

Infancy and Childhood

PSYCHOLOGY JOURNAL

Observe a group of 2-year-old children. Record in your journal the two-word sentences you hear. ■



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Chapter Overview

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Physical, Perceptual, and Language Development

Reader's Guide

■ Main Idea

Infants are born equipped to experience the world. As infants grow physically, they also develop cognitive skills, perceptions, and language.

■ Vocabulary

- developmental psychology
- grasping reflex
- rooting reflex
- maturation
- telegraphic speech

■ Objectives

- Describe the physical and perceptual development of newborns and children.
- Discuss the development of language.

EXPLORING PSYCHOLOGY

What Do Babies See?

Propped against my knees in the delivery room, my son, minutes old, peered at me with wide, unblinking eyes. He looked so intent. So serious. So thoughtful. What could earth's freshest arrival possibly be thinking about? Maybe he was wondering who all the giants looming over him might be, especially the pair with the goofy grins who kept counting his fingers and toes over and over. Maybe his head still ached from the incredibly narrow trip out of my womb. Maybe he was asking himself, "Hey, who turned on the lights?" It's hard to know how the world appears to a new baby. But in recent years, researchers have deduced plenty about what infants sense, remember, prefer, and need. And such knowledge is more than academic for new parents.

—from *Parent* magazine, Paula Spencer, 1999

Do you remember anything from when you were a baby? Less than 15 years ago, you were probably only two feet tall and just taking your first step. Just a year or two after that, you spent your days intently playing. Most of those events from your life are long forgotten, but you changed faster and learned more in early childhood than you ever will again.

In this chapter you will learn about **developmental psychology**—the specialized study of how an individual's physical, social, emotional, moral, and intellectual development occur in sequential interrelated stages throughout the life cycle.

developmental psychology: the study of changes that occur as an individual matures

✓ Reading Check
What is the argument of nature versus nurture?

NATURE AND NURTURE

Developmental psychologists study the following main issues: (1) continuity versus stages of development, (2) stability versus change, and (3) nature versus nurture. On the question of nature versus nurture, psychologists ask: How much of development is the result of inheritance (heredity), and how much is the result of what we have learned? Some psychologists believe that most of our behaviors are the result of genetics or inheritance. Others believe that most of our behaviors are the result of experience and learning. Separating biological and environmental causes of behavior is very complicated. Usually behavior develops as a result of the interaction of both heredity and environment.

grasping reflex: an infant's clinging response to a touch on the palm of his or her hand

rooting reflex: an infant's response in turning toward the source of touching that occurs anywhere around his or her mouth

More About...

Reflexes

The *rooting* and *sucking* reflexes, present in all human infants, gradually decline in strength. The *grasping* reflex disappears during the first six months in those infants where it is present at birth. The Moro, or *startle*, reflex is quite unusual. An infant lying on its back when startled by a loud noise out of sight above his or her head will show a very complex response. The arms will spread out at right angles to the body and grasp upwards, and the legs will spread outward.

Now consider this situation. What would happen if someone ran a thumbnail right up the center bottom of your foot? Your toes would curl, and your foot would withdraw. Before her first birthday, an infant will do exactly the opposite—the toes flare outward, and the foot presses against the stimulus. This is called the *Babinski* reflex. Pediatricians use the shift in the Babinski from infantlike to adultlike form around the first birthday as a sign of normal neurological development.

NEWBORNS

Development begins long before an infant is born. Expectant mothers can feel strong movement and kicking—even hiccuping—inside them during the later stages of pregnancy. It is common for a fetus (an unborn child) to suck its thumb, even though it has never suckled at its mother's breast or had a bottle.

Capacities

Newborns have the ability at birth to see, hear, smell, and respond to the environment. This allows them to adapt to the new world around them. Psychologists have found that birth puts staggering new demands on a baby's capacity to adapt and survive. He goes from an environment in which he is totally protected from the world to one in which he is assaulted by lights, sounds, touches, and extremes of temperature. The newborn is capable of certain inherited, automatic, coordinated movement patterns, called reflexes, that can be triggered by the right stimulus (see **Figure 3.1**). Many, but not all, infants are born with many such reflexes. The **grasping reflex**, for example, is a response to a touch on the palm of the hand. Infants can grasp an object, such as a finger, so strongly that they can be lifted into the air.

Also vital is the **rooting reflex**. If an alert newborn is touched anywhere around the mouth, he will move his head and mouth toward the source of the touch. In this way the touch of his mother's breast on his cheek guides the infant's mouth toward her nipple. The sucking that follows contact with the nipple is one of the infant's most complex reflexes. The infant is able to suck, breathe air, and swallow milk twice a second without getting confused.

Figure 3.1 Newborn Reflexes



Reflexes are important in determining the health of an infant. In the grasping reflex, newborns close their fingers tightly around objects placed in their hands. *What seems to be the purpose of these reflexes?*

How do we measure the capabilities of newborn infants who cannot speak or understand the questions of curious psychologists? One reasonable way to answer these questions is to take advantage of the things infants *can* do. What they can do is suck, turn their heads, look at things, cry, smile, and show signs of surprise or fright. The vigor of an infant's sucking, the patterns of eye movements, and expressions of pleasure and displeasure are all closely tied to how the infant is being stimulated. By measuring these behaviors while stimulating the infant in different ways, we can infer how the infant perceives the world.

PHYSICAL DEVELOPMENT

Infants on average weigh 7.3 pounds at birth. Some infants can weigh as much as 20 or 25 pounds by the end of the first year. At birth, 95 percent of infants are between 5.5 and 10 pounds and are 18 to 22 inches in length. In the space of two years, the grasping, rooting, searching infant will develop into a child who can walk, talk, and feed herself or himself. This transformation is the result of both maturation and learning.

Did You Know?

SIDS Infants have been known to quietly and mysteriously die in their sleep. Physicians call this "sudden infant death syndrome," or SIDS. SIDS takes more lives in the first year than any other cause of infant death. We do not know why SIDS happens. One theory suggests that it results from a failure in the infant's central nervous system in learning how to turn a reflex into a voluntary action. That is, the infant fails to learn to keep passages open for breathing. There is no known way to predict or prevent SIDS. Recent studies report a decreased incidence of SIDS when the infant is positioned on the sides or back to sleep instead of on the stomach.

Maturation

To some extent an infant is like a plant that shoots up and unfolds according to a built-in plan. She will begin to lift her head at about 3 months, smile at 4 months, and grasp objects at 5 to 6 months. Crawling appears at 8 to 10 months. By this time the infant may be able to pull herself into a standing position, although she will fall if she lets go. She will begin to walk 3 or 4 months later, tentatively at first, but gradually acquiring a sense of balance.

maturation: the internally programmed growth of a child

Psychologists call internally programmed growth **maturation**. Maturation is as important as learning or experience, especially in the first years. (*Learning* is a relatively permanent change in behavior that occurs as a result of experience.) Unless a child is persistently underfed, severely restricted in her movements, or deprived of human contact and things to look at, she will develop more or less according to this schedule. Purely as a matter of efficiency, it is worth a parent's time to wait until infants reach *maturation readiness* before pushing them into mastering new skills. No amount of coaching will push a child to walk or speak before she is physiologically ready.

The process of maturation becomes obvious when you think about walking. An infant lacks the physical control walking requires. By the end

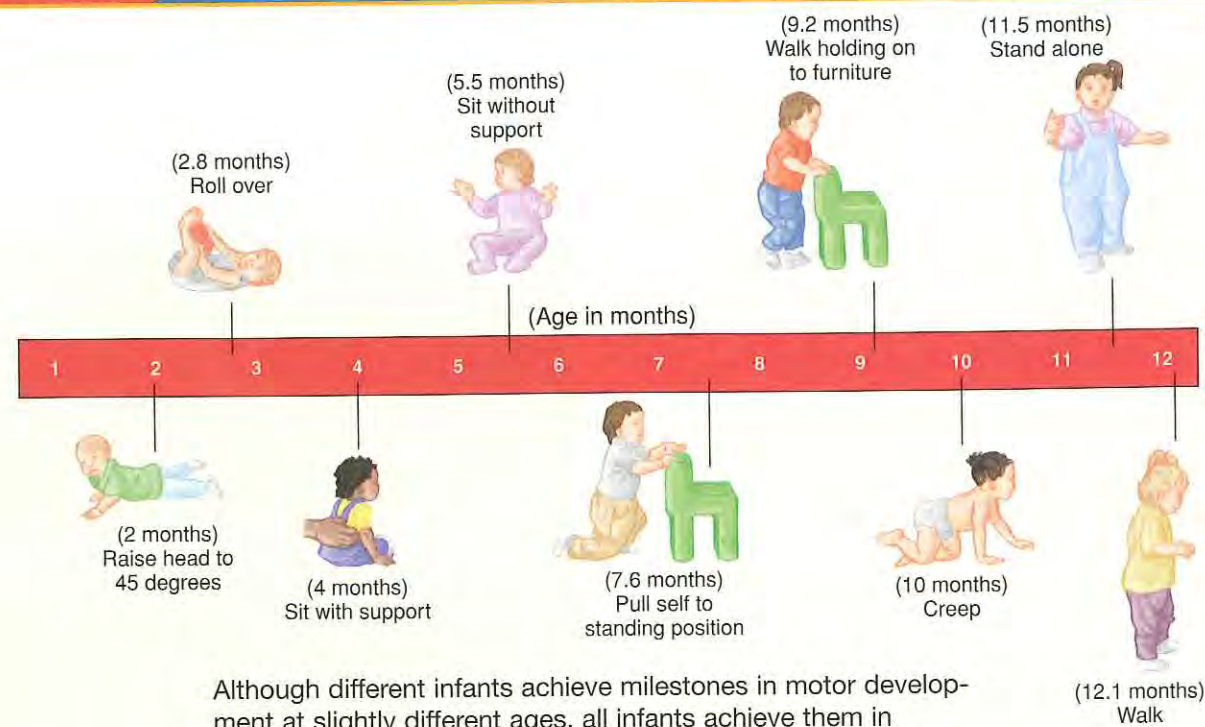
of the first year, however, the nerves connected to the child's muscles have grown. He or she is ready to walk.

By recording the ages at which thousands of infants first began to sit upright, to crawl, and to try a few steps, psychologists have been able to develop an approximate timetable for maturation (see Figure 3.2). This schedule helps doctors and other professionals spot problems and abnormalities. If a child has not begun to talk by the age of 2½, a doctor will recommend tests to determine if something is wrong.

One of the facts to emerge from this effort, however, is that the maturational plan inside each child is unique. On the average, infants start walking at 12 to 13 months. Some, though, are ready at 9 months, and others delay walking until 18 months.

Each infant also has his or her own temperament. Some infants are extremely active from birth, and some are quiet. Some are cuddly and some stiff. Some cry a great deal while others hardly ever whimper. Although no two infants are exactly alike and no two mature according to the same timetable, most infants progress through the same sequential steps. Identifying similarities and differences in growth patterns is the challenge for developmental psychologists.

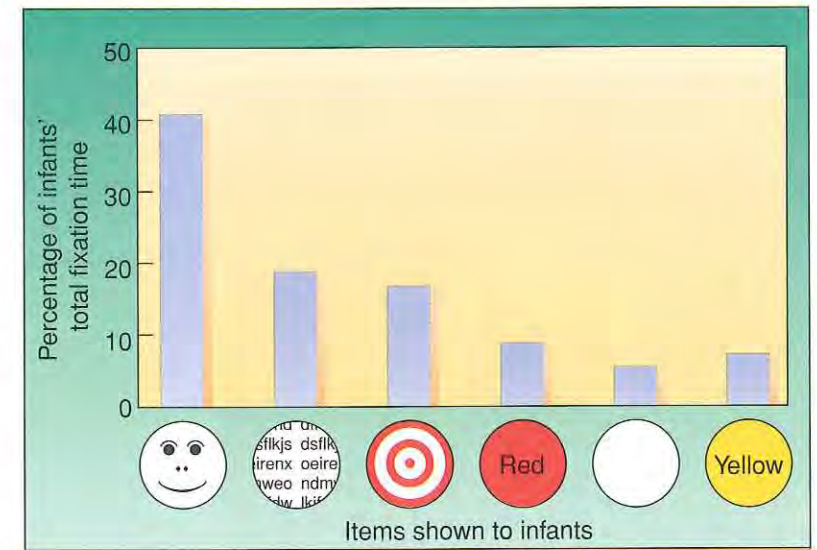
Figure 3.2 Physical and Motor Development



Although different infants achieve milestones in motor development at slightly different ages, all infants achieve them in essentially the same order. This chart shows the average ages when milestones are usually achieved. **At what age would you expect an infant to start standing? Start walking?**

Figure 3.3 The Visual Preferences of Infants

Three- or four-month-old infants show a strong preference for faces and patterns, suggesting that infants are born with and develop visual preferences. **How do researchers measure the capabilities of infants?**



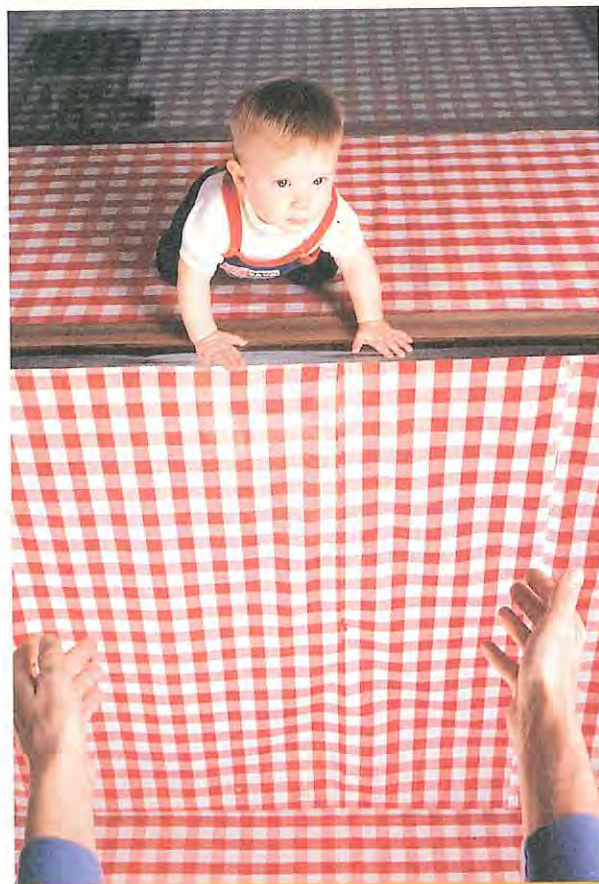
PERCEPTUAL DEVELOPMENT

Besides grasping and sucking, newborns look at their bodies and at their surroundings. Newborns have mature perception skills. Robert Fantz (1961) showed infants different faces and discovered that they prefer looking at human faces and patterned materials the most (see Figure 3.3). They also benefit greatly from being touched by their parents (Eliot, 2000).

Two experimenters (Gibson & Walk, 1960) devised the visual cliff to determine whether infants had depth perception. The visual cliff is a platform, part of which has a checkerboard pattern. The other part consists of a sheet of glass with the checkerboard pattern a few feet below it. It creates the illusion of a clifflike dropoff (see Figure 3.4). Whereas very young infants seemed unafraid, older infants (6 months and older) who were experienced at crawling refused to cross over the cliff. The older infants had explored the world, apparently finding that dropoffs are dangerous. Also, researchers found that there were changes in the heart rates of very young infants even if they would crawl farther, implying that newborns are born with some perceptual capabilities.

Figure 3.4 The Visual Cliff

Infants display the ability to perceive three-dimensional space. Infants' heart rates increased as they approached the perceived dropoff of the visual cliff. *Why do you think researchers measured the infants' heart rates during this experiment?*



THE DEVELOPMENT OF LANGUAGE

Language and thought are closely intertwined. Both abilities involve using symbols. We are able to think and talk about objects that are not present and about ideas that are not necessarily true. A child begins to think, to represent things to himself, before he is able to speak. The acquisition of language, however, propels the child into further intellectual development (Piaget, 1926). We have been able to learn a good deal about the acquisition of language from animals.

Can Animals Use Language?

Psychologists believe that chimpanzees must develop at least as far as 2-year-old humans because, like 2-year-olds, they will look for a toy or a bit of food that has disappeared. They can represent the existence of that toy or bit of food in their minds. Can they be taught to “talk” about it? Allen and Beatrice Gardner raised a baby chimp named Washoe in their home and, since chimps are very good with their hands, taught her to use the American Sign Language for the deaf. At 3½ years of age, Washoe knew at least 87 signs for words like *food*, *dog*, and *toothbrush*. By age 5, Washoe used more than 160 signs.

Several chimpanzees have been taught to converse in other ways. Chimpanzees have been trained on special typewriters connected to computers. One chimpanzee, Panzee, used a special computer keyboard with symbols to communicate with humans (see Figure 3.5).

The chimps use only aspects of the human language. Chimps use words as symbols but do not apply grammatical rules. The ability to arrange symbols in new combinations to produce new meanings is especially well developed in the human brain. The rules for such organization of symbols are called *grammar*. Grammatical rules are what make the sentence “the rhinoceros roared at the boy” mean the same thing as “the boy was roared at by the rhinoceros.” It may be in our ability to use such grammatical rules that we surpass the simpler language of the chimpanzee.

How Children Acquire Language

Some psychologists argue that language is reinforced behavior, while others claim it is inborn. Some people claim there is a critical period, or a window of opportunity, for learning a language. For example, songbirds

learn their song more easily during an early sensitive period of life. Humans may also have a sensitive period early in life in which acquisition of language is easier.

The example of Washoe shows that there are several steps in learning language. First, one must learn to make the signs—whether by hand or by mouth. Also, one must learn the meaning of the signs. Finally, one must learn grammar. Each child takes these steps at his or her own rate (see Figure 3.6). During the first year of life, the average child makes many sounds. Crying lessens, and the child starts making mostly cooing sounds, which develop into a babble that includes every sound humans can make—Chinese vowels, African clicks, German rolled *r*'s, and English *o*'s.

Late in the first year, the strings of babbles begin to sound more like the language that the child hears—French babies babble French sounds, Korean babies babble Korean sounds. Children imitate the speech of their parents and their older brothers and sisters, and are greeted with approval whenever they say something that sounds like a word. In this way children learn to speak what becomes their native language even though they could just as easily learn any other.

The leap to using sounds as symbols occurs sometime early in the second year. The first attempts at saying words are primitive, and sounds are incomplete. “Ball” usually sounds like “ba,” and “cookie” may even sound like “doo-da.” The first real words usually refer to things the infant can see or touch. Often they are labels or commands (“dog!” “cookie!”).

By the time children are 2 years old, they have a vocabulary of 500 to 1,500 words. Near the end of the second year, they begin to express themselves more clearly by joining words into two-word phrases. From about 18 months to 5 years of age, children are adding approximately 5 to 10 words a day to their vocabulary (Carey, 1978).

At age 2, though, a child's grammar is still unlike that of an adult. Children use **telegraphic speech**—for example, “Where my apple?” “Daddy fall down.” They leave out words or use the wrong verb tense but still get the message across. As psychologists have discovered, 2-year-olds already understand certain rules (Brown, 1973). They keep their words in the same order adults do. Indeed, at one point they overdo this, applying grammatical rules too consistently. For example, the usual rule for forming the past tense of English verbs is to add *-ed*. Many verbs, however, are irregular, such as *go/went*. At first children imitate the correct form of the verb: “Daddy went yesterday.” Once children discover the rule for forming past tenses, they replace the correct form with sentences like

telegraphic speech: the kind of verbal utterances in which words are left out, but the meaning is usually clear

 **Reading Check**
At what age do children start to use sounds as symbols?

Figure 3.5 How Animals Talk

Panzee, the chimpanzee, used the computer keyboard to type requests and answer questions. *Which aspects of human language do chimps use?*



Figure 3.6

The Flowering of Language

Between the ages of 2 and 5, the typical child learns an average of 10 words a day—nearly 1 word every hour awake! *When should new parents expect to hear their baby's first word?*

Age	Language Abilities	Example
1 year	Babbling begins and increases; by year's end, infant masters sounds of own language and usually says his or her first word	baba mama
2 years	Infant will progress to saying dozens of words; begins to speak in paired words; to ask a question, child issues a declaration in a rising tone; to negate something, child uses nouns with a negative word	Allgone ball. More ball. Jenny go? No ball.
3 years	Child acquires more grammatical knowledge; says appropriate sentences; uses simple declaratives; produces correct negative sentences; average size of vocabulary is over 5,000 words	I eating. I'm eating. Don't go.
4 years	Child uses more grammatical rules and future tense; asks questions in adult form; average vocabulary is about 9,000 words	Will Jenny go? I can't go. Why is Jenny crying?
5 years	Child uses more complex clauses; joins two or more ideas in one sentence; has problems with noun/verb agreement	I see what you did.

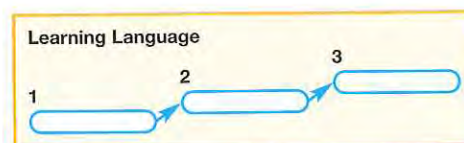
Source: Adapted from *Developmental Psychology* by Howard Gardner, 1963.

"Daddy *goed* yesterday." *Goed* is a positive error because it indicates the child is applying rules. When the correct form appears, the child has shifted from imitation through *overgeneralization* to rule-governed language. By the age of 4 or 5, children have a vocabulary of several thousand words. Their ability to use words will continue to grow with their ability to think about and understand the world around them.

SECTION I

Assessment

- Review the Vocabulary** Describe two reflexes that infants display.
- Visualize the Main Idea** Using a flow-chart similar to the one below, list the steps involved in learning language.
- Recall Information** What questions do developmental psychologists raise concerning nature versus nurture?
- Think Critically** How does human language acquisition differ from the acquisition of human language by an animal?



- Application Activity** Interview a younger sibling, cousin, or friend (5 years old or younger). Use what you have learned about the development of language to describe that child's use of language.

Case Studies

Too Late for Words: The Case of Genie

Period of Study: 1981

Introduction: In 1970 an unusual and unfortunate discovery was made in California. A 13-year-old girl known as "Genie" had spent all 13 years of her life locked in a room isolated from the world. Her parents had kept her harnessed to a potty-chair, which allowed only small movements of her hands and feet. At night Genie was put in a type of straitjacket and forcefully placed in a wire cage. Her parents refused to communicate with her in any way and demanded Genie's siblings avoid any form of communication with her as well.



Genie was discovered by a combined effort of people in social services and the police. When she was discovered, she had no bowel or bladder control, could not chew solid food, had severely damaged posture from years of sitting, and she could not speak or understand language. Nursing Genie back to physical health became the top priority. Then psychologists were to be called upon to evaluate her mental and emotional conditions, as well as to begin teaching her how to communicate.

Hypothesis: The unfortunate case of Genie provided psychologists with some clues in defining whether language can be learned at any point in time or if there is a specific stage of development in which humans need to learn language and communication skills. The function of language has been traced to the left hemisphere of the brain. However, it is undetermined if a window exists in early childhood that allows language to be learned easily.

Method: Placed in a hospital, Genie was described as being "a pitiful, malformed, incontinent, unsocialized, and severely malnourished creature" (Pines, 1981). Genie was given various tests that were designed to measure social maturity and school-level placement. She scored at a level equal to that of a normal 1-year-old child. As time passed, Genie learned to recognize her written name. After 7 months passed, she began to develop spoken use of the phrases "stopit" and "nomore," one-word utterances similar to what toddlers use. One-word use progressed to two-word use; however, Genie's development was slower than that of a toddler with similar language skills.

Results: Genie made limited progress in language development. After 7 years had passed, she had learned as much language skill as a normal child learns in 2 to 3 years. When she was 24 years old, she had the language skills of a 5-year-old. Even though Genie learned much about language, she could not fully understand grammar or the use of pronouns and was unable to control the pitch of her voice. Perhaps Genie's window for learning language had passed; thus her brain could only understand language in a simplified form. However, the physical, emotional, and mental abuse that Genie sustained during her first 13 years of life undoubtedly played key roles in her development as a whole.

Analyzing the Case Study

- Why, when found, was Genie unable to speak coherently or understand language?
- Describe Genie's ability to learn to use language properly. How much progress in language development did Genie make? Explain.
- Critical Thinking** What conclusions can you draw from this case about a window of opportunity to learn language? Are the results conclusive? Explain.

Cognitive and Emotional Development

Reader's Guide

Main Idea

As the thought processes of children develop, they begin to think, communicate and relate with others, and solve problems.

Vocabulary

- schema
- assimilation
- accommodation
- object permanence
- representational thought
- conservation
- egocentric
- imprinting
- critical period

Objectives

- Summarize the cognitive-development theory.
- Discuss how children develop emotionally.

Psychologist Jean Piaget (1896–1980) chronicled the development of thought in his own daughter (“L.”). From the stories Piaget described above, it is obvious that children think differently from adults in many ways. Children form their own hypotheses about how the world works.

COGNITIVE DEVELOPMENT

If you have a younger brother or sister, you may remember times when your parents insisted that you let the little one play with you and your friends. No matter how often you explained hide-and-seek to your 4-year-old brother, he spoiled the game. Why couldn’t he understand that he had to keep quiet or he would be found right away?

EXPLORING PSYCHOLOGY

What Is She Thinking?

At [2 years and 4 months old] L. heard water running in the bathroom upstairs. She was with me in the garden and said to me: “That’s daddy up there.” At [2 years and 5 months old] L. went with her uncle to his car and saw him drive off along the road. She then went back into the house, and went straight to the drawing-room, where he had been earlier, and said: “I want to see if uncle C. has gone.” She went in, looked all round the room and said: “Yes, he’s gone.”

—from *Plays, Dreams and Imitation in Childhood* by Jean Piaget, 1962

This is a question Swiss psychologist Jean Piaget set out to answer more than 60 years ago. According to him, intelligence, or the ability to understand, develops gradually as the child grows. The sharpest, most inquisitive 4-year-old simply cannot understand things a 7-year-old grasps easily. What accounts for the dramatic changes between the ages of 4 and 7?

Piaget spent years observing, questioning, and playing games with babies and young children—including his own. He concluded that young children think in a different way than older children and adults; they use a different kind of logic. A 7-year-old is completely capable of answering the question “Who was born first, you or your mother?” but a 4-year-old is not (Chukovsky, 1963). Intellectual development involves quantitative changes (growth in the *amount* of information) as well as qualitative changes (differences in the *manner* of thinking).

How Knowing Changes

Understanding the world involves the construction of **schemas**, or mental representations of the world. Each of us constructs intellectual schemas, applying them and changing them as needed. We try to understand a new or different object or concept by using one of our preexisting schemas. In the process of **assimilation**, we try to fit the new object into this schema. In the process of **accommodation**, we change our schema to fit the characteristics of the new object.

For example, suppose an infant encounters a new block. The block fits his schema for other blocks he has encountered before. He may fit it into his stacking schema. The infant has stacked blocks before and can easily assimilate the new block into the existing schema. Suppose the infant then encounters an open box. He may at first try to fit the box into his stacking schema but finds that a block just falls inside the box. Now the stacking schema must be altered to accommodate this new object.

Assimilation and accommodation work together to produce intellectual growth. When events do not fit into existing schemas, new and grander schemas have to be created. The child begins to see and understand things in new ways.

Object Permanence An infant’s understanding of things lies totally in the here and now. The sight of a toy, the way it feels in her hands, and the sensation it produces in her mouth are all she knows. She does not imagine it, picture it, think of it, remember it, or even forget it. When an infant’s toy is hidden from her, she acts as if it has ceased to exist. She does not look for it. Instead, she grabs whatever else she can find and

More About...

Imaginary Playmates

There’s nothing new about imaginary playmates—children have always had them. Our understanding about the role of imaginary playmates in the development of children, though, has grown. Dr. Jerome L. and Dr. Dorothy G. Singer studied a group of 3- and 4-year-olds and found a number of differences between children with imaginary playmates and those without. For example:

- Children with imaginary playmates are less aggressive and more cooperative than other children.
- They are rarely bored and have a rich vocabulary, far advanced for their age.
- They watch fewer hours of television than other children.
- They have a greater ability to concentrate.
- More than half of the children studied had imaginary playmates.

Above all, imaginary playmates seem to fill a gap in children’s lives and are especially important to children who are first-born or who have no brothers and sisters. They are an adaptive mechanism that helps children get through the boring times in life.

schema: a conceptual framework a person uses to make sense of the world

assimilation: the process of fitting objects and experiences into one’s schemas

accommodation: the adjustment of one’s schemas to include newly observed events and experiences

 **Reading Check**
How are assimilation and accommodation different?

Student Web Activity

Visit the *Understanding Psychology* Web site at glencoe.com and click on **Chapter 3—Student Web Activities** for an activity about infancy and childhood.

plays with that, or she may simply start crying. At 7 to 12 months, however, this pattern begins to change. When you take the infant's toy and hide it under a blanket while she is watching, she will search for it under the blanket. However, if you change tactics and put her toy behind your back, she will continue to look for it under the blanket—even if she was watching you the whole time.

You cannot fool a 12- to 18-month-old quite so easily. A child this age watches closely and searches for the toy in the last place she saw you put it. Suppose you take the toy, put it under the blanket, conceal it in your hands, and then put it behind your back. A 12-month-old will act surprised when she does not find the toy under the blanket—and keep searching there. An 18- to 24-month-old will guess what you have done and walk behind you to look (see Figure 3.7). She knows the toy must be somewhere (Ginsburg & Opper, 1969).

This is a giant step in intellectual development. The child has progressed from a stage where she apparently believed that her own actions created the world, to a stage where she realizes that people and objects are independent of her actions. Piaget called this concept **object permanence**. This concept might be expressed in this way: "Things continue to exist even though they cannot be seen or touched." It signifies a big step in the second year of life.

object permanence: a child's realization that an object exists even when he or she cannot see or touch it

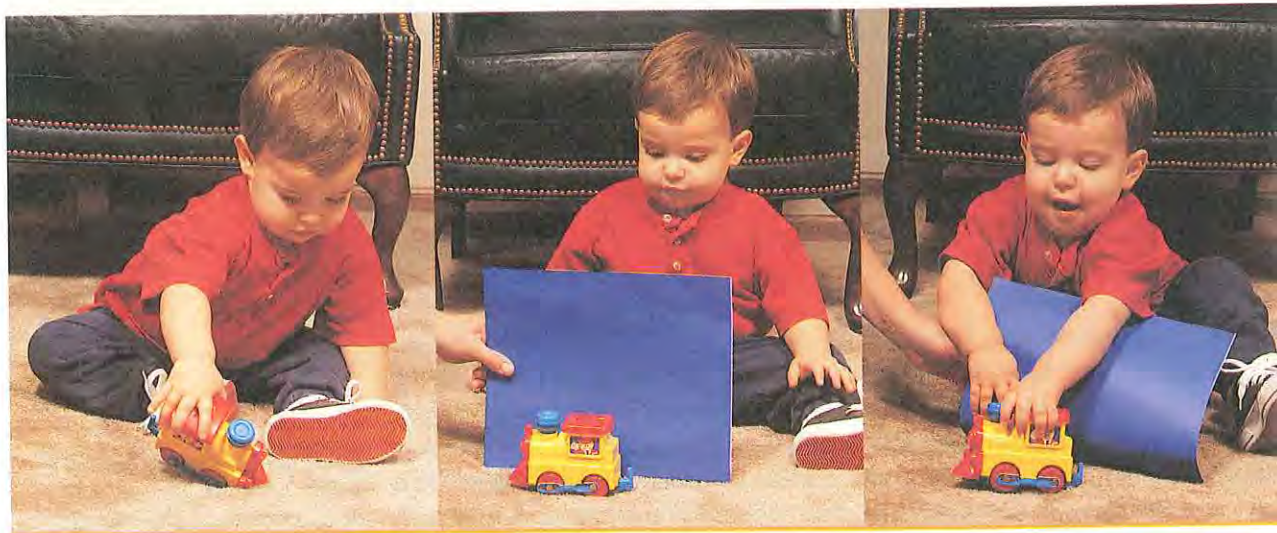
representational thought: the intellectual ability of a child to picture something in his or her mind

Representational Thought The achievement of object permanence suggests that a child has begun to engage in what Piaget calls **representational thought**. The child's intelligence is no longer one of

Figure 3.7

Showing Object Permanence

A child who lacks object permanence will reach for a visible toy but not for one that is hidden behind a barrier—even if the child has seen someone place the toy behind the barrier. The child below, however, displays object permanence. **At what age should a child begin to understand the concept of object permanence?**



action only. Now, children can picture (or represent) things in their minds. At 14 months of age, Piaget's daughter demonstrated this. When she was out visiting another family, she happened to witness a child throwing a temper tantrum. She had never had a tantrum herself, but the next day she did—screaming, shaking her playpen, and stamping her feet as the other child had. She had formed so clear an image of the tantrum in her mind that she was able to create an excellent imitation a day later (Ginsburg & Opper, 1969). To Piaget, this meant that his daughter was using symbols. Soon she would learn to use a much more complex system of symbols—spoken language.

The Principle of Conservation

More complex intellectual abilities emerge as the infant grows into childhood. Between the ages of 5 and 7, most children begin to understand what Piaget calls **conservation**, the principle that a given quantity does not change when its appearance is changed. For example, if you have two identical short, wide jars filled with water and you pour the contents of one of these jars into a tall, thin jar, a child under 5 will say that the tall jar contains more water than the short one. If you pour the water back into the short jar to show the amount has not changed, the child will still maintain that there was more water in the tall container. Children under 5 do not seem to be able to think about two dimensions (height and width) at the same time. That is, they do not understand that a change in width is made up for by a change in the height of the tall glass (see Figure 3.8). This happens because children are **egocentric**. Egocentric thinking refers to seeing and thinking of the world from

conservation: the principle that a given quantity does not change when its appearance is changed

egocentric: a young child's inability to understand another person's perspective



Profiles In Psychology

Jean Piaget

1896–1980

"[T]he child no longer tends to approach the state of adulthood by receiving reason and the rules of right action ready-made, but by achieving them with his own effort and personal experience; in return society expects more of its new generations than mere imitation: it expects enrichment."

Born in Switzerland, Jean Piaget sought to answer one question in his life work: How does knowledge grow? He studied his three children and thousands of other children to answer this question. Piaget spent his time watching children play and playing with them. He told them stories and listened to their stories, asking them questions about why things are as they are. He invented problems for them to solve and asked them what they dreamt about.

What did Piaget discover? He discovered that knowledge builds as children grow. Children develop logic and think differently at different ages. Psychologists regard Piaget's discovery as revolutionary and insightful. Piaget's theory challenged the behaviorists' view that the environment determines behavior. Piaget stressed a child's active role in gaining knowledge. For these contributions, many consider Piaget the greatest child psychologist of the twentieth century.

your own standpoint and having difficulty understanding someone else's viewpoint and other perspectives. By age 7, the same child will tell you that the tall jar contains the same amount of water as the short one.

Piaget's Stages of Cognitive Development Piaget described the changes that occur in children's understanding in four stages of cognitive development (see Figure 3.9). During the *sensorimotor stage*, the infant uses schemas that primarily involve his body and sensations. The *preoperational stage* emerges when the child begins to use mental images or symbols to understand things. By the third stage, *concrete operations*, children are able to use logical schemas, but their understanding is limited to concrete objects or problems. In the *formal operations stage*, the person is able to solve abstract problems. According to Piaget, a person's development through these four stages depends on both the maturation of his or her nervous system and on the kinds of experiences he or she has had. Everyone goes through the stages in the same order, but not necessarily at the same age.

EMOTIONAL DEVELOPMENT

While the child is developing his ability to use his body, to think, and to express himself, he is also developing emotionally. He begins to become attached to specific people and to care about what they think and feel.

Figure 3.8 Tasks to Measure Conservation

The concept of conservation can be used to show that children think less logically than adults do. Children in the preoperational stage do not understand that the property of a substance remains the same although its appearance may change. *How is conservation related to egocentric thinking?*





Type of conservation	First display	Second display	Child is asked
Length	 The child agrees that the sticks are of equal length.	 The experimenter moves one stick closer to the child.	Which stick is longer? Preconserving child will say that one stick is longer. Conserving child will say that they are the same length.
Substance amount	 The child acknowledges that the two balls have equal amounts of clay.	 The experimenter rolls out one of the balls.	Do the two pieces have the same amount of clay? Preconserving child will say that the long piece has more clay. Conserving child will say that the two pieces have the same amount of clay.

Figure 3.9 Piaget's Stages of Cognitive Development

Piaget stressed the active role of the child in gaining knowledge. He also stressed the differences in the way a child thinks during different stages of maturity. *At which of Piaget's stages do children lack the concept of conservation?*

Stage	Approximate Age	General Characteristics
Sensorimotor	Birth–2 years	Behavior consists of simple motor responses to sensory stimuli; lacks concept of object permanence
Preoperational	2–7 years	Lacks operations (reversible mental processes); exhibits egocentric thinking; lacks concept of conservation; uses symbols (such as words or mental images) to solve simple problems or to talk about things that are not present
Concrete operations	7–11 years	Begins to understand concept of conservation; still has trouble with abstract ideas; classification abilities improve; masters concept of conservation
Formal operations	11 years–onward	Understands abstract ideas and hypothetical situations; capable of logical and deductive reasoning

Experiments With Animals

Experiments with baby birds and monkeys have shown that early in life there is a maturationally determined time of readiness for attachment. If the infant is too young or too old, the attachment usually cannot be formed, but the attachment itself is a kind of learning. If the attachment is not made, or if a different attachment is made, the infant will develop in a different way as a result.

Imprinting Konrad Lorenz (1903–1989) became a pioneer in the field of animal learning. Lorenz discovered that baby geese become attached to their mothers in a rapid, virtually permanent learning process called **imprinting**. A few hours after they struggle out of their shells, goslings are ready to start waddling after the first thing they see that moves. Whatever it is, they usually stay with it and treat it as though it were their mother from that time on. Usually, of course, the first thing they see is the mother goose. Yet Lorenz found that if he substituted himself or some moving object like a green box being dragged along the ground, the goslings would follow that. Lorenz's goslings followed him wherever he went and ran to him when frightened (see Figure 3.10). Goslings are especially sensitive just after birth, and whatever they learn during this critical period, about 13 to 16 hours after birth, makes a deep impression that resists change. A **critical period** is a time in development when an animal (or human) is best able to learn a skill or behavior. If a gosling has imprinted on a human being instead of a goose, it will correct its imprinted response when later exposed to its actual mother. Thus, imprinting is important for survival purposes.

imprinting: inherited tendency of some newborn animals to follow the first moving object they see

critical period: a specific time in development when certain skills or abilities are most easily learned

Figure 3.10 The Process of Imprinting

Konrad Lorenz was the first moving object these goslings saw after they hatched, so they became imprinted on him. *How is imprinting related to survival?*



cloth mother, whether she gave food or not, and for the most part ignored the wire mother. If a frightening object was placed in the monkey's cage, the baby monkey would run to the cloth mother for security, not to the wire mother. It was the touching—physical contact—that mattered, not the feeding. Harlow called this contact comfort, or tactile touch. He concluded that the monkeys clung to their mothers because of the need for contact comfort.

Human Infants

Is there a critical period when infants need to become attached to a caregiver, as Lorenz's experiments suggest? Some psychologists would answer this question with a firm "yes." Infants begin to form an attachment to their mothers (or to a surrogate mother) at about 6 months, when they are able to distinguish one person from another and are beginning to develop object permanence. This attachment seems to be especially strong between the ages of 6 months and 3 years. (Attachment is a deep, caring, close, and enduring emotional bond between an infant and caregiver.) By 3 years, the child has developed to the stage where he is able to remember and imagine his mother and maintain a relationship with her (in fantasy) even if she is absent.

When an attachment bond to one person has been formed, disruption can be disturbing to the infant. For example, when a 1-year-old child encounters a stranger, that child may display anxiety even when the mother is present. If the mother remains nearby, this *stranger anxiety* will pass. *Separation anxiety* occurs whenever the child is suddenly separated from the mother. If the separation persists, the child may develop psychological disorders.

Mary Ainsworth, with John Bowlby, studied attachment in families (Ainsworth & Bowlby, 1991). Ainsworth devised a technique called the

Surrogate Mothers An American psychologist, Harry Harlow (1905–1981), studied the relationship between mother and child in a species closer to humans, the rhesus monkey. His first question was: What makes the mother so important? He tried to answer this question by taking baby monkeys away from their natural mothers as soon as they were born. (This is described further in Chapter 12.) Harlow raised the monkeys with two surrogate, or substitute, mothers. Each monkey could choose between a mother constructed of wood and wire and a mother constructed in the same way but covered with soft cloth. In some cages, the cloth mother was equipped with a bottle; in others, the wire mother was.

The results were dramatic. The young monkeys became strongly attached to the

Strange Situation to measure attachment. In this technique, mothers and children underwent a series of episodes that sometimes involved the mother leaving and coming back into the room when a stranger was present and when a stranger was not present. From her research, she found there were three patterns of attachment in children: *secure attachment*, *avoidant attachment*, and *resistant attachment*. Psychologists have since identified a fourth attachment, called *disorganized attachment*.

Infants who demonstrate secure attachment balance the need to explore and the need to be close. They welcome the mother back when she returns and are free of anger. In avoidant attachment, the infants avoid or ignore the mother when she leaves and returns. The infants with resistant attachment are not upset when the mother leaves but reject her or act angrily when she returns. The infants with disorganized attachment behave inconsistently. They seem confused and act in contradictory ways. They may not be upset when the mother leaves but then they avoid her when she returns. This attachment seems to be the least secure attachment. (Mothers who are sensitive and responsive tend to have securely attached infants. However, there is a complex interplay between caregivers and infants.)



This monkey went to the cloth surrogate mother for comfort and reassurance.

Quick Lab

How do children exhibit attachment?


How do children show emotional attachment to their parents or caregivers?

Procedure

1. Observe a 1- or 2-year-old child with a parent or caregiver for signs of emotional attachment. A day care center, a pediatrician's waiting room, or a play area in a shopping mall are good places to observe.
2. Watch for the following: How often does the child make contact with his or her parent? Does the child move away and explore? How does the child respond to unfamiliar people or objects?

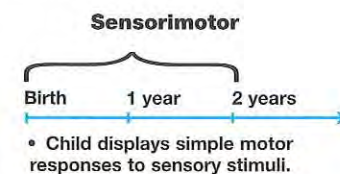
Analysis

1. Did the child exhibit separation anxiety? What were the signs?
2. In a short paragraph, assess the emotional attachment of the child you observed.

 See the **Skills Handbook**, page 622, for an explanation of designing an experiment.

SECTION 2 Assessment

1. **Review the Vocabulary** Why do infants construct schemas?
2. **Visualize the Main Idea** Using Piaget's stages, create a time line that tracks the cognitive development of a child. See the example below.
3. **Recall Information** What does it mean when people say children are egocentric?
4. **Think Critically** How might a child who displays avoidant attachment react when placed alone in a strange room?



5. **Application Activity** Design your own test for object permanence. Use several objects and test a younger sibling, cousin, or your pet dog or cat to see if he or she searches for hidden objects. Describe the results of your experiment.

Parenting Styles and Social Development

Reader's Guide

■ Main Idea

Children face various social decisions as they grow and progress through the stages of life.

■ Vocabulary

- authoritarian family
- democratic/authoritative family
- permissive/laissez-faire family
- socialization
- identification
- sublimation
- role taking

■ Objectives

- Describe theories of social development.
- Outline Kohlberg's stages of moral reasoning.

The story above comes from a preschool teacher. She concluded that children do not necessarily draw the conclusions you intend them to. The children involved in the “pretend-eating” and “pretend-kicking” did not follow the teacher’s logic. The teacher explained the difference between acceptable “pretend-eating” and “pretend-fighting” by stating, “Sometimes people get hurt even when you pretend to fight.” Children learn the rules for behavior in society through experiences such as this one.

EXPLORING PSYCHOLOGY

A Day in the Life of a Preschool Teacher

“Hey you two—just pretend to eat, remember? If you put those spoons in your mouth, you’ll pick up germs. Just pretend to use them.”

That afternoon, the same two boys engaged in a mock karate battle on the playground. Hitting and kicking is forbidden in my class, regardless of whether it hurts anyone or not. To listen to them protesting the time-out, you’d think they’d never heard the rule.

“We weren’t fighting!”

“You were kicking,” I said sternly. “We don’t kick here.”

“But we weren’t kicking!” they protested. “We were pretend-kicking, just like pretend-eating.”

—from “Little People’s Logic” by Sarah Starr

PARENTING STYLES

The way in which children seek independence and the ease with which they resolve conflicts about becoming adults depend in large part on the parent-child relationship. Diana Baumrind (1971, 1973) observed and interviewed nursery school children and their parents. Follow-up observations when the children were 8 or 9 led to several conclusions about the impact of three distinct parenting styles on children.

In **authoritarian families** parents are the bosses. They do not believe that they have to explain their actions or demands. In fact, such parents may believe the child has no right to question parental decisions.

In **democratic** or **authoritative families** children participate in decisions affecting their lives. There is a great deal of discussion and negotiation in such families. Parents listen to their children’s reasons for wanting to go somewhere or do something and make an effort to explain their rules and expectations. The children make many decisions for themselves, but the parents retain the right to veto plans of which they disapprove.

In **permissive** or **laissez-faire families** children have the final say. The parents may attempt to guide the children but give in when the children insist on having their own way. Or the parents may simply give up their child-rearing responsibilities—setting no rules about behavior, making no demands, voicing no expectations, virtually ignoring the young people in their house.

Psychologists (Maccoby & Martin, 1983) later identified a fourth parenting style: *uninvolved parents*. These parents were typically egocentric in their child rearing and seemed uncommitted to their roles and quite distant from their children.

Effects of Parenting Styles

Numerous studies suggest that adolescents who have grown up in democratic or authoritative families are more confident of their own values and goals than other young people. This seems to come from two features—the *establishment of limits* on the child and *responding* to the child with warmth and support (Bukatko & Daehler, 2004). The children of democratic families are more likely to want to make their own decisions with or without advice. There are several reasons for this: First, the child is able to *assume responsibility gradually*. He or she is not denied the opportunity to exercise judgment (as in authoritarian families) or given too much responsibility too soon (as in permissive families). Second, the child is more likely to *identify with parents* who love and respect him or her than with parents who treat him or her as incompetent or who seem



Figure 3.11 Parents and Children

Diana Baumrind’s research focused on European-American children, but parenting styles may differ across cultures and groups. **According to research on European-American children, which parenting style seems to lead to more confident children?**

authoritarian family: parents attempt to control, shape, and evaluate the behavior and attitudes of children and adolescents in accordance with a set code of conduct

democratic/authoritative family: children and adolescents participate in decisions affecting their lives

permissive/laissez-faire family: children and adolescents have the final say; parents are less controlling and have a nonpunishing, accepting attitude toward children

PSYCHOLOGY and You

Nature vs. Nurture

Do you think that the way parents treat their children influences how those children will turn out? Judith Rich Harris does not think so (Harris, 1999). Harris argues that other than the genes parents contribute to their children, virtually nothing they do or say makes a difference in what kind of adult the child becomes. Harris further proposes that a child's natural, genetic tendencies make her parents behave a certain way.

Harris claims that peer groups, not parents, teach children how to behave in the world. So the only influence parents have over their children, then, is by supplying the environment in which their children meet other peers. For example, parents should live in a good neighborhood so their children associate with the "right" peers.

Many psychologists passionately criticize Harris's theory. Critics claim that there is a very strong relationship between parenting styles and the social development of children. They argue that although two children may share the same parents, they may be treated differently by them and, thus, turn out differently.

indifferent. Finally, through their behavior toward the child, democratic parents *present a model of responsible, cooperative independence* for the growing person to imitate.

Although the style parents adopt in dealing with their children influences adolescent development, it would be wrong to conclude that parents are solely responsible for the way their children turn out. Children themselves may contribute to the style parents embrace, with consequences for their own personal development. Parents may adopt a *laissez-faire* attitude simply because they find that style the easiest way to cope with a teenager who insists on having his or her own way. Adolescents experiencing rapid physical and emotional changes may force their parents to make major adjustments in their parenting style.

CHILD ABUSE

Child abuse includes the physical or mental injury, sexual abuse, negligent treatment, or mistreatment of children under the age of 18 by adults entrusted with their care. Accurate statistics are difficult to compile, since many incidents of child abuse go unreported. In 2003 nearly 3 million cases of child abuse were reported. After investigation, an estimated 906,000 children were confirmed as victims of actual abuse or neglect situations (Child Maltreatment 2003, 2005).

Child abuse is viewed as a social problem resulting from a variety of causes. Many abusive parents were themselves mistreated as children, suggesting that (in contrast to Harris's view in "Psychology and You" above) these parents may have learned an inappropriate way of caring for children. Such parents tend to use the harsh physical discipline that they saw their own parents using. Many abusive parents have little patience with their children. Often they have unrealistic expectations.

Overburdened and stressed parents are more likely to abuse their children. Low-birthweight infants and those children who are hyperactive or mentally or physically disadvantaged experience a higher than normal incidence of abuse. One reason for this higher incidence may be that such children are less responsive and more difficult to care for, thus making greater demands on and providing fewer rewards for the parents (Belsky, 1984; Pianta, Egeland, & Erikson, 1989). Social-cultural stresses such as unemployment and lack of contact with family, friends,

and groups in the community are other factors associated with child abuse.

Several strategies show promise in reducing child abuse. For example, parent education for abusive parents allows them to learn new ways of dealing with their children. By providing information about resources and a support system for these families, communities may reduce the incidence of child abuse.

Abuse has many developmental effects for its victims. It may rob children of their childhood and create a loss of trust and feelings of guilt. In turn, this may lead to antisocial behavior, depression, identity confusion, loss of self-esteem, and other emotional problems. Every state and most counties have social services agencies that provide protective services to children. They have legal authority to investigate reported incidents of child abuse.

SOCIAL DEVELOPMENT

Learning the rules of behavior of the culture in which you are born and grow up is a process known as **socialization**. To live with other people, a child has to learn what is considered acceptable and unacceptable behavior. This is not as easy as it sounds. Some social rules are clear and inflexible. Other social rules leave room for individual decisions, so that sometimes there seems to be a gray area between right and wrong. Some rules change from situation to situation. Some apply to certain categories of people. For example, some rules for boys in our society are different from the rules for girls. We tend to encourage boys to express aggression but not fear; traditionally, girls have been raised to express emotions but not ambitions. Of course, the rules for feminine behavior have changed over the years.

Learning what the rules are—and when to apply or bend them—is, however, only one dimension of socialization. Every society has ideas about what is meaningful, valuable, worth striving for, and beautiful. Every society classifies people according to their family, sex, age, skills, personality characteristics, and other criteria. Every culture has notions about what makes individuals behave as they do. In absorbing these notions, a child acquires an identity as an individual member of a society, a member of different social categories, and a member of a family. Acquiring these identities is the second dimension of socialization.

Finally, socialization involves learning to live with other people and with yourself. Anyone who has seen the shock of a 2-year-old's face when another child his age takes a toy he wants, or the frustration and humiliation a 4-year-old experiences when she discovers she is unable to hit a baseball on the first try, knows how painful it can be to discover that other people have rights and that we all have limitations.

Figure 3.12 Socialization

Through socialization, children learn the beliefs and behaviors valued by their society. **What are the three dimensions of socialization?**



Reading Check
What is an effective way of stopping child abuse?

socialization: the process of learning the rules of behavior of the culture within which an individual is born and will live

Freud's Theory of Psychosexual Development

Sigmund Freud believed that all children are born with powerful sexual and aggressive urges. In learning to control these impulses, children acquire a sense of right and wrong. The process—and the results—are different for boys and girls.

According to Freud, in the first few years of life, boys and girls have similar experiences. Their erotic pleasures are obtained through the mouth, sucking at their mother's breast. Weaning the child from nursing is a period of frustration and conflict—it is the child's first experience with not getting what he wants. Freud called this the *oral stage* of development (see Figure 3.13). Later the anus becomes the source of erotic pleasure, giving rise to what Freud called the *anal stage*. Through toilet training the child learns to curb freedom and establish social control.

A major conflict comes between the ages of 3 and 5, when children discover the pleasure they can obtain from their genitals. As a consequence, they become extremely aware of the differences between themselves

and members of the opposite sex. In this *phallic stage*, according to Freud, the child becomes a rival for the affections of the parent of the opposite sex. The boy wants to win his mother for himself and finds himself in hostile conflict with his father. The girl wants her father for herself and tries to shut out her mother. These struggles take place on an unconscious level. Generally, the child and the parents do not have any clear awareness that it is going on. In this process, which is called **identification** with the aggressor, the boy takes on all his father's values and moral principles. Thus, at the same time that he learns to behave like a man, he internalizes his father's morality. His father's voice becomes a voice inside him, the voice of conscience. The girl also goes through this process and begins to identify with her mother. She feels her mother's triumphs and failures as if they were her own, and she internalizes her mother's moral code.

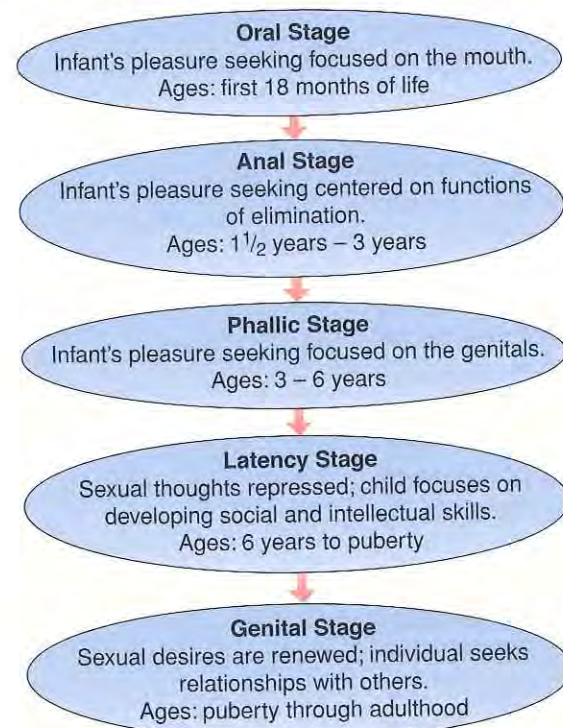
Freud believed that at about age 5 or 6 children enter a *latency stage*. Sexual desires are pushed into the background, and children explore the world and learn new skills. This process of redirecting sexual impulses into learning tasks is called **sublimation**. Ideally, when one reaches the *genital stage* at adolescence, one derives as much satisfaction from giving pleasure as from receiving it. For Freud, personality development is essentially complete as we enter adolescence. Today relatively few psychologists believe that sexual feelings disappear in childhood.

identification: the process by which a child adopts the values and principles of the same-sex parent

sublimation: the process of redirecting sexual impulses into learning tasks

Figure 3.13 Freud's Stages of Psychosexual Development

According to Freud, there is often conflict between child and parent. The conflict occurs because the child wants immediate gratification of needs while the parent restricts that gratification in some way. **At what stage do children compete with their parents?**



Erikson's Theory of Psychosocial Development

Erik Erikson (1902–1994) takes a broader view of human development than Freud in terms of both time and scope. Although he recognizes the child's sexual and aggressive urges, he believes that the need for social approval is just as important. Erikson studied what he called *psychosocial* development—life periods in which an individual's goal is to satisfy desires associated with social needs. Although Erikson believes that childhood experiences have a lasting impact on the individual, he sees development as a lifelong interactive process between people (see Figure 3.14).

Erikson argues that we all face many crises as we grow from infancy to old age, as we mature, and as people expect more from us. Each of these crises represents an issue that everyone faces. The child, adolescent, or adult may develop more strongly in one way or another, depending on how other people respond to his or her efforts.

For example, the 2-year-old is delighted with his newfound ability to walk, to get into things, to use words, and to ask questions. The very fact that he has acquired these abilities adds to his self-esteem, and he is eager to use them. If the adults around him applaud his efforts and acknowledge his achievements, he begins to develop a sense of autonomy, or independence. However, if they ignore him except to punish him for going too far or being a nuisance, the child may begin to doubt the value of his achievements. He may also feel shame because the people around him act as if his new desire for independence is bad.

Reading Check
How does Erikson's view of development differ from Freud's?

Learning Theories of Development

Both Freud and Erikson stress the emotional dynamics of social development. Their theories suggest that learning social rules is altogether different from learning to ride a bicycle or to speak a foreign language. Many psychologists disagree. They believe children learn the ways of their social world because they are rewarded for conforming and because they copy older children and adults in anticipation of future rewards. In other words, social development is simply a matter of conditioning (learning) and imitation. (See Chapter 9 for a discussion of these concepts.)

The Cognitive-Developmental Approach

Theorists who emphasize the role of cognition or thinking in development view the growing child differently. Learning theory implies that the child is essentially passive—a piece of clay to be shaped by experience. The people who administer rewards and punishments and serve as models do the shaping. Cognitive theorists see the child as the shaper. Taking their cue from Jean Piaget, they argue that social development is the result of the child's acting on the environment and trying to make sense out of his experiences. The games children play illustrate this.

Games and Play Children's games are serious business. When left to their own devices, youngsters spend a great deal of time making up rules. This enables them to learn for themselves the importance of agreeing on

a structure for group activities. A child can relax and enjoy himself without fear of rejection as long as he does not break the rules. The world of play thus becomes a miniature society, with its own rules and codes. Games also teach children about aspects of adult life in a nonthreatening way. In young children's games, it is the experience of playing, not winning, that counts.

Much of the children's play involves **role taking**. Youngsters try on such adult roles as mother, father, teacher, storekeeper, explorer, and rock star. Role taking allows them to learn about different points of view firsthand. Suppose a child plays a mother opposite another child who plays a whiny, disobedient baby. When she finds herself totally frustrated by the other child's nagging, she begins to understand why her mother gets mad. You are unable to cook even a pretend meal when the baby keeps knocking over the pots and pans.

Moral Development Lawrence Kohlberg's studies show just how important being able to see other people's points of view is to social development in general and to moral development in particular. Kohlberg (1968) studied the development of moral reasoning—deciding what is right and what is wrong—by presenting children of different ages with a series of moral dilemmas. Kohlberg gave the following example: In Europe, a

role taking: children's play that involves assuming adult roles, thus enabling the child to experience different points of view

woman was near death from cancer. One drug might save her, a form of radium that a druggist in the same town had recently discovered. The druggist was charging \$2,000, ten times what the drug cost him to make. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could get together only about half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said, "No." The husband got desperate and broke into the man's store to steal the drug for his wife. Should the husband have done that? Why? (Kohlberg, 1969b)

What interested Kohlberg was how the children arrived at a conclusion. He wanted to know what sort of reasoning they used. After questioning 84 children, Kohlberg identified six stages of moral development (see Figure 3.15). He then replicated his findings in several different cultures.

Stages of Moral Development In stage one, children are totally egocentric. They do not consider other people's points of view and have no sense of right and wrong. Their main concern is avoiding punishment. A child in this stage will say that the man should steal because people will blame him for his wife's death if he does not, or that he should not steal because he will go to jail when he's caught.

Children in stage two have a better idea of how to receive rewards as well as to avoid punishment. Youngsters at this level interpret the Golden Rule as "help someone if he helps you, and hurt him if he hurts you." They are still egocentric and premoral, evaluating acts in terms of the consequences, not in terms of right and wrong.

In stage three, children become acutely sensitive to what other people want and think. A child in this stage will say that the man in the story should steal because people will think he is cruel if he lets his wife die, or that he should not steal because people will think he is a criminal. In other words, children want social approval in stage three, so they apply the rules other people have decreed literally and rigidly.

In stage four, a child is less concerned with the approval of others. The key issue here is law and order—a law is seen as a moral rule and is obeyed because of a strong belief in established authority. For example, a woman may stay married because she took a vow, or a driver may obey the speed limit when no police are around. Moral thinking here, as at stage three, is quite rigid.

In the remaining two stages, people continue to broaden their perspective. The stage-five person is primarily concerned with whether a law is fair or just. He believes that laws must change as the world changes, and they are never absolute. The important question is whether a given law is good for society as a whole. Stage six involves an acceptance of ethical principles that apply to everyone, like the Golden Rule: "Do unto others as you would have them do unto you." Such moral imperatives cannot be broken; they are more important than any written law.

Critics point out a gender bias in Kohlberg's theory (Gilligan, 1977). Whereas girls might argue that both stealing and letting Heinz's wife die are wrong, boys might logically argue that life has greater value than

Figure 3.14 Erikson's Stages of Psychosocial Development

According to Erikson, a child encounters a psychosocial challenge at each stage. If the child successfully resolves the issue, the child develops a positive social trait and progresses to the next stage. *What issues concern a child in the first year of life?*

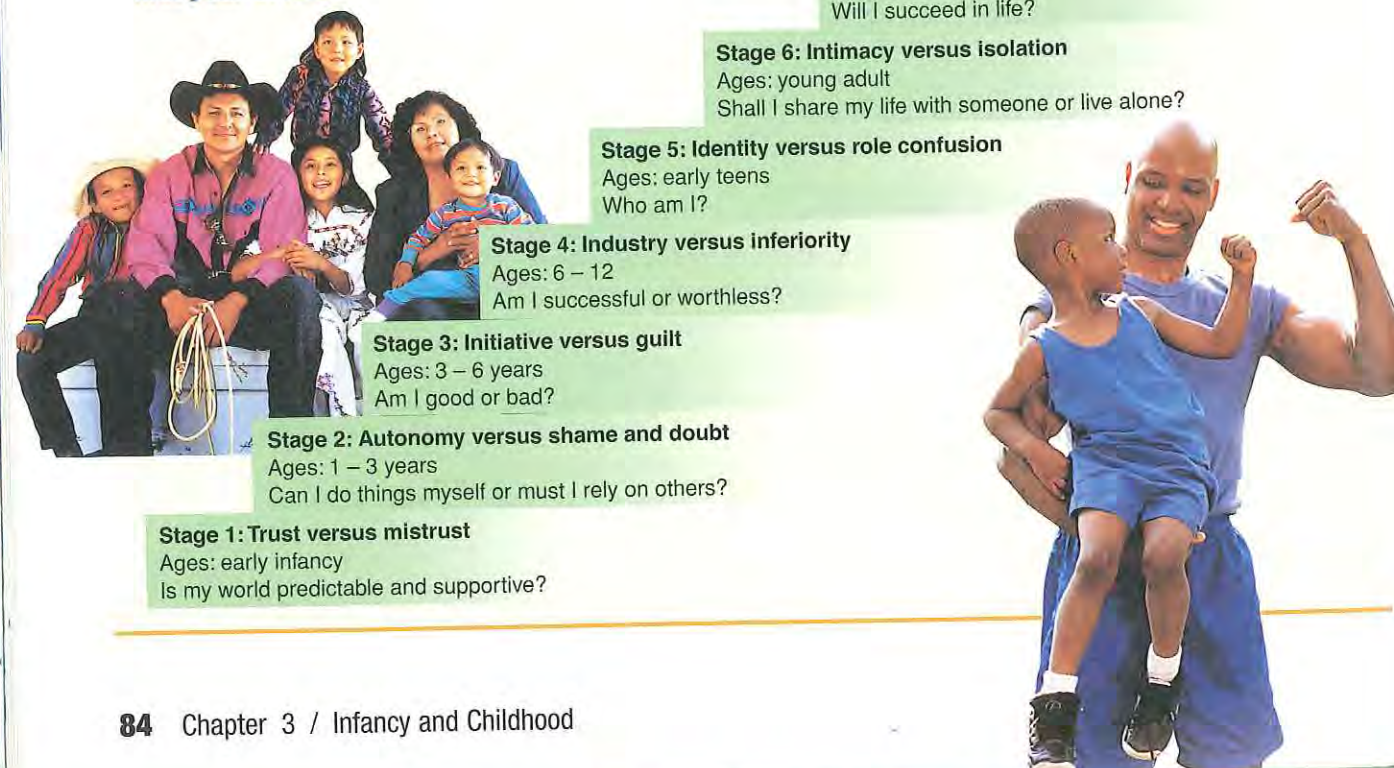


Figure 3.15

Kohlberg's Stages of Moral Development

Each stage of Kohlberg's theory is cognitively more complex than the last. *Why would a child in the first stage choose to listen to her parents?*

Level	Stage	Orientation	Reference Group	Example
Pre-conventional	1	Obedience and punishment	Self	It's OK for Heinz to steal if he doesn't get caught.
	2	Instrumental relativist	Immediate family	Stealing the drug helps his wife.
Conventional	3	Good boy/Nice girl	Extended family	His in-laws will respect him if he steals the drug.
	4	Law and order	Self-serving view of society	It's illegal to steal.
Post-conventional	5	Social contract	Interactive view of society	It's OK to steal because the druggist is charging too much.
	6	Universal ethics principle	Balanced cost/benefit analysis of self/society	If the situations were reversed, would the druggist steal from Heinz?

property. Using these arguments, Kohlberg would place boys at higher levels of moral development. Girls are taught to be empathetic, whereas boys are taught the goal of justice.

To reach the highest levels of moral development, a child must first be able to see other people's points of view. Yet this understanding is no guarantee that a person will respect the rights of others. Thus, the development of thinking or cognitive abilities influences moral development.

SECTION 3

Assessment

- Review the Vocabulary** Describe Freud's theory of socialization.
- Visualize the Main Idea** Describe parenting styles using a chart similar to the one below.

Parenting Style	Role of Parents	Role of Children

- Recall Information** What are the functions of children's games? How do these games illustrate the cognitive-developmental approach?
- Think Critically** What questions might you ask a child to determine what stage of moral development he or she is in?

5. Application Activity Go to a public place where you can observe children, such as a playground, park, or shopping mall. Note the behaviors between parents and child and among the children as they play together. Record and analyze your observations. Describe the different parenting styles you observed.

CHAPTER 3

Summary and Vocabulary

Developmental psychology is the study of the changes that occur as people grow up and grow older. It covers the entire life cycle, from conception to death.

Section 1 Physical, Perceptual, and Language Development

Main Idea: Infants are born equipped to experience the world. As infants grow physically, they also develop perceptions and language.

- Some psychologists believe that most behaviors are the result of genetics—nature. Others believe that most behaviors are the result of experience and learning—nurture.
- The newborn is capable of certain inherited, automatic, coordinated movement patterns, called reflexes, which are triggered by the right stimulus.
- Infants experience rapid development through maturation and learning.
- Depth perception increases in older infants.
- There are several steps involved in learning language.

Section 2 Cognitive and Emotional Development

Main Idea: As the thought processes of children develop, they begin to think, communicate and relate with others, and solve problems.

- Children's knowledge of the world changes through the processes of assimilation and accommodation.
- Piaget described the changes that occur in children's understanding in four stages of cognitive development.
- Infants begin to develop emotionally by attaching to specific people, usually their mothers.

Section 3 Parenting Styles and Social Development

Main Idea: Children face various social decisions as they grow and progress through the stages of life.

- There are four basic parenting styles—authoritarian, democratic or authoritative, permissive or laissez-faire, and uninvolved.
- Socialization is the process of learning the rules of behavior of one's culture.
- Freud's theory of psychosexual development suggests that all children are born with powerful sexual and aggressive urges, and in learning to control these impulses, children acquire a sense of right and wrong.
- Erikson's theory of psychosocial development suggests that the need for social approval is important.
- The cognitive-developmental theories of development suggest that social development is the result of the child trying to make sense out of his experiences.
- Kohlberg suggested that humans progress through six stages of moral reasoning.

Chapter Vocabulary

- developmental psychology (p. 61)
- grasping reflex (p. 62)
- rooting reflex (p. 62)
- maturation (p. 64)
- telegraphic speech (p. 67)
- schema (p. 71)
- assimilation (p. 71)
- accommodation (p. 71)
- object permanence (p. 72)
- representational thought (p. 72)
- conservation (p. 73)
- egocentric (p. 73)
- imprinting (p. 75)
- critical period (p. 75)
- authoritarian family (p. 79)
- democratic/authoritative family (p. 79)
- permissive/laissez-faire family (p. 79)
- socialization (p. 81)
- identification (p. 82)
- sublimation (p. 82)
- role taking (p. 84)

PSYCHOLOGY
Online

Self-Check Quiz

Visit the *Understanding Psychology* Web site at glencoe.com and click on **Chapter 3—Self-Check Quizzes** to prepare for the Chapter Test.

Reviewing Vocabulary

Choose the letter of the correct term or concept below to complete the sentence.

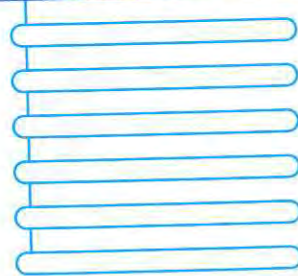
- | | |
|--------------------------------------|-----------------------------|
| a. rooting reflex | f. object permanence |
| b. maturation | g. egocentric |
| c. democratic/authoritative families | h. socialization |
| d. telegraphic speech | i. sublimation |
| e. schemas | j. developmental psychology |

- _____ is the awareness that objects exist even when they cannot be perceived.
- In _____, adults develop a parenting style in which children participate in decisions affecting their lives.
- Because of the _____, a newborn who is touched anywhere around the mouth will move her head and mouth toward the source of the touch.
- Seeing and thinking of the world only from one's own standpoint is called _____ thinking.
- _____ is internally programmed growth.
- Children at around age 2 use _____, in which words are left out but the message gets across.
- The process of redirecting sexual impulses into learning tasks is _____.
- To understand the world, children construct _____, or mental representations of the world.
- The study of changes that occur as an individual matures is _____.
- Learning the rules of behavior of one's culture is called _____.

Recalling Facts

- Describe capacities newborns display.
- How does the maturation process explain why a 4-month-old infant cannot be taught to walk?
- Describe the process by which children learn to talk.
- Define socialization and explain why it is so important to development.
- Using a diagram similar to the one below, list and explain Kohlberg's stages of moral development.

Kohlberg's Stages of Moral Development



Critical Thinking

- Demonstrating Reasoned Judgment** Do you think development is the result of heredity, learning (experience), or both? Why?
- Making Inferences** Should young children be treated as "little adults"? Based on what you have learned about development, do you think that is reasonable? Why or why not?
- Applying Concepts** Young children are egocentric. Provide some examples of children's egocentric thinking.
- Analyzing Concepts** What do you assume might happen when a boy plays with action-figure dolls? How does this behavior fit into the learning theories of development?
- Evaluating Information** Determine how well your beliefs agree with those of your parents. How important do you think your early social training was for what you believe?

Psychology Projects

- Physical, Perceptual, and Language Development** Investigate recent findings about the role of heredity and environment on a child's development. Present your information in an oral report.
- Social Development** How are sex roles communicated to people in American society? Look through magazines and newspapers, watch television commercials, and listen to the radio. Present your findings in an illustrated, captioned poster.
- Cognitive Development** Using information from the chapter as well as from other sources, present 10 ideas that people can use with children to increase their language and intellectual development. Explain how these 10 suggestions will increase a child's language and intellectual development.



Technology Activity

Use the Internet and computer software catalogs to find examples of computer software that parents and other adults can use with infants and small children. Explain what aspect of the child's development—physical, language, emotional, intellectual, and social—the software addresses.



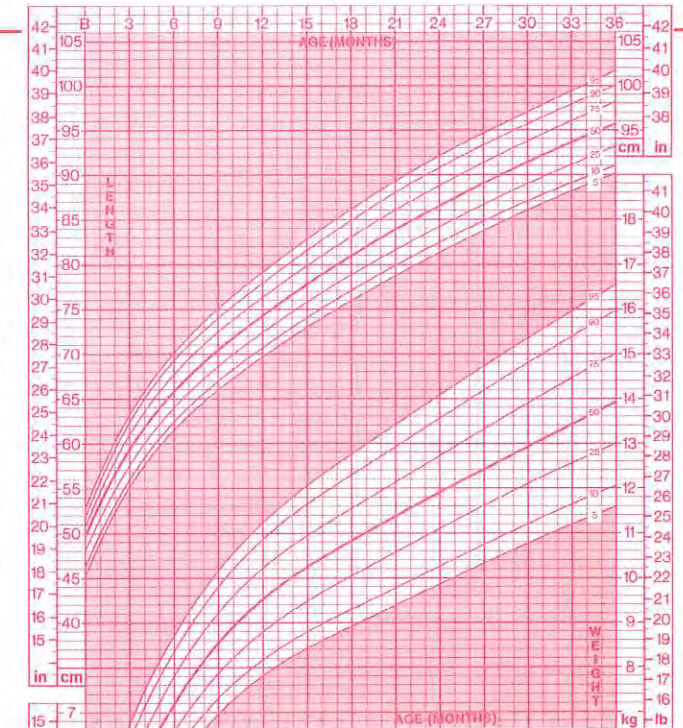
Psychology Journal

Reread your journal entry about the sentences spoken by 2-year-olds. What sorts of words are used and in what context? Can you specify the grammatical rules children of this age use in combining words? Write your answers in your journal.

Building Skills

Interpreting a Graph Doctors often record infants' and young children's weight and height on growth charts similar to the one for girls here. The measurements are presented in the form of percentiles. For example, a 30-month-old girl who weighs 28.7 pounds falls into the 50th percentile. This means that half of all 30-month-old girls weigh less than that child and half weigh more. Review the growth chart, then answer the questions that follow.

- Into what percentiles does an 18-month-old girl fall who weighs about 28 pounds and is 34 inches tall?
- Into what percentile would a 9-month-old girl fall who weighs 22 pounds?
- How do growth charts illustrate that a child's physical development is unique?



Practice and assess key social studies skills with **Glencoe Skillbuilder Interactive Workbook CD-ROM, Level 2**.



See the **Skills Handbook**, page 628, for an explanation of interpreting graphs.

TIME REPORTS

Is It More Than Boys Being Boys?

Two books examine the emotional development of boys

By HARRIET BAROVICK

UNTIL KIP KINKEL OPENED FIRE ON his schoolmates in Springfield, Ore., in May, everyone thought he was just a regular kid. A little angry, maybe, with a gruesome sense of humor. Mostly, just a boy. But even before the frantic second-guessing over the tragedy began came two books—or what the world tries to make of boys—may have been a big part of the problem. Michael Gurian, a Spokane, Wash., therapist and author of *A Fine Young Man*, and Harvard psychiatry professor William Pollack, author of *Real Boys: Rescuing Our Sons from the Myths of Boyhood*, argue that boys are in crisis from emotional undernourishment. Though our culture views them as testosterone-driven demons, boys are much more fragile than many adults realize. And that's about all they agree on; where they clash is on the origin of the difficulties and how to avert them.

Both grapple with a universal truth: boys have complicated relationships with their mothers. Pollack, who is alarmed by what he calls the "silent crisis" of "normal" boys, says we live in a confused society in which mothers are afraid to cling to their sons. On the one hand, we ask 1990s boys to be sensitive and expressive, and on the other, we

saddle them with the culture's outdated notions of masculinity. The result is what Pollack calls the ever present "boy code"—a stoic, uncommunicative, invulnerable stance that does not allow boys to be the warm, empathic human beings they are. The "gender straitjacketing" starts, Pollack says, during the early years, when boys suffer their first and most momentous trauma: premature separation from their well-meaning mothers. Fearful that maintaining a close connection will result in the shaming of their sons (name calling from peers, disapproval from adults), mothers disconnect, usually by the time their boys are five or six. When boys feel ashamed of their dependence on Mom, when they are discouraged from emotional expression, they withdraw, creatively and psychically. They become lost.

Not exactly, insists the anthropologically oriented Gurian, who focuses on adolescent boys. Boys—who are just being who they are—are making a natural, and critical, separation.

And by the way, moms cling too much. Boys are more independent than girls at ages 5 and 6. To suggest something is wrong with this is to "pathologize" boys. Indignant about society's ignorance of male biology, Gurian says we're basing our expectations on female models.

One of the biggest problems for boys in our culture, says Gurian, is that adults, especially female ones, need to be educated about "what a boy is." Evolved from hunter-gatherer primates whose main purpose was survival, boys' uniquely fragile brains are not equipped to handle emotive data in the same way girls' are. So boys are by their nature emotionally insecure. At the same time, their several daily surges of testosterone "hardwire" them to be dominant and physically aggressive and to solve problems quickly. It is the job of parents—in particular, fathers or male mentors—to help them resolve this contradiction and channel their natural attributes productively.

Gurian concedes that a solid relationship with Mom is important during infancy and early childhood. But by age 10 or so, boy raising should largely be a man's game, where values such as honor, compassion, integrity and respect for women are handed down with discipline and understanding. The ability to talk about feelings is worth striving for, but boys don't come to it naturally. Besides, there are other, equally important ways of achieving intimacy.

So is there any agreement at all on how to help avert crises? Sort of. Both advise boy-specific nurturing techniques, like engaging in action-oriented

activity that will lead to conversation instead of asking direct "How do you feel?" questions.



IRON JOHNNIES: Boys, says Gurian, love the rough and tumble but need attention, too.

COLIN HILLMAN

What Gurian and Pollack both bitterly lament—and convincingly illustrate—is the peculiar pain, and the potential loneliness, of being a boy in America today. Especially acute are the adolescent years, when boys look hulking and powerful but are in fact needy and terrified. The statistics are scary: adolescent boys are five times as likely

to commit suicide as adolescent girls; adolescent boys are 1.5 times as likely as girls to be victims of violent crime; boys are more likely to be diagnosed with attention deficit disorder and mental illnesses; and boys commit violent crime at a higher rate than adults.

Sure, Gurian says, boys can't process emotional trauma as well as girls can,

and without proper guidance can go haywire. And Pollack says misdirected rage is a response to emotional repression and to society's message that anger is an acceptable male emotion. The latter argument—like Pollack's overall idea—seems more expansive and more convincing. But either way, we clearly ought to be paying more attention. ■

Surviving Your Teens

Reviving *Ophelia* chronicles the traumas of troubled girls

By ELIZABETH GLEICK

IN THE LAND OF POPULAR PSYCHOLOGY books, nothing works so well as a bunch of case studies, paired with a lot of enthusiastic word of mouth. The No. 1 paperback best seller, Mary Pipher's *Reviving Ophelia: Saving the Selves of Adolescent Girls*, has the combination just right.

Dozens of troubled teenage girls troop across its pages: composite sketches of Charlottes, Whitneys and Danielles who have faced traumatic psychological issues ranging from bulimia to enduring their parents' bitter divorce. There's a girl here for everyone: either the girl the reader once was or the sullen one now lolling about the reader's house listening to Hole.

"The book put a name and a face on something I was already sensing," says Annette Davis, a San Jose, California, mother of two, who has given copies of the book to her children's teachers. "It wasn't just about my daughter, though. It was about me. It spoke to something in my experience in adolescence and some of the pain I still carry around."

Thanks to readers like Davis, who are buying the book by the dozens to

give to friends and showing up to hear Pipher, a Lincoln, Nebraska, clinical psychologist, speak, *Reviving Ophelia* has become a phenomenon. Originally rejected by 13 publishers, the hard-cover book was published in 1994 by Putnam. The book really took off, though, when the paperback came out last March.

Certainly the premise of *Reviving Ophelia* (which takes its title from the doomed Hamlet heroine) is a familiar one. Pipher believes adolescence is an especially precarious time for girls, a time when the fearless, outgoing child is replaced by the unhappy and insecure girl-woman. "Something dramatic happens to girls in early adolescence," Pipher writes. "Just as planes and ships disappear

mysteriously into the Bermuda Triangle, so do the selves of girls go down in droves." She decided to write

the book because her own practice was increasingly occupied by girls—mostly white and middle class, she says—coping with such problems as eating disorders, depression, substance abuse and self-mutilation.

Pipher's view—and what, no doubt, helps make her work so popular—is that, for the most part, the culture, not the parents, are to blame. Pipher points out that girls enter junior high school faced with daunting magazine and movie images of glossy, thin, perfect women. She argues that pop culture is saturated with sex; violence against women is rampant; and drugs and alcohol are far more accessible than they were during her 1950s girlhood in a small Nebraska town.

Pipher does offer commonsensical, unthreatening solutions. She suggests that parents immerse themselves in their daughters' life and take the trouble to learn about the pressures at school. And through therapy she tries to teach the girls to turn their pain outward: to write their angry thoughts in journals, rather than cut, starve or kill themselves; to get involved in charity work when they feel shunned by classmates; and to remind themselves daily of the ways in which they are valuable and unique. ■

—For the complete text of this article and related articles from TIME, please visit www.time.com/teach

ANALYZING THE ARTICLES

1. What is the "boy code"? Do you think such a code exists?
2. **CRITICAL THINKING** According to the books reviewed, what are the crises that adolescent males and females encounter? Are those crises really so different?