the text. These reflexes are explained in terms of evolutionary adaptation.

2. **Sensory-perceptual development** in vision, hearing, and the other senses occurs throughout infancy.
   a. The preferential-looking technique is used to study vision. Two visual stimuli are displayed side by side, and the researcher records how long infants look at each stimulus. If infants look at one stimulus longer, it is inferred that they can tell the difference between the two stimuli and have a preference. Researchers have also noted infant preference for faces and, in particular, upright faces. Figure 7.1 provides an excellent illustration of tests used to process configural information in upright faces.

   **Habituation** is a decrease in the physiological responding to a stimulus once it becomes familiar; infants tend to look longer at novel stimuli. If infants look longer at a new stimulus than at an old one, it is inferred that they must be able to perceive the difference between the two stimuli. Infants intensify their sucking of a pacifier when confronted with a novel stimulus.
Through these sorts of techniques, researchers have learned that vision is the least-developed sense at birth (newborns’ visual acuity is estimated to be about 20/400 to 20/800). But visual acuity reaches 20/20 within the first year of life. Color vision develops by 2 to 3 months. Infants’ preference for visual complexity may be due to the fact that such stimulation is necessary for proper development of the visual pathways and cortex during infancy. The brain contains about 100 billion neurons at birth, but the infant’s brain is immature, and connections between neurons (neural networks) need to be formed. Without visual experiences, these visual pathways do not develop, and vision is permanently lost. During infancy, the networks of neurons that are used become stronger and those that are not used disappear.

b. Hearing in the newborn is better developed than vision. Newborns can distinguish their mother’s voice from the voices of others. This ability appears to develop in the womb before birth. By 6 months, an infant’s hearing is comparable with that of an adult.

c. Phonemes are the smallest distinctive speech sound in a language. For instance, the difference between the words ball and gall is the difference in the ba and ga phonemes. Different languages have different phonemes, so adults who are not native speakers of one language may have trouble detecting non-native speech sounds. For instance, Japanese adults have trouble with the English r and l sounds.

d. The senses of smell, taste, and touch are also fairly well developed at birth. Infants can differentiate the smell of their mother from the smells of other people.

e. Very young infants may have an innate conceptual understanding of object movement—for instance, that objects cannot go through solid surfaces.

II. How We Think Throughout Our Lives

A. How We Learn Language

No other animal seems to be able to acquire and develop language ability as humans do. Children in different cultures learn to speak very different languages, but they all seem to go through the same sequence of stages.

Worth Video Anthology for Introductory Psychology: Animal Language (3:14)
This is an excellent resource to show students the difficulty of distinguishing between the uniqueness of human language and the obvious forms of communication in so many other species, from primates to insects (to plants!).

http://dx.doi.org/10.1016/j.fgb.2010.05.00 .

1. Infants communicate through crying, with different cries for hunger and for pain, and through movement and facial expressions. They seem to prefer baby talk (or “motherese”), the form of speech that adults use when talking with babies that relies on shorter sentences with a higher, more melodious pitch than normal speech.

2. At about 6 or 7 months, babbling, the rhythmic repetition of various syllables, including both consonant and vowels, begins.

3. At about 1 year of age, infants begin to speak a few words. Their first words usually refer to their caregivers and objects in their daily environment. Infants use holophrases, words that express complete ideas.
4. Vocabulary grows slowly until about 18 months, and then infants learn about 100 words or more per month. **Overextension** is the application of a newly learned word to objects that are not included in the meaning of the word (e.g., calling any female person “mama”). **Underextension** is the failure to apply the new word more generally to objects that are included within the meaning of the new word (e.g., not extending the category of “dog” to include dogs that are not the family pet). As children are continuously challenged with determining the meaning of words, often in ambiguous contexts, the children may rely on the speaker’s nonverbal and emotional cues to clarify meaning.

5. A spurt of vocabulary acquisition occurs between 18 and 24 months, and words are combined into sentences. **Telegraphic speech** is the use of two-word sentences of mainly nouns and verbs (e.g., “Dada eat” for “Dad is having dinner.”)

6. The two-word statements begin to be expanded, and between the ages of 2 and 5 years, children implicitly acquire grammar of the native language.

7. There is a **critical period** for language development. A critical period is a time when learning certain skills is most easily accomplished. That is, it is harder to learn a language later in life than earlier in life. For instance, a girl known as Genie was kept tied to a potty chair for most of the first 13 years of her life. Thus, she had very little exposure to verbal language. After she was rescued, her grammatical development never reached typical developmental levels even after several years of rehabilitation. The notion of a critical period explains why it is so much harder to learn a second language as an adult than as a younger person.

**B. Piaget’s Theory of Cognitive Development**

Rather than formal experiments, Piaget conducted rather loosely structured interviews in which he posed problems for children to solve, observed their actions carefully, and questioned them about their solutions. He was particularly interested in their errors, which provided insights into children’s thought processes. Piaget assumed that a child is an active seeker of knowledge and gains an understanding of the world by operating on it. Schemas (discussed in Chapter 5) are organized units of knowledge about objects, events, and actions.
These three clips show young children (between 1 year and 3 years old) trying to make use of miniature models, despite the impossibility of doing so. In their attempts, they make what Judy DeLoache and colleagues (2004) call “scale errors,” signs of immaturity in perceptual and inhibitory processes during normal child development. These videos can be used to introduce students to developmental differences in cognitive abilities, with theoretical discussions to follow.

In Clip A, an infant girl is given a toy model of a slide and attempts to sit on and slide down the toy slide.

In Clip B, a young boy attempts to fit himself into a small toy car, eventually trying to force his foot in the door (unsuccessfully) while saying “In! In!”

In Clip C, the male child prepares for “story time” by attempting to sit on a miniature sofa chair before falling off.

Cognitive adaptation involves two processes.

1. **Assimilation** is the interpretation of new experiences in terms of present schemes.

2. **Accommodation** is the modification of present schemes to fit with new experiences. Through accommodation, the number and complexity of children’s schemas increase and learning occurs. For example, children may call all four-legged creatures “doggie.” But then children learn that they need to accommodate (change) their schemas, as only one type of four-legged creature is “dog.”

Piaget divided cognitive development into four discrete stages.

a. In the **sensorimotor** stage (birth until about age 2), infants learn about the world through sensory and motor interactions (including the reflexes discussed previously). Infants lack object permanence, the knowledge that an object exists independent of perceptual contact with it. At 8 to 12 months, infants will search for an object even if it is completely hidden, indicating that they realize that it still exists even if they cannot see it. Symbolic representation of objects and events (e.g., the use of telegraphic speech) starts to develop during the latter part of the sensorimotor stage.

**Worth Video Anthology for Introductory Psychology: Objective Permanence (1:10)**

This video provides a brief but highly effective demonstration of not only object permanence but also the “A not B” error, in which a child looks for an object where she last found it, not where she saw it subsequently placed. This brief clip can be easily integrated into lecture.

**Worth Video Anthology for Introductory Psychology: Stranger Anxiety (1:21)**

The survival value of stranger anxiety is discussed, with respect to avoiding unknown situations and looking to parents for clues on how to behave in different (and to the infant, novel) situations.

b. In the **preoperational stage** (from about 2 to 6 years), children’s thinking becomes more symbolic and language-based, but it remains egocentric and lacks the mental operations that allow logical thinking. Children can pretend, imagine, and engage in make-believe play.

**Egocentrism** is the inability to distinguish one’s own perceptions, thoughts, and feelings from those of other people.
**Conservation** is the knowledge that the quantitative properties of an object (such as mass, volume, and number) remain the same despite changes in appearance. Some grasp of conservation marks the end of the preoperational stage and the beginning of the concrete-operational stage. See Figure 7.2 for examples of the various tests of conservation.

The liquid/beakers problem is a common test of conservation ability. Children are first shown two identical short, fat beakers with the same amount of liquid in each. The children watch as the liquid in one beaker is poured into a taller, thinner beaker. Then, the children are asked if the two beakers have the same amount of liquid or if one beaker has more liquid than the other. Children in the preoperational stage think that one beaker has more liquid, usually the taller beaker.

*Worth Video Anthology for Introductory Psychology: Piaget and Conservation Experiments (7:40)*

In this video, students will see examples of the notion of conservation, which is the understanding that changing the shape or form of a stimulus doesn’t change the amount of that stimulus. Video clips are of children at different ages engaged in either a number or a liquid conservation task. To correctly perform the conservation-of-numbers task, a child must realize that the number of objects remains unchanged despite a change in how those objects are presented. As demonstrated in the video, the difference between the two children’s performance is the result of each child’s stage of cognitive development. The 4-and-a-half-year-old has an intuitive understanding of “more” and “less” but no conception of conservation, or the notion that the number of objects remains the same despite a change in their configuration. This lack of conservation is typical of the preoperational stage of development. The 7-year-old, however, has likely advanced to the concrete operational stage of cognitive development.

A major reason why preoperational children do not understand conservation is that they lack an understanding of **reversibility**, the knowledge that reversing a transformation brings about the conditions that existed before the transformation. The children’s thinking also reflects **centration**, the tendency to focus on only one aspect of a problem at a time.

**c. The concrete operational and formal operational stages.** Children progress from the preoperational state to the concrete operational stage and then to the formal operational stage (Table 7.2).

(i) In the **concrete operational stage** (6 to 12 years), children gain a fuller understanding of conservation and other mental operations that allows them to think logically, but only about concrete events. Conservation of liquids, numbers, and matter is mastered early in this stage, but conservation of length is acquired later in the stage. In this stage, children also develop transitivity (if A > B and B > C, then A must be > C) and seriation, the ability to order stimuli along a quantitative dimension—for example, arranging a set of pencils by length.

The reasoning of concrete operational children is tied to immediate reality (what is in front of them and tangible), not with the hypothetical world of possibility.

(ii) In the **formal operational stage**, which begins at around age 12, children gain the capacity for hypothetical-deductive thought. Children can engage in hypothetical thought and in systematic deduction and testing of hypotheses.
In one scientific thinking task, children are shown several flasks of what appear to be the same clear liquid and are told that one combination of two of these liquids will produce a blue liquid. Their task is to determine which combination will produce a blue liquid. Children in the concrete operational stage just start mixing different clear liquids together haphazardly. Children in the formal operational stage develop a systematic plan for deducing what the correct combination must be by first determining all the possible combinations and then systematically testing each one.

Children in the formal operational stage can evaluate the logic of verbal statements without referring to concrete situations. For example, formal operational children judge the statement “If cats are bigger than horses, and horses are bigger than mice, then cats are bigger than mice” to be true, even though in “real life” cats are not bigger than horses.

*Scientific American Introductory Psychology Videos: Cognitive Development (7:00)*

This is an excellent video to summarize the previous section of this chapter, with a review of Piaget’s stages of cognitive development. Egocentrism and Theory of Mind are highlighted as well as other examples to demonstrate cognitive developmental milestones. The video ends by discussing Piaget’s role within the field of developmental psychology.

In evaluating Piaget’s theory, recent research has shown that rudiments of many of Piaget’s key concepts (such as object permanence) may begin to appear at stages earlier than Piaget proposed. Infants and young children may be more cognitively competent than Piaget theorized. Other research on tracking infants’ eye movements found that infants as young as 3 months continue to stare at the place where an object disappeared from sight, indicating some understanding of object permanence.

Not all people reach formal operational thought. In addition, Piaget’s theory may be biased in favor of Western culture, and it does not hypothesize what occurs after the onset of adolescence. Moreover, from the perspective of the information-processing approach to cognitive development, cognitive growth emanates from expanded knowledge and storage capacity, complemented by faster processing of information.

*PsychSim 5 Tutorial: Cognitive Development*

This module contains information pertaining to Piaget’s theory of cognitive development. In addition to reviewing information in the text (or previewing information in the text, depending on how this module is used), students can simulate three of Piaget’s experiments dealing with conservation of number, conservation of liquid, and seriation. The module explains why children at different levels of development make the type(s) of mistakes they do. In two places in the module, a table summarizes the four stages of Piaget’s theory and approximates what ages correspond to a particular stage.

*Class Activity/Homework Assignment: Create a Toy*

To encourage students to focus on the different competencies that develop in each of Piaget’s stages, you might ask them to create a toy that is suitable for a child in a particular stage.

**C. Vygotsky’s Sociocultural Approach to Development**

Vygotsky stressed that cognitive abilities develop through interactions with others and represent the shared knowledge of one’s culture.
The **zone of proximal development** is the difference between what children can actually do and what children could do with the help of others (potential development minus actual development).

In **scaffolding**, the teacher adjusts the level of help in relation to children’s level of performance, while directing children’s learning progress toward the upper level of their zone of proximal development.

**Worth Video Anthology for Introductory Psychology: Chomsky’s View of Language Development (1:23)**

This video provides supplementary information on cognitive development. This short clip introduces the development of language in childhood. We recommend reading some of Chomsky’s ideas, perhaps in a general developmental psychology textbook, before discussing this video in class.

**Worth Video Anthology for Introductory Psychology: Gleason’s Wug Test (1:08)**

Another video that provides information about a methodological procedure used to show how children can apply rules of their language to words and phrases they have never heard before, suggesting a biological predisposition to learning language rules.

### D. How Intelligence Changes in Adulthood

1. Two methods are used for studying intelligence changes.
   a. The cross-sectional method. In a **cross-sectional study**, people of different ages are studied and compared with one another. Cross-sectional studies consistently find that intelligence declines with age. However, longitudinal studies find that intelligence does not decline with age but remains rather stable and even increases until very late in life, when it shows a decline.

      The problem with cross-sectional research is the **cohort effect**. People of a given age are affected by factors unique to their generation (for example, educational opportunities), leading to differences in performance between generations.

   b. The longitudinal method. In a **longitudinal study**, the same people are studied over a long period. For instance, a researcher may measure the intelligence of the same individuals numerous times, perhaps once every five years. Such repeated testing of the same individuals over time helps control for cohort effects.

      Longitudinal research has its own set of problems. It is time-consuming and expensive, and repeated testing is necessary. Participants may die or drop out of the study. Participants who stay the course of the research may not be representative of the entire original group. They may be the most intelligent and healthiest participants, the ones whose intelligence would be the most likely not to decline. Pros and cons of each are summarized in Table 7.3.

2. Types of Intelligence
   a. Crystallized intelligence refers to accumulated knowledge, verbal skills, and numerical skills that increase with age.
   b. Fluid intelligence involves abilities such as abstract thinking and logical problem solving that decrease with age.
   c. The Seattle Longitudinal Study was a major attempt to learn if intelligence declines with age. Starting in 1956, more than 5,000 participants were tested every seven months through 1998. Groups of new participants were added periodically, making the research partly cross-sectional and partly longitudinal.
The Seattle study found that most intellectual abilities decline somewhat by age 60, but the decline is not great until age 80 or more. People who suffered the least decline were people who stayed healthy, were of higher socioeconomic status, and were in intellectually stimulating environments.

III. Moral Development and Social Development

A. Kohlberg’s Theory of Moral Reasoning
Kohlberg’s theory was developed using a series of stories that involved moral dilemmas to assess a person’s level of moral reasoning and was built on an earlier theory of moral reasoning proposed by Piaget.

Kohlberg’s theory discerned three levels of moral reasoning based on responses to the stories and the reasoning behind the responses (Table 7.4).

III. Moral Development and Social Development

A. Kohlberg’s Theory of Moral Reasoning
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Worth Video Anthology for Introductory Psychology: Moral Development: The Heinz Dilemma, Clips A-H (14:00)
This video provides eight clips of conversations with participants who have been read a scenario in which a man’s wife is dying of a rare disease that can only be cured by a special, very expensive medicine produced by a particular pharmacist. The man cannot afford the medicine, but offers to pay the pharmacist a significant down payment and to continue to repay him over time. The pharmacist refuses this arrangement, so the man breaks into the pharmacy and steals the drug as a last-ditch effort to save his wife’s life.

Clips A, B, and G each illustrate preconventional moral reasoning, basing moral judgments on the consequences of an action. Clips C, D, F, and H each illustrate conventional moral reasoning, basing moral judgments on social roles and society’s laws. Although all participants agreed that stealing the drug was the correct decision in the situation, they all also agreed that stealing the drug was morally wrong. Clip E illustrates postconventional moral reasoning, basing moral judgment on the principle that a life should be saved above all else.

We tend to begin a class discussion of Kohlberg’s theory of moral reasoning with three videos and use comments made in each to teach the theory.

1. At the preconventional level of moral reasoning, the emphasis is on avoiding punishment and looking out for one’s own welfare and needs; moral reasoning is self-oriented.
2. At the conventional level of moral reasoning, moral reasoning is based on social rules and laws. Social approval and being a dutiful citizen are important.
3. At the highest level, the postconventional level of moral reasoning, moral reasoning is based on self-chosen ethical principles, with human rights taking precedence over laws, and the avoidance of self-condemnation for violating principles.

Kohlberg proposed that children start at the preconventional level and move up the ladder of moral reasoning as they develop (particularly in the cognitive realm). The sequence is uniform; however, not everyone reaches the postconventional level.

Kohlberg’s theory has some shortcomings.
  a. Kohlberg studied moral reasoning, not moral behavior.
  b. He may not have adequately represented the morality of women.
  c. The higher levels may be biased toward Western cultures.
Class Activity/Discussion Topic: Dilemmas

In an adolescent psychology course, Doug Davis from Haverford College has incorporated an assignment, available at http://www.haverford.edu/psych/ddavis/p109g/kohlberg.dilemmas.html, in which students respond to a series of questions about several dilemmas. A sample of one of the dilemmas is as follows:

Judy was a twelve-year-old girl. Her mother promised her that she could go to a special rock concert coming to their town if she saved up her babysitting and lunch money to buy a ticket to the concert. Judy managed to save up the 15 dollars the ticket cost plus another five dollars. But then her mother changed her mind and told Judy that she had to spend the money on new clothes for school. Judy was disappointed and decided to go to the concert anyway. She bought a ticket and told her mother that she had only been able to save five dollars. That Saturday she went to the performance and told her mother that she was spending the day with a friend. A week passed without her mother finding out. Judy then told her older sister, Louise, that she had gone to the performance and had lied to her mother about it. Louise wonders whether to tell their mother what Judy did.

Questions include items relating to whether Louise should tell their mother, whether earning the money was important, and the importance of keeping a promise. These and other items all include a “why or why not?” question for each item. After completing a dilemma, students may discuss how their explanations are linked to Kohlberg’s stages of moral reasoning. You may modify the questions to fit your own particular time allotment for discussion or to focus specifically on how responses exemplify different stages of moral development, as proposed by Kohlberg.

Worth Video Anthology for Introductory Psychology: Moral Thinking and Emotion: A Challenging Dilemma (5:35)

This video discusses the prefrontal cortex, and in particular, the anterior cingulate cortex, which appears to be important in helping us resolve inner conflict. Two moral dilemmas are presented, which are conceptually identical in outcome (killing one person to save the lives of five other people), but require people to perform two different acts (throwing a switch or pushing another human being to his death) to save the lives of five people. It appears that when asked to push another human being to his death to save the lives of five other people, the emotion areas of the brain tend to be activated. A subsequent moral dilemma is presented in which the conflict between moral feeling and moral thinking is highlighted. After receiving information from different parts of the brain, it appears the anterior cingulate cortex integrates these data to help people make a final decision in moral dilemmas. This video brings information about the physiology of moral reasoning into class discussions.

B. Attachment and Parenting Styles

Attachment is the lifelong emotional bond that exists between infants and their mothers or other caregivers, formed during the first 6 months of life.
1. Harry Harlow conducted a famous attachment study. Harlow separated infant monkeys from their mothers at birth and put the baby monkeys in cages containing two inanimate surrogate mothers, one made of wire and one made of terry cloth. Half the monkeys received their nourishment from a milk dispenser in the wire mother and half received nourishment from a dispenser in the terry cloth mother. All the monkeys preferred the cloth mother regardless of which mother provided their nourishment. The monkeys fed by the wire mother would go to the wire mother only to eat; they would then return to the cloth mother. Thus, “contact comfort,” not reinforcement from nourishment, was the crucial element for attachment formation.

When confronted with a strange situation (an unfamiliar room with toys) without the cloth mother, the infant monkeys would be fearful. When the cloth mother was brought into the strange situation, the infant monkeys would initially cling to the terry cloth mother to reduce their fear, but gradually they would begin to explore the new environment and eventually play with toys.

Worth Video Anthology for Introductory Psychology: Harlow’s Studies on Dependency in Monkeys (6:12)
This video provides fascinating archival footage of actual research being done with monkeys and their preference for a cloth mother over a wire mother (both of which were constructed by the researchers). The footage shows a baby monkey, when scared, clinging to a cloth mother instead of a wire mother and gaining confidence after doing so. Other footage shows a baby monkey, having been reared completely by a wire mother, being placed in a strange room. A wire mother is introduced, but the baby monkey ignores it. However, when a cloth mother is introduced, the baby monkey clings to it.

2. Types of attachment have been discerned via the “strange situation” devised by Ainsworth, in which an infant’s behavior in an unfamiliar room with toys is observed, while the infant’s mother or caregiver and a stranger move in and out of the room in a structured series of simulations.

Worth Video Anthology for Introductory Psychology: The Strange Situation and Attachment: Clips A-C (12:21)
These clips contain videos taken from Ainsworth’s Strange Situation experiments. Each participant dyad is a parent and a child who go through the same scenario. First, the mother is allowed to play with her child for 3 minutes in a room of toys. Then, a stranger (an experimenter the child has never met) enters the room and sits next to the mother for 3 minutes. The mother then leaves the room for 3 more minutes, allowing the stranger to interact with the child. For the next 3 minutes, the mother returns and the stranger leaves, followed by the mother again leaving the room for 3 minutes. Now, the child is left alone. When 3 minutes is up, it is the stranger who returns and attempts to comfort the child. Finally, the mother enters for a last time, the stranger leaves, and the mother attempts to re-interest the child in playing with the toys. The child’s reactions during these “strange situations” have been organized into four “attachment styles,” three of which are illustrated in three different videos.

Clip A provides an example of secure attachment.
Clip B provides an example of anxious-ambivalent attachment (called insecure-ambivalent in the textbook).
Clip C provides an example of anxious-avoidant attachment (called insecure-avoidant in the textbook).
a. **Secure attachment** is indicated when an infant explores the situation freely in the presence of the mother, displays distress when the mother leaves, and then responds enthusiastically when the mother returns. Caregivers who are sensitive and responsive to an infant's needs are more likely to develop a secure attachment with the infant.

b. **Insecure-avoidant attachment** is indicated by exploration but minimal interest in the mother; the infant shows little distress when the mother leaves and avoids her when she returns.

c. **Insecure-ambivalent attachment** is indicated by the infant seeking closeness to the mother and not exploring the situation, manifesting a high level of distress when the mother leaves, and then showing ambivalent behavior when she returns by alternately clinging to and pushing away from her.

d. **Insecure-disorganized (disoriented) attachment** is marked by the infant's confusion when the mother leaves and when she returns. The infant acts disoriented, seems overwhelmed by the situation, and does not demonstrate a consistent way of coping with it.

**Worth Video Anthology for Introductory Psychology: Morelli’s Strange Situation Test (3:12)**

This video presents footage of research done in the Congo similar to the “strange situation” research conducted in the United States. The methods closely parallel how the research was conducted in Western nations and the findings are similar. Types of attachment are defined and examples are given.

Infant temperament, a set of innate tendencies or dispositions that lead to certain patterns of behavior, is also a factor in determining type of attachment. How infants’ temperaments match the child-rearing expectations and personality of their caregivers is important in forming attachment relationships.

Secure attachments have been linked to higher levels of cognitive functioning and social competence in adulthood. Day care does not appear to be detrimental to the formation of secure attachments.

3. Researchers have identified four basic parenting styles.

   a. **Authoritarian parents** are demanding and expect unquestioned obedience from their children.

   b. **Authoritative parents** are demanding but set rational limits for their children and communicate well with their children. Authoritative parents seem to have the most positive effect on cognitive and social development, and their children are the most independent, happy, self-reliant, and academically successful.

   c. **Permissive parents** make few demands and are overly responsive to their children’s desires, letting their children do pretty much as they please.

   d. **Uninvolved parents** minimize both the time they spend with the children and their emotional involvement with them. They do little more than provide for basic needs.

**Class Activity/Discussion Topic or Homework Assignment: Exploring Parenting Styles**

You may use the following scenarios as the basis for a homework assignment, in-class discussion, or both (with students discussing answers they prepared at home).
• Your 8-year-old daughter wants to sleep over at the house of one of her classmates (one other friend will also sleep over to make it three girls). Her parents will call you in about an hour to let you know that they do not mind if their daughter has a sleepover. You have seen this other little girl at the school when you drop your daughter off and pick her up, but she has never been to your house, and you have not talked to her parents before this time.

• Your 8-year-old son has decided to run away. You caught him just as he is headed out the door. He has on a backpack that he says contains a blanket, his stuffed bear, a slice of bread (to eat when he gets hungry), and a dollar. He is heading off to live with his friend, who lives two miles away and has nice parents. He is mad because you will not let him stay up past 9:00 P.M.

Relationships between parenting styles and child outcomes were established primarily with white, middle-class families. However, there may be differences among other populations. For instance, an authoritarian parenting style is associated with more positive outcomes for children of Chinese parents and girls of African-American parents. Friends, in addition to parents, are important in social development. For instance, popular children tend to be liked by most other children and have good social skills. Children who are rejected by their peers tend to be aggressive or withdrawn. Rejected children are also at increased risk for both emotional and social difficulties.

C. **Theory of Mind**

Beyond attachment and friendships, another key aspect of children’s social development is the emergence of a theory of mind, based on the realization that other people may have different thoughts and emotions than they do. Specifically, theory of mind is defined as the understanding of the mental and emotional states of ourselves and others. It encompasses the idea that other people may have incorrect or false beliefs.

**Worth Video Anthology for Introductory Psychology: Theory of Mind: Taking the Perspective of Others (1:40)**

In this video, an adult plays “hide the candy” with young children. At first, the adult hides the candy in one hand and a child guesses which hand has the candy. The children quickly understand the objective of this part of the game. However, the second part of the game, when the children hide the candy, is more difficult for younger children who have not yet developed a theory of mind; that is, they do not yet distinguish between what the adult can and cannot see. The narrator indicates that a theory of mind develops as children mature (and, although not mentioned in the video, as egocentrism declines).

Linked to the theory of mind is the idea that children can develop empathy based on their understanding of the emotions of others. However, children who have autism typically demonstrate deficits in several aspects of social interaction, including both empathy and imitation. As mentioned in Chapter 4, mirror neurons provide a potential mechanism for explaining empathy and imitation. The video **Mirror Neurons (14:00)**, available at http://www.pbs.org/wgbh/nova/sciencenow/3204/01.html, includes a segment that shows how the brain waves of a child with autism differ from those of other children when watching the actions of other people. If you did not show this video in the context of observational learning, we strongly suggest that you show it in connection with the theory of mind. The videos below focus more specifically on autism.
Worth Video Anthology for Introductory Psychology: The Two Faces of Autism (4:20)

This video shows excerpts from the lives of two autistic 11-year-old boys. Because autism involves a lack of capacity for social interaction, you may opt to show the video in the context of discussing social development. However, autistic children may demonstrate cognitive impairments, such as difficulties in language development or imagination, so you can choose to include this video in either of these contexts, as well. The narrator explains that at present there is no cure for autism. Should you or your students want to gather additional basic information about the symptoms, causes, and treatment of autism and related developmental disorders, you may begin at the Mayo Clinic site, http://www.mayoclinic.com/health/autism/DS00348/DSECTION=3

Worth Video Anthology: Childhood Disorder: Understanding Autism (7:18)

This video, narrated by Alan Alda, explores the relatively common (1 child in 700 to 800) disorder of autism, which is marked by difficulty in social relationships. Children with autism show similar reactions to parents and strangers, whereas nonautistic children tend to show different reactions to parents and strangers. Children with autism tend not to display normal reactions to social stimuli, such as establishing eye contact at critical times when communicating with others. It is suggested that children with autism do not imitate adults, something that nonautistic children do relatively automatically. Intervention programs are trying to teach autistic children the skills of imitation to reduce their difficulties in future social relationships.

D. Erikson’s Psychosocial Stage Theory of Development

Erikson’s theory emphasizes the impact of society and culture on development, and although it led to an increase in research on life-span development, it is criticized for the absence of solid experimental data to support it.

Erikson’s theory identifies eight stages of development (Table 7.5) with a major issue or crisis that has to be resolved; each stage is named after the two sides of the issue/crisis.

Worth Video Anthology for Introductory Psychology: Erikson’s Stages of Psychosocial Development: Trust Versus Mistrust (2:00)

This video is an introduction to Erikson’s theory. It contains information specifically about the first stage of his theory. However, some of its messages could apply to any of the stages. For instance, the conflict at each stage is never completely solved or unresolved. People in all stages may have issues of trusting other people, depending on the other person and the situation.

1. **Trust Versus Mistrust** (birth to 1 year): Infants learn that they can or cannot trust others to take care of their basic needs.

2. **Autonomy Versus Shame and Doubt** (1 to 2 years): Children learn to be self-sufficient in many activities such as toilet training, walking, and exploring. If restrained too much, they learn to doubt their abilities and feel shame.

3. **Initiative Versus Guilt** (3 to 5 years): Children learn to assume more responsibility by taking the initiative, but they feel guilty if they overstep the limits set by parents.

4. **Industry Versus Inferiority** (5 years to puberty): Children learn to be competent by mastering new intellectual, social, and physical skills or to feel inferior if they fail to develop these skills.
5. **Identity Versus Role Confusion** (adolescence): Adolescents develop a sense of identity by experimenting with different roles, or they do not do so, which results in role confusion. Erikson’s best-known concept, identity crisis, is part of the fifth stage. For most adolescents, however, the event is more a search or exploration than a crisis.

**Worth Video Anthology for Introductory Psychology: Are Today’s Girls Academically Superior to Boys? (5:40)**

This video is likely to generate considerable debate. Regarding formation of identity, school psychologist Michael Thompson discusses how social pressures shape those aspects of identity that adolescents consider important. Reporting that girls outperform boys in all academic areas, he suggests that boys are pressured to excel in sports and may be considered “demigods” for their athletic prowess, whereas girls are encouraged to focus on being good students. He argues that, in our current society, being a good student is not associated with masculinity. He also proposes ways to address this problem (e.g., greater involvement of fathers in their sons’ education, single-sex classrooms). However, Johnson acknowledges that people may fail to consider gender differences in academic performance as a problem because, after leaving school, men earn higher salaries than women.

**Worth Video Anthology for Introductory Psychology: Sexual Identity Goes Awry (6:30)**

This video explores how an 11-year-old girl and her mother adjust to the girl’s feelings that she should be a boy. The case study tracks how she and her mother sought the help of counselors and therapists prior to deciding whether Kayla should grow up as a boy. After the decision favoring a gender transformation was made, both the mother and child explain their reactions to multiple life changes (e.g., redesigning the bedroom, getting a new haircut, officially changing the child’s name, dealing with pressures at school). The video concludes as he is accepted as a candidate for hormone therapy to halt the development of secondary female sex characteristics. Clearly, this video raises questions about the role of nature and nurture in the development of sexual identity.

**PsychSim 5 Tutorial: Who Am I?**

This module extends information in the text on identity formation. There is a 32-item test for students to take (with scoring directions) called the Ego Identity Process Questionnaire. The questionnaire allows students to assess their levels of identity commitment and identity exploration, which are the two components of James Marcia’s identity status model (a summary diagram of the model is included). Students’ scores can be used to assess their level of identity achievement, which Erikson contended was the main goal of this stage of development. Discussion further extends the text with information about other identity statuses. In addition, there are observations of five individuals at different levels of identity achievement. Students observe each person, listen to what the person is saying, and then estimate his or her relative identity status.

6. **Intimacy Versus Isolation** (young adulthood): Young adults form intimate relationships with others or become isolated because of failure to do so.

7. **Generativity Versus Stagnation** (middle adulthood): Middle-aged adults feel that they are helping the next generation through their work and child rearing, or they stagnate because they feel that they are not doing so.
8. **Integrity Versus Despair** (late adulthood): Older adults assess their lives and develop a sense of integrity if they find their lives to have been meaningful; they develop a sense of despair if they feel their lives have not been meaningful.

**PsychSim 5 Tutorial: Signs of Aging**

This module presents information on senescence, or age-related physical decline. Aging is defined and divided into two types, primary and secondary aging. Three major signs of aging are explained, specifically, as changes in appearance, changes in sensory abilities, and changes in physical abilities. Video animations of aging include clips of people aging rapidly over the course of a few photos to highlight the change in appearance. Sensory changes and changes to physical function are shown graphically and through interviews. In addition to information about these processes, the video clips show adults discussing how they have adapted to the changes.

Probably the greatest impact of Erikson’s theory is that it expanded the study of developmental psychology past adolescence into adulthood. The sequence in the theory (intimacy issues followed by identity issues) is most applicable to men and career-oriented women. Many women resolve these issues in reverse order or simultaneously. For example, a woman may marry and have children and then confront identity issues when the children become adults.

**Lecture Topic: Myth of Declining Happiness with Age**

Your text indicates that, in late adulthood, people deal with the issue of integrity versus despair. In this regard, Lilienfeld, Lynn, Ruscio, and Beyerstein (2010) address the myth that “old age is typically associated with increased dissatisfaction and senility” (p. 56). You may opt to discuss evidence to refute this myth and why it proliferates (e.g., media influences). For example, Yang (2008) conducted a comprehensive analysis of 32 years of data from the General Social Survey, which uses a stratified probability sample that is representative of noninstitutionalized U.S. adults. Overall happiness was measured on a 3-point scale, ranging from 1 (very happy) to 3 (not too happy). Yang concluded “...with age comes happiness. ... This supports the ‘age as maturity’ hypothesis suggested by the role theory of aging. The age effects are strong and independent of the period and cohort effects. ... It is important to note that in models of happiness where all three temporal factors are considered, the age effects dominate and the period and cohort variations are small” (pp. 220–221).

Lacey, Smith, and Ubel (2006) provide further evidence to refute the myth. They conducted an Internet survey among 273 people from a large pool of Internet users. Overall happiness was measured using a 10-point scale (Fordyce, 1988), ranging from 1 (extremely unhappy) to 10 (extremely happy). Results supported the hypothesis that older people are happier than younger people. The differences in ratings of one’s own happiness were similar for men and women. However, consistent with the myth that older people experience less happiness, participants incorrectly perceived that happiness for the average person would decrease with age.


**Homework Assignment or Class Activity: Erikson’s Psychosocial Stages**

This assignment requires students to apply information from Erikson’s Psychosocial Stage Theory to people they know. The assignment may be adapted for in-class use by asking students to initially discuss examples in small groups, reach consensus on the most interesting example of each stage, and then present these examples to the class. Or, you may ask different small groups to focus their discussion and examples on a subset of stages (e.g., infancy and early childhood, 3 years to puberty, adolescence and young adulthood, and middle and late adulthood). On the next page is a handout that you can copy and give to each student to use for this assignment or activity.

**PsychInvestigator: How Children Think**

This video summarizes research over the past half-century and asks student participants to answer questions related to different theories of development. The investigation focuses on comparing the mental processes of children and adults, followed by an analysis, review, and quiz to test comprehension of the topic.
APPLYING ERIKSON’S STAGES

Your text describes Erikson’s eight stages of psychosocial development, including approximate ages, issues, and tasks associated with each stage. For each of the eight stages, think of an individual you know (or have known) who is in (or who you can recall going through) that stage.

1. Indicate the gender and approximate age of the individual.

2. Give a brief example of how this individual is handling or reacting to (or has handled or reacted to) the relevant tasks described in text Table 7.5 for each stage (e.g., developing a sense of trust, learning to be self-sufficient, learning to assume responsibility and initiate tasks, etc). Be sure to give at least one example, rather than just repeating the description of the task. For example, don’t just say a child is (or is not) developing trust; give an illustration of what the child does (or does not do) that leads you to think this.

3. Indicate how you think the issue for each stage has been (or will be) resolved, using the terminology in your text (e.g., for infancy, will the individual develop [or did the individual develop] trust or mistrust? For ages 1 to 3, will the individual develop [or did the individual develop] autonomy or shame and doubt?, etc.).