Social Cognitive Theory

"What are you doing?" Jason asks Kelly as he comes around the corner and catches her swinging her arms back and forth.

"I'm trying to swing at a ball like the pros do, but I haven't been able to quite do it," Kelly responds. "I was watching a game on TV last night, and the way those guys swing looks so easy, but they hit it so hard. I think I can do that if I work at it."

Three-year-old Jimmy crawls up on his dad's lap with a book. "I read too, Dad," he says as his father puts down his own book to help Jimmy up.

"I really like the way Juanita has quickly put away her materials and is ready to listen," Karen Engle, a second-grade teacher, comments as the students are making the transition from one activity to another.

The other students quickly put away their materials and turn their attention to Karen.

These examples are similar in two ways. First, each involved learning by observing the behavior of others; Kelly tried to imitate the swing of professional baseball players she observed on TV, and Jimmy saw his dad reading and wanted to imitate him. The second graders in Karen's class observed the consequence of Juanita's putting her materials away—being reinforced by Karen's praise—so they did the same.

Second, behaviorism can't explain them. It focuses on changes in behavior that have direct causes outside the learner. For instance, in our chapter-opening case study, taking algebra quizzes directly caused Tim's hand to shake. And in these vignettes, Karen's comment directly reinforced Juanita. But nothing directly happened to Kelly, Jimmy, or the other second graders in Karen's class; observing others caused them to change their behavior.

Social cognitive theory, a theory of learning that focuses on changes in behavior that result from observing others, emerged from the work of Albert Bandura (1925–) (Bandura, 1986, 1997, 2001). Because behaviorism and social cognitive theory both examine changes in behavior, let's compare the two.

> **Social cognitive theory.** A theory of learning that focuses on changes in behavior that result from observing others.

Comparing Behaviorism and Social Cognitive Theory

As you begin this section, you might be asking yourself, "If behaviorists focus on observable behavior, and the term *cognitive* implies memory and thinking, why is a cognitive learning theory included in the same chapter with behaviorism?"

Here's why: Social cognitive theory has its historical roots in behaviorism, but, as the name implies, it has evolved over the years into a more cognitive perspective (Kim & Baylor, 2006). Even today, many authors continue to include aspects of social cognitive theory in books focusing on behavioral principles (e.g., Baldwin & Baldwin, 2001). In addition, behaviorism and social cognitive theory are similar in three ways:

- They focus on experience as an important cause of learning (and an important principle of cognitive theory is that learning and development depend on learners' experience).
- They include the concepts of reinforcement and punishment in their explanations of learning.
- They target feedback as an important aspect of the learning process.

Three important differences exist between the two, however. First, they define learning differently, and second, social cognitive theory emphasizes the role of cognitive processes—beliefs, perceptions, and expectations—in learning. Third, social cognitive theory suggests that the environment, personal factors, and behavior are interdependent, a concept called *reciprocal causation.* Let's look at these differences.

Definition of Learning

Behaviorists define learning as a change in observable behavior, whereas social cognitive theorists view **learning** as a change in mental processes that creates the capacity to demonstrate different behaviors (Hill, 2002). So, learning may or may not result in immediate behavioral change. The role of mental activity (cognition/thinking) is illustrated in our examples. Kelly, for instance, didn't try to imitate the baseball swing until the next day, so her observations had to be stored in her memory or she wouldn't have been able to reproduce the behaviors. Also, nothing directly happened to Kelly, Jimmy, or Karen's second graders—other than observing Juanita. They were reacting to mental processes instead of reinforcers and punishers that directly influenced them.

> **Learning (cognitive).** A change in mental processes that creates the capacity to demonstrate different behaviors.

The Role of Expectations

Instead of viewing reinforcers and punishers as directly causing behavior, as behaviorists do, social cognitive theorists believe that reinforcers and punishers create *expectations*, cognitive processes that then influence behavior. For instance, you study for an exam for several days, but you aren't reinforced until you receive your score. You sustain your efforts because you *expect* to be reinforced for studying. And, Karen's students expected to be praised for following Juanita's example. Behaviorists don't consider the role of expectations in learning, but they are central to social cognitive theory.

The fact that people respond to their expectations means they are aware of which behaviors will be reinforced or punished. This is important because, according to social cognitive theory, reinforcement changes behavior only when learners know what behaviors are being reinforced (Bandura, 1986). Tim, for instance, expected his changed study habits to improve his math scores, so he maintained those habits. If he had expected some other strategy to be effective, he would have used it. He wasn't merely responding to reinforcers; he was actively assessing the effectiveness of his strategy.

The importance of student cognition has two implications for you as a teacher. First, you should clearly specify the behaviors you will reinforce, so students can adapt their behavior accordingly, and second, you should provide students with specific feedback so they know what behaviors have been reinforced. If a student receives full credit for an essay item on a test, for instance, but doesn't know why she received it, she may not know how to respond correctly the next time.
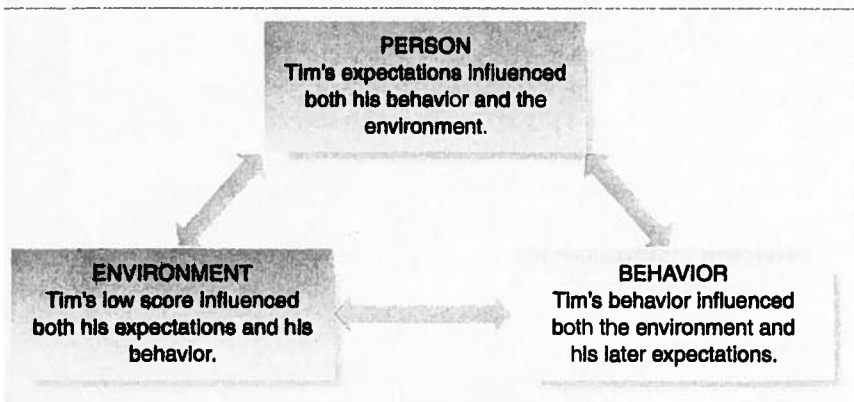
Reciprocal Causation

Behaviorism suggests a one-way relationship between the environment and behavior; the environment influences behavior, but the opposite doesn't occur. Social cognitive theory's explanation is more complex, suggesting that behavior, the environment, and personal factors, such as expectations, are interdependent, meaning each influences the other two. The term **reciprocal causation** describes this interdependence.

For instance, Tim's low score on his algebra quiz (an environmental factor) influenced both his expectations (a personal factor) about future success on algebra quizzes and his behavior (he changed his study habits). His behavior influenced the environment (he went to Susan's home to study) and his later expectations (he became more confident about his capability in algebra). And the environment (his initial low score) influenced both his expectations and his behavior. Figure 9.4 outlines the process of reciprocal causation, illustrated with Tim's example.

We turn now to core concepts in social cognitive theory.

Reciprocal causation. The interdependence of the environment, behavior, and personal factors in learning.

Modeling. A general term that refers to behavioral, cognitive, and affective changes deriving from observing the actions of others.

PERSON
Tim's expectations influenced both his behavior and the environment.

ENVIRONMENT
Tim's low score influenced both his expectations and his behavior.

BEHAVIOR
Tim's behavior influenced both the environment and his later expectations.

Figure 9.4 Reciprocal causation in Tim's behavior

Modeling

Modeling is a general term that refers to behavioral, cognitive, and affective changes deriving from observing the actions of others (Schunk, 2008). It is the central concept of social cognitive theory. Tim, for example, observed that Susan was successful in her approach to studying for exams. As a result, he imitated her behavior; direct imitation is one form of modeling, and it resulted in a behavioral change in Tim.

Modeling plays an important role in our everyday lives. Children learn acceptable ways of behaving by observing their parents and other adults. Teenagers' hair and dress are influenced by characters on

television and in movies, and even as adults, we pick up cues from others in deciding how to dress and act.

Modeling is also important in schools. Teachers demonstrate a variety of skills, such as solutions to math problems, effective writing techniques, and critical thinking (Braaksma et al., 2004). You will also use modeling to teach courtesy and respect for others, tolerance for dissenting opinions, motivation to learn, and other attitudes and values. Coaches demonstrate techniques for correctly hitting a serve in volleyball, making a corner kick in soccer, and other skills, and through modeling, also teach important ideas such as teamwork, a sense of fair play, humility in victory, and graciousness in defeat. As teacher educators, we are urged to be models for our students (Lunenberg, Korthagen, & Swennen, 2007).

When teachers or coaches model intellectual or physical skills, they are *direct models*. Videotaped examples, as well as characters in movies, television, books, and plays are *symbolic models*, and combining different portions of observed acts represents *synthesized modeling* (Bandura, 1986). Table 9.5 outlines these different forms of modeling.

Teacher modeling can help students develop a variety of abilities.

Cognitive Modeling

Cognitive modeling, the process of performing a skill combined with verbalizing the thinking behind the actions, can also be a powerful teaching tool (Schunk, 2008). For example:

Cognitive modeling. The process of performing a demonstration combined with verbalizing the thinking behind the actions.

"Wait," Jeanna Edwards says as she sees Nicole struggling with the microscope. "Let me show you. . . . Watch closely as I adjust it. The first thing I think about is getting the slide in place. Otherwise, I might not be able to find what I'm looking for. Then, I want to be sure I don't crack the slide while I lower the lens, so I watch from the side. Finally, I slowly raise the lens until I have the object in focus. You were trying to focus as you lowered it. It's easier and safer if you try to focus as you raise it. Go ahead and try it."

Table 9.5   Different forms of modeling

Type of Modeling	Description	Examples
Direct modeling	An individual attempts to imitate the behavior or thinking of a live model.	Tim imitated Susan's study habits. A first grader forms letters in the same way that the teacher forms them.
Symbolic modeling	People imitate behaviors and thinking displayed by characters in books, plays, movies, television, or the Internet.	People adopt fashion patterns displayed by influential people, such as movie stars or the First Lady of the United States. Teenagers adopt slang and slogans displayed by characters in a popular movie or television show oriented toward teens.
Synthesized modeling	People combine behaviors observed in different acts.	A child uses a chair to get up and open a cupboard door after seeing her brother use a chair to get a book from a shelf and seeing her mother open the cupboard door.

As Jeanna demonstrated how to use the microscope, she also described her thoughts: "The first thing I think about is getting the slide into place. Otherwise. . . ." When you put your thinking into words, and when you encourage your students to verbalize their understanding, you provide them with concrete examples of how to think about and solve problems (Braaksma et al., 2004).

Ed Psych and You

You're driving 75 miles an hour on the interstate, and you're passed by a sports car that appears to be going at least 80. The posted speed limit is 65. A moment later, you see the sports car that passed you pulled over by a highway patrol. You immediately slow down. Why do you slow down?

Vicarious learning. The process of observing the consequences of others' actions and adjusting our own behavior accordingly.

Vicarious Learning

Think about your behavior in "Ed Psych and You" here. Nothing directly happened to you; you simply observed the consequence of the other driver's actions (he got pulled over), and you adjusted your behavior accordingly, a process called **vicarious learning** (Gholson & Craig, 2006). When you saw the sports car pulled over and you slowed down, you were *vicariously punished*, and when a student is publicly reprimanded for leaving his seat without permission, other students in the class are also vicariously punished.

On the other hand, Tim saw how well Susan did on quizzes, so he was *vicariously reinforced* by her success. And, when Karen Engle said, "I really like the way Juanita has quickly put away her materials and is ready to listen," Juanita's classmates were also vicariously reinforced.

The influence of expectations helps us understand vicarious learning. Tim expected to be reinforced for imitating Susan's behavior, and the other students in Karen's class expected to be reinforced for putting their materials away. You expected to be punished if you continued speeding, so you slowed down.

Nonoccurrence of Expected Consequences

Expectations are also important because they influence behavior when they *are not* met. For example, your instructor gives you a homework assignment, you work hard on it, but he or she doesn't collect it. The nonoccurrence of the expected reinforcer (credit for the assignment) can act as a punisher; you are less likely to work as hard on the next assignment.

Just as the nonoccurrence of an expected reinforcer can act as a punisher, the nonoccurrence of an expected punisher can act as a reinforcer (Bandura, 1986). For example, students expect to be reprimanded (punished) for breaking rules, so if they break rules and aren't reprimanded, they are more likely to break rules in the future. The nonoccurrence of the expected punisher (the reprimand) acts as a reinforcer for the misbehavior.

The nonoccurrence of expected consequences is common in our everyday world. For example, if you send an e-mail to an acquaintance, you expect a reply, and receiving the reply is reinforcing. If the person doesn't reply, you're likely to stop sending e-mails to her. Sports fans buy season tickets to see their local team play, but if the team consistently loses, they're less likely to buy tickets in the future. Seeing the team win is reinforcing, and its nonoccurrence decreases fans' season-ticket-buying behavior.

Now, because modeling is central to social cognitive theory, we examine it in more detail in the following sections as we discuss:

- The outcomes of modeling
- The processes involved in learning from models
- The effectiveness of models

3.1 Teachers who do cooperative learning activities sometimes give all the students in the group the same grade. Research indicates that this practice is ineffective (Slavin, 1995). Using the information in this section, explain why the practice is ineffective.

3.2 Mike was taking chemistry from an instructor who only lectured and then assigned problems for practice. Mike found he often "drifted off" during class. Because he felt he wasn't learning, he managed (with the help of his parents) to get switched to Mr. Adams's class. "If he sees you aren't paying attention, he calls on you," Mike comments. "So, I don't sleep in his class, and I'm getting to where I really understand the stuff now." Explain how reciprocal causation is illustrated in this example.

3.3 Coach Jeffreys emphasizes hard but fair play with his soccer team. Seeing one of his players cut an opposing team member's legs out from under him, Coach Jeffreys benches the player, explaining to him (and the rest of the team) why he did so. He doesn't see another incident of this type of foul for the rest of the year. Explain why this occurred, including the role of expectations in your explanation.

3.4 Answer the third question we asked at the beginning of the chapter: "Why did he [Tim] change his study habits and sustain his efforts?"

To receive feedback for these questions, go to Appendix A.

Outcomes of Modeling

Modeling can result in behavioral change, but it can also affect the way we think and feel. We outline these influences in Figure 9.5 and discuss them in the sections that follow.

Learning New Behaviors. Through imitation, people can acquire abilities they didn't have before observing the model. Solving an algebra problem after seeing the teacher demonstrate a solution, making a new recipe after seeing it made on television, or learning to write a clear paragraph after seeing an exemplary one are all examples. Kelly's comment, "I'm trying to swing at a ball like the pros do, but I haven't been able to quite do it," indicates that she was attempting to learn a new behavior by watching players on television.

Facilitating Existing Behaviors. You're attending a concert, and at the end of one of the numbers, someone stands and begins to applaud. You, and others, join in to create a standing ovation. You already know how to stand and applaud, so you didn't learn a new behavior. Instead, observing the model facilitated your behavior.

This outcome is also illustrated in Tim's behavior. He practiced solving problems before quizzes but admitted, "I usually do a couple, and if I get them, I quit." After observing Susan,
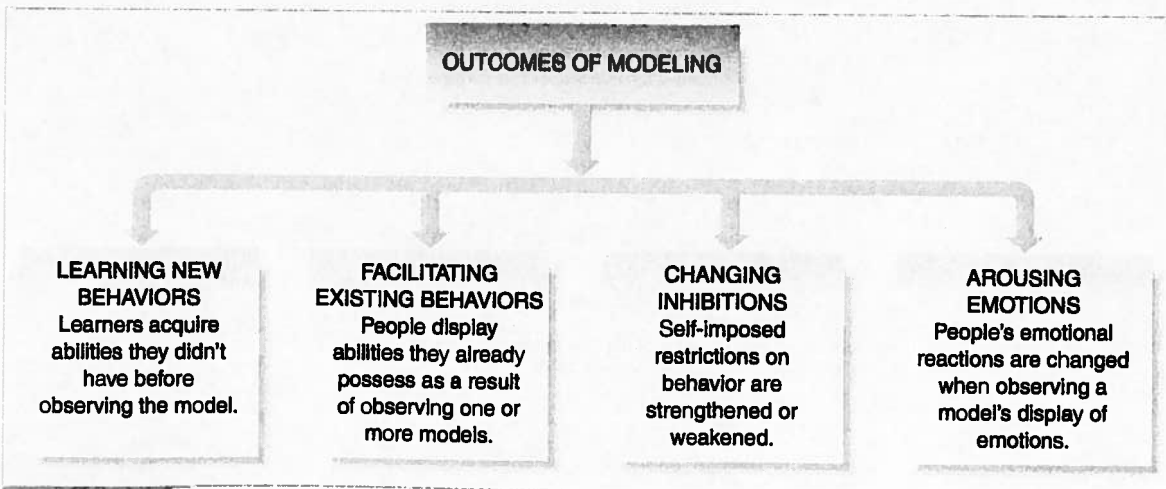
Figure 9.5 The outcomes of modeling

he changed the way he studied. Her approach to preparing for quizzes facilitated Tim's studying behavior.

Inhibition. A self-imposed restriction on one's behavior.

Changing Inhibitions. An **inhibition** is a self-imposed restriction on one's behavior, and observing a model and the consequences of the model's behavior can either strengthen or weaken it. Unlike actions that facilitate existing behaviors, changing inhibitions involves socially unacceptable behaviors, such as breaking classroom rules (Schunk et al., 2008).

For example, students are less likely to break a rule if one of their peers is reprimanded; their inhibition about breaking the rule has been strengthened. Jacob Kounin (1970), a pioneer researcher in the area of classroom management, called this phenomenon the *ripple effect*. On the other hand, if a student speaks without permission and isn't reprimanded, other students are more likely to do the same. The inhibition is weakened.

Vicarious learning and the nonoccurrence of expected consequences help explain changed inhibitions. For instance, if students see a peer reprimanded for breaking a rule, they are vicariously punished; they expect the same result if they break the rule, and their inhibition about breaking rules is strengthened. However, if the student is not reprimanded, the nonoccurrence of the expected punisher acts as a reinforcer, and both the student and the rest of the class are more likely to break the rule. Their inhibition about breaking rules has been weakened.

Arousing Emotions. Finally, a person's emotional reactions can be changed by observing a model's display of emotions. For example, observing the uneasiness of a diver on a high board may cause an observer to become more fearful of the board. On the other hand, observing teachers genuinely enjoying themselves as they discuss a topic can generate similar enthusiasm in students (Brophy, 2010).

Earlier, we said that modeling describes "behavioral, cognitive, and affective changes deriving from observing the actions of others," and these examples help us better understand why modeling is defined this way. For example, we see behavioral changes when behaviors are learned or facilitated, cognitive changes in strengthening or weakening inhibitions, and affective changes when emotions are aroused.

Processes Involved in Learning from Models

Four processes are involved in learning from models: *attention, retention, reproduction,* and *motivation* (Bandura, 1986). They're illustrated in Figure 9.6 and summarized as follows:
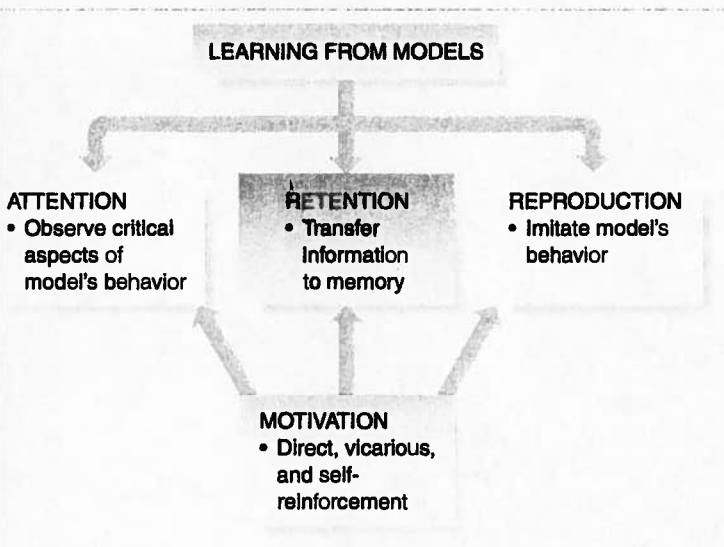
- *Attention:* A learner's attention is drawn to the essential aspects of the modeled behavior.
- *Retention:* The modeled behaviors are transferred to memory. Storing the modeled behavior allows the learner to reproduce it later.
- *Reproduction:* Learners reproduce the behaviors that they have stored in memory.
- *Motivation:* Learners are motivated by the expectation of reinforcement for reproducing the modeled behaviors.

With respect to these processes, three factors are important for us as teachers. First, to learn from models, learners' attention must be drawn to the essential aspects of the modeled behavior (Bandura, 1986). For example, preservice teachers often go into schools and observe veterans in action, but if

LEARNING FROM MODELS

ATTENTION
- Observe critical aspects of model's behavior

RETENTION
- Transfer Information to memory

REPRODUCTION
- Imitate model's behavior

MOTIVATION
- Direct, vicarious, and self-reinforcement

Figure 9.6 Processes involved in learning from models

they don't know what they're looking for, they miss essential aspects of effective teaching, and the observations aren't as valuable as they could be. As teachers, we need to call attention to the important aspects of each skill or process we're demonstrating.

Second, attending to the modeled behaviors and recording them in memory don't ensure that learners will be able to reproduce them. Additional scaffolding and practice with feedback are often required. (We examine this issue in more detail in our "Ed Psych and Teaching" feature titled "Using Social Cognitive Theory to Increase Your Students' Learning," later in the chapter.)

Third, although motivation appears as a separate component in Figure 9.6, it is integral to each of the other processes. Motivated learners are more likely to attend to a model's behavior, to remember it, and to reproduce it. This is illustrated by the arrows from "motivation" pointing to each of the other processes.

Perceived similarity is an important factor in a model's effectiveness.

Effectiveness of Models

The effectiveness of a model influences the likelihood that the behavioral, cognitive, or affective changes derived from observing models will occur. A model's effectiveness depends on three factors:

- Perceived similarity
- Perceived competence
- Perceived status

When we observe a model's behavior, we are more likely to imitate him if we perceive the model as similar to us. This helps us understand why presenting nontraditional career models and teaching students about the contributions of members of cultural minorities are important. Either gender can effectively demonstrate that engineering presents career opportunities, for example, but girls are more likely to believe that it is a viable career if they observe a female rather than a male engineer, just as boys are more likely to consider nursing as a potential career if they observe male rather than female nurses. Similarly, Hispanic students are more likely to believe they can accomplish challenging goals if they see the accomplishments of a successful Hispanic adult than one from another cultural group.

Perception of a model's competence, the second factor influencing a model's effectiveness, interacts with perceived similarity. People are more likely to imitate models they perceive to be competent, regardless of similarity. Tim believed Susan was competent because she was a successful student. Although Tim and Susan are similar—they are classmates—he wouldn't have imitated her study habits if she hadn't been successful.

Perceived status is the third factor. Status is acquired when individuals distinguish themselves from others in their fields, and people tend to imitate models they perceive as having high status, such as professional athletes, stars in entertainment, and world leaders. At the school level, athletes, cheerleaders, and in some cases even gang leaders have high status.

High-status models enjoy an additional benefit. They are often tacitly credited for competence outside their own areas of expertise. This is why you see professional athletes (instead of nutritionists) endorsing breakfast cereal, and actors (instead of engineers) endorsing automobiles and motor oil.

You will also be a high-status model for your students. Despite concerns expressed by educational reformers and teachers themselves, you will enjoy perceived status, particularly if you teach effectively and if your students believe you're fair and care about them.