

Developmental Psychology

CHAPTER 9

KEY TERMS

Developmental psychologist	Sigmund Freud	Jean Piaget's cognitive developmental theory
Nature versus nurture	Oral stage	Schemata
Cross-sectional research	Anal stage	Assimilation
Longitudinal research	Phallic stage	Accommodation
Teratogens	Genital stage	Sensorimotor stage
Fetal alcohol syndrome (FAS)	Erik Erikson's psychosocial developmental theory	Object permanence
Newborn reflexes	Trust versus mistrust	Preoperational stage
Attachment	Autonomy versus shame and doubt	Egocentric
Harry Harlow's attachment research	Initiative versus guilt	Concrete operations
Mary Ainsworth's strange situation	Industry versus inferiority	Concepts of conservation
Secure attachments	Identity versus role confusion	Formal operations
Avoidant attachments	Intimacy versus isolation	Metacognition
Anxious/ambivalent attachments	Generativity versus stagnation	Lawrence Kohlberg's moral developmental theory
Authoritarian parents	Integrity versus despair	Preconventional stage
Permissive parents		Conventional stage
Authoritative parents		Postconventional stage

OVERVIEW

In a way, developmental psychology is the most comprehensive topic psychologists attempt to research. Developmental psychologists study how our behaviors and thoughts change over our entire lives, from birth to death (or conception to cremation). Consequently, developmental psychology involves many concepts traditionally included in other areas of psychology. For example, both personality researchers and developmental psychologists closely examine identical twins for personality

similarities and differences. Some psychologists consider development psychology to be an applied, rather than pure, research topic. That is, developmental psychologists apply research from other areas of psychology to special topics involving maturation.

One way to organize the information included in the developmental psychology section is to think about one of the basic controversies: nature versus nurture. This chapter discusses influences on development from *nature* (genetic factors) first and then moves on to theories about *nurture* (environmental factors).

RESEARCH METHODS

Studies in developmental psychology are usually either *cross-sectional* or *longitudinal*. Cross-sectional research uses participants of different ages to compare how certain variables may change over the life span. For example, a developmental researcher might be interested in how our ability to recall nonsense words changes as we age. The researcher might choose participants from different age groups, say 5–10, 10–20, 20–30, 30–40, and test the recall of a list of nonsense words in each group. Cross-sectional research can produce quick results, but researchers must be careful to avoid the effects of historical events and cultural trends. For example, the 30–40-year-old participant group described in the study above might have had a very different experience in school than the 5–10-year-olds are having. Perhaps memorization was emphasized in school for one group and not another. When the researcher examines the results, she or he might not know if the differences in recall between groups are due to age or different styles of education.

Longitudinal research takes place over a long period of time. Instead of sampling from various age groups as in cross-sectional research, a longitudinal study examines one group of participants over time. For example, a developmental researcher might study how a group of mentally challenged children progress in their ability to learn skills. The researcher would gather the participants and test them at various intervals of their lives (for example, every three years). Longitudinal studies have the advantage of precisely measuring the effects of development on a specific group. However, they are obviously time consuming, and the results can take years or decades to develop.

PRENATAL INFLUENCES ON DEVELOPMENT

Genetics

In the chapter about biological influences on behavior, you reviewed basic information about how hereditary traits are passed on from parents to their children (see Chapter 3 for a review). Many developmental psychologists investigate how our genes influence our development. Specifically, researchers might look at identical twins in order to determine which traits are most influenced by genetic factors (for example, the Bouchard twin study). Our genes also help determine what abilities we are born with, such as our reflexes and our process of developing motor skills.

Teratogens

Most prenatal influences on our development are strictly genetic (nature) in origin. However, the environment can also have profound influences on us before we are born. Certain chemicals or agents (called *teratogens*) can cause harm if ingested or contracted by the mother. The placenta can filter out many potentially harmful substances, but teratogens pass through this barrier and can affect the fetus in profound ways. One of the most common teratogens is alcohol. Even small amounts of alcohol can change the way the fetal brain develops. Children of alcoholic mothers who drink heavily during pregnancy are at high risk for *fetal alcohol syndrome (FAS)*. Children born with FAS have small, malformed skulls and mental retardation. Researchers are also investigating a less severe effect of moderate drinking during pregnancy, *fetal alcohol effect*. These children typically do not show all the symptoms of FAS but may have specific developmental problems later in life, such as learning disabilities or behavioral problems.

Alcohol is certainly not the only teratogen. Unlike alcohol, other psychoactive drugs, like cocaine and heroin, can cause newborns to share their parent's physical drug addiction. The serious withdrawal symptoms associated with these addictions can kill an infant. Some polluting chemicals in the environment can cause abnormal infant development. Certain bacteria and viruses are not screened by the placenta and may be contracted by the fetus.

MOTOR/SENSORY DEVELOPMENT

Reflexes

In the past, some philosophers and early psychologists believed that humans are born as blank slates—helpless and without any skills or reflexes. In fact, they believed this lack of reflexes or instinctual behavior was one of the factors that separated humans from animals. Researchers now know that humans are far from blank slates when we are born. All babies exhibit a set of specific *reflexes*, which are specific, inborn, automatic responses to certain specific stimuli. Some important reflexes humans are born with are listed below:

Rooting reflex	When touched on the cheek, a baby will turn his or her head to the side where he or she felt the touch and seek to put the object into his or her mouth.
Sucking reflex	When an object is placed into the baby's mouth, the infant will suck on it. (The combination of the rooting and sucking reflexes obviously helps babies eat.)
Grasping reflex	If an object is placed into a baby's palm or foot pad, the baby will try to grasp the object with his or her fingers or toes.
Moro reflex	When startled, a baby will fling his or her limbs out and

HINT

These are the reflexes we are *born* with and lose later in life. Humans have other reflexes (for example, eye blinking in response to a puff of air to the eye) that remain with us throughout our life. Humans lose the reflexes listed in this table as our brain grows and develops.

then quickly retract them, making himself or herself as small as possible.

Babinski reflex

When a baby's foot is stroked, he or she will spread the toes.

The Newborn's Senses

In addition to inborn reflexes, humans are also born equipped with our sensory apparatus. Some of the ways that babies sense the world are identical to the way you do, but some differ greatly. Researchers know that babies can hear even before birth. Minutes after birth, a baby will try to turn his or her head toward the mother's voice. Babies have the same basic preferences in taste and smell as we do. Babies love the taste of sugar and respond to a higher concentration of sugar in foods. Preferences in tastes and smells will change as we develop (we might learn to like the smell of fish or hate it), but babies are born with the basic preferences in place. Babies' vision is different than ours in important ways, however. Sight becomes our dominant sense as we age, but when we are born, hearing is the dominant sense due to babies' poor vision. Babies are born almost legally blind. They can see well 8–12 inches in front of them, but everything beyond that range is a blur. Their vision improves quickly as they age, improving to normal vision (barring any vision problems) by the time they are about 12 months old. In addition, babies are born with certain visual preferences. Babies like to look at faces and facelike objects (symmetrical objects and shapes organized in an imitation of a face) more than any other objects. This preference and their ability to focus about 12 inches in front of them make babies well equipped to see their mother as soon as they are born.

Motor Development

Barring developmental difficulties, all humans develop the same basic motor skills in the same sequence, although the age we develop them may differ from person to person. Our motor control develops as neurons in our brain connect with one another and become *myelinated* (see Chapter 3 for a review of neural anatomy). Research shows that most babies can roll over when they are about 5-1/2 months old, stand at about 8–9 months, and walk by themselves after about 15 months. These ages are very approximate and apply to babies all over the world. While environment and parental encouragement may have some effect on motor skills, the effect is slight.

PARENTING

Attachment Theory

The influences discussed so far in this chapter have mostly been genetic or prenatal in nature. After birth, uncountable environmental influences begin to affect how we develop. Certainly one of the most important aspects of babies' early environment is the relationship between parent(s) and child. Some researchers focus on how *attachment*, or the reciprocal relationship between caregiver and child, affects development. Two significant researchers in this area demonstrate some of the basic findings regarding attachment.

HARRY HARLOW

In the 1950s, researcher Harry Harlow raised baby monkeys with two artificial wire frame figures made to resemble mother monkeys. One mother figure was fitted with a bottle the infant could eat from, and the other was wrapped in a soft material. Harlow found that infant monkeys when frightened preferred the soft mother figure even over the figure that they fed from. When the infants were surprised or stressed, they fled to the soft mother for comfort and protection. Harlow's studies demonstrated the importance of physical comfort in the formation of attachment with parents. As Harlow's infant monkeys developed, he noticed that the monkeys raised by the wire frame mothers became more stressed and frightened than monkeys raised with real mothers when put into new situations. The deprivation of an attachment with a real mother had long-term effects on these monkeys' behavior.

MARY AINSWORTH

Mary Ainsworth researched the idea of attachment by placing human infants into novel situations. Ainsworth observed infants' reactions when placed into a *strange situation*: their parents left them alone for a short period of time and then returned. She divided the reactions into three broad categories:

1. Infants with *secure attachments* (about 66 percent of the participants) confidently explore the novel environment while the parents are present, are distressed when they leave, and come to the parents when they return.
2. Infants with *avoidant attachments* (about 21 percent of the participants) may resist being held by the parents and will explore the novel environment. They do not go to the parents for comfort when they return after an absence.
3. Infants with *anxious/ambivalent attachments* (also called *resistant attachments*, about 12 percent of the participants) have ambivalent reactions to the parents. They may show extreme stress when the parents leave but resist being comforted by them when they return.

Parenting Styles

So far, the developmental research and categories described focus on the behaviors of children. Parents' interaction with their children definitely has an influence on the way we develop and can be categorized in similar ways.

Authoritarian parents set strict standards for their children's behavior and apply punishments for violations of these rules. Obedient attitudes are valued more than discussions about the rationale behind the standards. Punishment for undesired behavior is more often used than reinforcement for desired behavior. If your parents were authoritarian and you came in 15 minutes after your curfew, you might be grounded from going out again the rest of the month without explanation or discussion.

Permissive parents do not set clear guidelines for their children. The rules that do exist in the family are constantly changed or are not enforced consistently. Family

members may perceive that they can get away with anything at home. If your parents were permissive and you came in 15 minutes after your curfew, your parents' reaction would be unpredictable. They may not notice, not seem to mind, or threaten you with a punishment that they never follow through on.

Authoritative parents have set, consistent standards for their children's behavior, but the standards are reasonable and explained. The rationale for family rules are discussed with children old enough to understand them. Authoritative parents encourage their children's independence but not past the point of violating rules.

They praise as often as they punish. In general, explanations are encouraged in an authoritative house, and the rules are reasonable and consistent. If your parents were authoritative and you came in 15 minutes after your curfew, you would already know the consequences of your action. You would know what the family rule was for breaking curfew, why the rule existed, what the consequences were, and your parents would make sure you suffered the consequences!

HINT

Some students confuse the terms *authoritative* and *authoritarian*. Remember that the authoritarian style involves very strict rules without much explanation, while authoritative parents set strict rules but make sure they are reasonable and explained.

Studies show that the authoritative style produces the most desirable and beneficial home environment. Children from authoritative homes are more socially capable and perform better academically, on average. The children of permissive parents are more likely to have emotional control problems and are more dependent. Authoritarian parents' children are more likely to distrust others and be withdrawn from peers. These studies indicate another way in which our upbringing influences our development. Researchers agree that parenting style is certainly not the whole or final answer to why we develop the way we do (and the research is correlational, not causal). However, it is a key influence along with genetic makeup, peer relationships, and other environmental influences on thought and behavior.

STAGE THEORIES

Besides nature versus nurture, one of the other major controversies in developmental psychology is the argument about *continuity* versus *discontinuity*. Do we develop continually, at a steady rate from birth to death, or is our development discontinuous, happening in fits and starts with some periods of rapid development and some of relatively little change? Biologically, we know our development is somewhat discontinuous. We grow more as an infant and during our adolescent growth spurt than at other times in our lives. However, what about psychologically?

Do we develop in our thought and behavior continuously or discontinuously? Several theorists concluded that we pass through certain stages in the development of certain psychological traits, and their theories attempt to explain these stages. Stage theories are, by definition, discontinuous theories of development. You may notice that the first two stage theorists, Freud and Erikson, base their stages on psychoanalytic theories and are therefore less scien-

HINT

Each stage theory describes how different aspects of thought and behavior develop. One stage theory does not necessarily contradict another even though they may say different things about a child of the same age. Be careful when you are contrasting stage theories. Comparing one against another may be like comparing apples with oranges.

tifically verifiable than the other stage theories. They are included because their stages are still often used to describe how we develop in specific areas and are of historic importance.

Sigmund Freud

Historically, Freud was the first to theorize that we pass through different stages in childhood. Freud said we develop through four *psychosexual* stages. Sexual to Freud meant not the act of intercourse but how we get sensual pleasure from the world. If we fail to resolve a significant conflict in our lives during one of these stages, Freud said we could become *fixated* in the stage, meaning we might remain preoccupied with the behaviors associated with that stage. (See the chapter “Personality” for a further review of this theory.) Freud described five psychosexual stages:

- | | |
|---------------|--|
| Oral stage | In this stage, infants seek pleasure through their mouths. You might notice that babies tend to put everything they can grab into their mouths if they can get away with it. Freud thought that people fixated at this stage might overeat, smoke, and in general have a childlike dependence on things and people. |
| Anal stage | This stage develops during toilet training. If conflict around toilet training arises, a person might fixate in the stage and be overly controlling (retentive) or out of control (expulsive). |
| Phallic stage | During this stage, babies realize their gender and this causes conflict in the family. Freud described the process boys go through in this stage as the <i>Oedipus complex</i> , when boys resent their father’s relationship with their mother. The process for girls is called the <i>Electra complex</i> . Conflict in this stage could cause later problems in relationships. |
| Genital stage | After the phallic stage, Freud thought children go through a short <i>latency stage</i> , or period of calm, and between the ages of six and puberty of low psychosexual anxiety that most psychologists don’t regard as a separate stage. They then enter the genital stage where they remain for the rest of their lives. The focus of sexual pleasure is the genitals, and fixation in this stage is what Freud considers normal. |

Erik Erikson

Erik Erikson was a *neo-Freudian*, a theorist who believed in the basics of Freud’s theory but adapted it to fit his own observations. Through his own life experiences of identity formation and his study in psychoanalysis with Anna Freud (Sigmund Freud’s daughter), Erikson developed his own stage theory of development.

He thought that our personality was profoundly influenced by our experiences with others, so he created the *psychosocial stage theory*. It consists of eight stages, each stage centering on a specific social conflict.

HINT

If Freud’s psychosexual stages sound out-of-date to you, you are not alone. Many developmental psychologists would say that Freud’s stage theory might have only historical importance and it is not likely to be used in scientific research.

Trust versus mistrust

Babies' first social experience of the world centers on need fulfillment. Babies learn whether or not they can trust that the world provides for their needs. Erikson thought that babies need to learn that they can trust their caregivers and that their requests (crying, at first) are effective. This sense of trust or mistrust will carry throughout the rest of our lives, according to Erikson.

Autonomy versus
shame and doubt

In this next stage, toddlers begin to exert their will over their own bodies for the first time. Autonomy is our control over our own body, and Erikson thought that potty training was an early effort at gaining this control. Toddlers should also learn to control temper tantrums during this stage. Childrens' most popular word during this stage might be "No!," demonstrating their attempt to control themselves and others. If we learn how to control ourselves and our environment in reasonable ways, we develop a healthy will. Erikson believes we can then control our own body and emotional reactions during the rest of the social challenges we will face.

Initiative versus guilt

In this stage, childrens' favorite word changes from "No!" to "Why?" If we trust those around us and feel in control of our bodies, we feel a natural curiosity about our surroundings. Children in this stage want to understand the world. We take the initiative in problem solving and ask many (many!) questions. If this initiative is encouraged, we will feel comfortable about expressing our curiosity through the rest of the stages. If those around us scold us for our curiosity, we might learn to feel guilty about asking questions and avoid doing so in the future.

Industry versus
inferiority

This stage is the beginning of our formal education. Preschool and kindergarten were mostly about play and entertainment. In the first grade, for the first time we are asked to produce work that is evaluated. We expect to perform as well as our peers at games and school work. If we feel that we are as good at kick ball (or math problems, or singing, and so on) as the child in the next desk, we feel competent. If we realize that we are behind or cannot do as well as our peers, having an *inferiority complex*, we may feel anxious about our performance in that area throughout the rest of the stages.

Identity versus role confusion	In adolescence, Erikson felt our main social task is to discover what social identity we are most comfortable with. He thought that a person might naturally try out different roles before he or she found the one that best fit his or her internal sense of self. Adolescents try to fit into groups in order to feel confident in their identities. An adolescent should figure out a stable sense of self before moving on to the next stage or risk having an <i>identity crisis</i> later in life.
Intimacy versus isolation	Young adults who established stable identities then must figure out how to balance their ties and efforts between work (including careers, school, or self-improvement) and relationships with other people. How much time should we spend on ourselves and how much time with our families? What is the difference between a platonic and a romantic relationship? Again, the patterns established in this stage will influence the effort spent on self and others in the future.
Generativity versus stagnation	Erikson felt that by the time we reach this age, we are starting to look critically at our life path. We want to make sure that we are creating the type of life that we want for ourselves and family. We might try to seize control of our lives at this point to ensure that things go as we plan. In this stage, we try to ensure that our lives are going the way we want them to go. If they are not, we may try to change our identities or control those around us to change our lives.
Integrity versus despair	Toward the end of life, we look back at our accomplishments and decide if we are satisfied with them or not. Erikson thought that if we can see that our lives were meaningful, we can “step outside” the stress and pressures of society and offer wisdom and insight. If, however, we feel serious regret over how we lived our lives, we may fall into despair over lost opportunities.

COGNITIVE DEVELOPMENT

Parents often focus intently on the intellectual development of their children. Intelligence is a notoriously difficult trait to assess (see Chapter 11 for more information). However, developmental researchers try to describe how children think about and evaluate the world. Jean Piaget’s cognitive-development theory is the most famous theory of this type. However, some researchers now criticize parts of his theory and offer alternative explanations for the same behaviors.

Jean Piaget

Jean Piaget was working for Alfred Binet, creator of the first intelligence test, when he started to notice interesting behaviors in the children he was interviewing. Piaget noted that children of roughly the same age almost always gave similar answers to some of the questions on the intelligence test, even if the answers were wrong. He hypothesized that this was because they were all thinking in similar ways and these ways of thinking differed from the ways adults think. This hypothesis led to Piaget's theory of cognitive development. Piaget described how children viewed the world through schemata, cognitive rules we use to interpret the world. Normally, we incorporate our experiences into these existing schemata in a process called *assimilation*. Sometimes, information does not fit into or violates our schemata, so we must accommodate and change our schemata. For example, a four-year-old boy named Daniel gets a pair of cowboy boots from his parents for his birthday. He wears his cowboy boots constantly and does not see anyone else wearing them. Daniel develops a schema for cowboy boots: only little boys wear boots. Most of his experiences do not violate this schema. He sees other little boys wearing boots and assimilates this information into his schema. Then Daniel's family takes a trip to Arizona. When he gets off the plane, he sees a huge (huge to a four-year-old, at least) man wearing cowboy boots. Daniel points at the man and starts to laugh hysterically. Why is Daniel causing this scene? His schema has been violated. To Daniel, the large man is dressing like a little boy! After he stops laughing, Daniel will have to accommodate this new information and change his schema to include the fact that adults can wear cowboy boots, too. By the way, this process may repeat itself the first time Daniel sees a woman in boots!

Piaget thinks humans go through this process of schema creation, assimilation, and accommodation as we develop cognitively. His cognitive development theory describes how our thinking progresses through four stages:

Sensorimotor stage (birth to approximately two years old)

Babies start experiencing and exploring the world strictly through their senses. At the beginning of life, Piaget noted that behavior is governed by the reflexes we are born with. Soon, we start to develop our first cognitive schemata that explain the world we experience through our senses. One of the major challenges of this stage is to develop object permanence. Babies at first do not realize that objects continue to exist even when they are out of sensory range. When babies start to look for or somehow acknowledge that objects do exist when they cannot see them, they have object permanence.

Preoperational stage (two to approximately seven years old)

Acquiring the scheme of object permanence prepares a child to start to use symbols to represent real-world objects. This ability is the beginning of language, the most important cognitive development of this stage. We start speaking our first words and gradually learn to represent the world more completely through language. While we can refer to the world through symbols during the preoperational stage, we are still limited in the ways we can think about the relationships between objects and the

characteristics of objects. Children in this stage are also egocentric in their thinking, since they cannot look at the world from anyone's perspective but their own.

Concrete operations (eight to approximately 12 years old)

During the concrete-operations stage, children learn to think more logically about complex relationships between different characteristics of objects. Piaget categorized children in the concrete-operations stage when they demonstrated knowledge of concepts of conservation, the realization that properties of objects remain the same even when their shapes change. These concepts demonstrate how the different aspects of objects are conserved even when their arrangement changes. See Table 9.1 for examples of the concepts.

Formal operations (12 through adulthood)

This final stage of Piaget describes adult reasoning. Piaget theorized that not all of us reach formal operations in all areas of thought. Formal operational reasoning is abstract reasoning. We can manipulate objects and contrast ideas in our mind without physically seeing them or having real-world correlates. One example of abstract reasoning is hypothesis testing. A person in Piaget's formal-operations stage can reason from a hypothesis. To test for formal-operational thought, you might ask a child, "How would you be different if you were born on a planet that had no light?" A child in the preoperational or concrete-operational stage would have trouble answering the question because no real-world model exists to fall back on. Someone in the formal-operations stage would be able to extrapolate from this hypothesis and reason that the beings on that planet might not have eyes, would

TABLE 9.1

Concepts of Conservation

Concept	Description	How to Test
Volume	The volume of a material is conserved even if the material's container or shape changes.	Pour water into differently shaped glasses and ask if the volume of the water increased, decreased, or stayed the same.
Area	Area is conserved even if objects within that area are rearranged.	Ask a child to examine two different squares of equal area, and rearrange objects within the area in order to determine if children realize the area was conserved.
Number	The number of objects stays the same when the objects are rearranged.	Take a few objects, let the child count them, rearrange the objects, and ask the child how many there are now. If the child counts them again, he or she does not understand conservation of number.

have no words for color, and might exclusively rely on other senses. Also in the formal-operations stage, we gain the ability to think about the way we think; this is called metacognition. We can trace our thought processes and evaluate the effectiveness of how we solved a problem.

Criticisms of Piaget: Information-Processing Model

Many developmental psychologists still value Piaget's insights about the order in which our cognitive skills develop, but most agree that he underestimated children. Many children go through the stages faster and enter them earlier than Piaget predicted. Piaget's error may be due to the way he tested children. Some psychologists wonder if some of his tests relied too heavily on language use, thus biasing the results in favor of older children with more language skills. Other theorists wonder if development does not occur more continuously than Piaget described. Perhaps our cognitive skills develop more continuously and not in discrete stages.

The *information-processing model* is a more continuous alternative to Piaget's stage theory. Information processing points out that our abilities to memorize, interpret, and perceive gradually develop as we age rather than developing in distinct stages. For example, research shows that our attention span gradually increases as we get older. This one continuous change could explain some apparent cognitive differences Piaget attributed to different cognitive stages. Maybe children's inability to understand conservation of number has more to do with their ability to focus for long periods of time than any developing reasoning ability. Developmental researchers agree that no one has the perfect model to describe cognitive development. Future research will refine our current ideas and create models that more closely describe how our thinking changes as we mature.

MORAL DEVELOPMENT

Lawrence Kohlberg

Lawrence Kohlberg's stage theory studied a completely different aspect of human development: morality. Kohlberg wanted to describe how our ability to reason about ethical situations changed over our lives. In order to do this, he asked a subject group of children to think about specific moral situations. One situation Kohlberg used is the Heinz dilemma, which describes a man named Heinz making a moral choice about whether to steal a drug he cannot afford in order to save his wife's life.

Kohlberg collected all the participants' responses and categorized them into three levels:

Preconventional

The youngest children in Kohlberg's sample focus on making the decision most likely to avoid punishment. Their moral reasoning is limited to how the choice affects themselves. Children in the preconventional level might say that Heinz should not steal the drug because he might get caught and put into prison.

Conventional

During the next level of moral reasoning, children are able to move past personal gain or loss and look at the moral choice through others' eyes. Children in this stage make a moral choice based on how others will view them. Children learn conventional standards of what is right and wrong from their parents, peers, media, and so on. They may try to follow these standards so that other people will see them as good. Children in the conventional level might say that Heinz should steal the drug because then he could save his wife and people would think of him as a hero.

Postconventional

The last level Kohlberg describes is what we usually mean by moral reasoning. A person evaluating a moral choice using postconventional reasoning examines the rights and values involved in the choice. Kohlberg described how self-defined ethical principles, such as a personal conviction to uphold justice, might be involved in the reasoning in this stage. Those doing the reasoning might weigh the merit of altruism or limiting certain rights for the good of the group. For the first time, the morality of societal rules are examined rather than blindly accepted. Persons in the postconventional stage might say that Heinz should steal the drug because his wife's right to life outweighs the store owner's right to personal property.

Criticisms of Kohlberg

Some developmental psychologists challenge Kohlberg's conclusions. One researcher, Carol Gilligan, pointed out that Kohlberg developed the model based on the responses of boys. When girls were later tested, she continued, Kohlberg placed their responses into lower categories. Gilligan theorized that Kohlberg's assumption that boys and girls (and men and women) come to moral conclusions in the same way is incorrect. Perhaps some gender-based developmental difference occurs in how we develop our morals and ethics. According to Gilligan's research, boys have a more absolute view of what is moral while girls pay more attention to the situational factors. Boys might have moral rules that apply in every context, while girls might want to know more about the situation and relationships of the people involved before making a moral decision. Gilligan's insights about Kohlberg's theory demonstrate the importance of studying possible gender differences and how they might change as we develop. However, recent research does not support Gilligan's theory of gender differences in moral development.

GENDER AND DEVELOPMENT

Another area of developmental research focuses on gender issues. Specifically, researchers are interested in how we develop our ideas about what it means to be male and female and in developmental differences between genders.

Different cultures encourage different gender roles, which are behaviors that a culture associates with a gender. Gender roles vary widely between cultures. A behavior considered feminine in one culture, such as holding hands with a friend, might

Freud's Psychosexual Stages	Erikson's Psychosocial Stages	Piaget's Cognitive Development Stages	Kohlberg's Moral Development Stages
Oral stage (approximately birth to 1.5 years old)	Trust versus mistrust (approximately birth to 1 year old)	Sensorimotor (approximately birth to 2 years old)	Preconventional (approximately birth to 9 years old)
Anal stage (approximately 1.5 to 3 years old)	Autonomy versus shame/ doubt (approximately 1 to 3 years old)	Preoperational (approximately 2 to 7 years old)	
Phallic stage (approximately 3 to 6 years old)	Initiative versus guilt (approximately 3 to 6 years old)		
Latency stage (approximately 6 years old to puberty)	Industry versus inferiority (approximately 6 years old to early adolescents)	Concrete operations (approximately 7 to 12 years old)	Conventional (approximately 10 years old through early adolescence)
Genital stage (approximately puberty and older)	Identity versus role confusion (approximately late adolescents into the 20s) Intimacy versus isolation (approximately the 20s through early 40s) Generativity versus despair (approximately 40s through 60s) Integrity versus despair (approximately 60s and older)	Formal operations (approximately 12 through adulthood)	Postconventional (approximately late adolescence through adulthood)

be considered masculine or not gender specific in another. Different psychological perspectives provide different theories that try to explain how gender roles develop.

Biopsychological (neuropsychological) theory

Biopsychological psychologists concentrate on the nature element in the nature/nurture combination that produces our gender role. Children learn (and are often very curious about!) the obvious biological differences between the sexes. However, biopsychologists look for more subtle biological gender differences. For the purposes of this book, going into extensive detail about all the differences between male and female brains is unnecessary. For the AP test, you should know that studies demonstrate that these differences do exist. One of the most significant findings is that, on average, women have larger corpus callosums (see Fig. 3.3, Chapter 3) than men. Theoretically, this difference may affect how the right and left hemispheres communicate and coordinate tasks.

Psychodynamic theory

As noted in the chapter about psychological perspectives, some of Freud's psychodynamic perspectives are considered to have more historical value than current value. However, his views about gender role development are widely known (and sometimes referred to in the media) and so are worth mentioning. Freud viewed gender development as a competition. Young boys, unconsciously, compete with their fathers for their mothers' attention. Girls, similarly, compete with mothers for their fathers' love. Proper gender development occurs when a child realizes that she or he cannot hope to beat their same-sex parent at this competition and identifies with that person instead, girls learning to be a woman like mom or boys being a man like dad. To verify this idea empirically is difficult, if not impossible.

Social-cognitive theory

Social and cognitive psychologists concentrate on the effects society and our own thoughts about gender have on role development. Social psychologists look at how we react to boys and girls differently. For example, boys are more often encouraged in rough physical play than are girls. Cognitive psychologists focus on the internal interpretations we make about the gender message we get from our environment. Gender-schema theory explains that we internalize messages about gender into cognitive rules about how each gender should behave. If a girl sees that her little brother is encouraged to wrestle with their father, she creates a rule governing how boys and girls should play.

Practice Questions

Directions: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case.

- Some researchers consider developmental psychology an applied research topic because
 - it is more easily applied to people's lives than research such as behaviorism.
 - researchers apply findings and theories from other areas of psychology to the specific topic of human development.
 - it is more commonly studied by a graduate student rather than an undergraduate because of the applications for other research.
 - doing original research in this area is difficult, so most of the research is about application.
 - pure research is difficult to gain support for, especially when a researcher needs to recruit children as participants.