The Social-Learning Approach

The social-learning approach to personality, represented here by the work of Albert Bandura, is an outgrowth of Skinner's behaviorist approach. Like Skinner, Bandura focuses on overt behavior rather than on needs, traits, drives, or defense mechanisms. Unlike Skinner, Bandura allows for internal cognitive variables that mediate between stimulus and response; you will recall that cognitive variables have no place in Skinner's system.

Bandura has investigated cognitive variables with a high degree of experimental sophistication and rigor, drawing inferences from careful observations of behavior in the laboratory. He observed the behavior of human subjects in social settings, whereas Skinner dealt with animal subjects in individual settings. Bandura agrees with Skinner that behavior is learned and that reinforcement is vital to learning, but he differs from Skinner in his interpretation of the nature of reinforcement.

Bandura and Skinner both attempted to understand personality through laboratory rather than clinical work, but their principles have been applied in the clinical setting through behavior-modification techniques. Because Bandura uses cognitive variables, his work reflects and reinforces the cognitive movement in psychology. His approach has also been called *cognitive-behavioral* in recognition of this emphasis.

chapter 13

Albert Bandura: Modeling Theory

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Virtually every phenomenon that occurs by direct experience can occur vicariously as well—by observing other people and the consequences for them.

—Albert Bandura

Bandura agrees with Skinner that behavior is learned, but with that point their similarity ends. Bandura criticized Skinner's emphasis on individual animal subjects rather than on human subjects interacting with one another. Bandura's approach is a social-learning theory that investigates behavior as it is formed and modified in a social context. He argues that we cannot expect data from experiments that involve no social interaction to be relevant to the everyday world, because few people truly function in social isolation.

Although Bandura, like Skinner, recognizes that much learning takes place as a result of reinforcement, he also stresses that virtually all forms of behavior can be learned without directly experiencing any reinforcement. Bandura's approach is

observational learning Learning new responses by observing the behavior of other people.

vicarious reinforcement Learning or strengthening a behavior by observing the behavior of others, and the consequences of that behavior, rather than experiencing the reinforcement or consequences directly.

also called **observational learning**, indicating the importance in the learning process of observing other people's behavior. Rather than experiencing reinforcement ourselves for each of our actions, we learn through **vicarious reinforcement** by observing the behavior of other people and the consequences of that behavior. This focus on learning by observation or example, rather than always by direct reinforcement, is a distinctive feature of Bandura's theory.

Another feature of Bandura's observational-learning approach is its treatment of internal cognitive or thought processes. Unlike Skinner, Bandura believes that cognitive processes can influence observational learning. We do not automatically imitate the behaviors we see other people displaying. Rather, we make a deliberate, conscious decision to behave in the same way. To learn through example and vicarious reinforcement we must be capable of anticipating and appreciating the consequences of the behaviors we observe. We can regulate and guide our behavior by visualizing or imagining those consequences, even though we have not experienced them ourselves. No direct link exists between stimulus and response or between behavior and reinforcer, as Skinner proposed. Instead, our cognitive processes mediate between the two.

Bandura presents a less extreme form of behaviorism than Skinner. He emphasizes the observation of others as a means of learning, and he considers learning to be mediated by cognitive processes. His theory is based on rigorous laboratory research with normal people in social interaction rather than a rat in a cage or a neurotic person on a couch.

The Life of Bandura (1925–)

Bandura was born in the province of Alberta, Canada, in a town so small that his high school had only two teachers and 20 students. His parents were immigrants from Poland who emphasized the value of education. "You have a choice," his mother had told him when he was young. "You can work in the field and get drunk in the beer parlor, or you might get an education" (quoted in Foster, 2007, p. 3).

During the summer following his graduation from high school, he took a construction job in the wilderness of the Yukon Territory, filling holes in the Alaska Highway. It was a unique experience for a bright, inquisitive young person.

> Finding himself in the midst of a curious collection of characters, most of whom had fled creditors, alimony, and probation officers, Bandura quickly developed a keen appreciation for the psychopathology of everyday life, which seemed to blossom in the austere tundra. (Distinguished Scientific Contribution Award, 1981, p. 28)

He attended the University of British Columbia in Vancouver as an undergraduate and took a course in psychology, only out of expediency. The carpool in which he commuted to the campus included engineering and pre-med students, all of whom had early-morning classes. Psychology was offered in that time period, so Bandura enrolled in the course. He found the material fascinating. He pursued his studies in the field, earning his Ph.D. in 1952 from the University of Iowa. After a year at the Wichita, Kansas, Guidance Center, he joined the faculty of Stanford University and has compiled an extensive record of publications. In 1973, he was elected president of the American Psychological

Association. In 1980 he received its Distinguished Scientific Contribution Award and in 2006 was presented with the American Psychological Foundation's Gold Medal Award for Life Achievement.

Bandura's sense of humor has often been directed at himself. When asked whether he walked to his office or drove his car, he said, "Both, sometimes in the same day." Having driven to work, he would be so absorbed in his ideas that he would absentmindedly walk home, leaving his car in the university parking lot.

Log On

The Life and Work of Albert Bandura

Material on Bandura's life, research, and theories plus access to some of his publications, including overheads and other images.

Modeling: The Basis of Observational Learning

Bandura's basic idea is that learning can occur through observation or example rather than solely by direct reinforcement. Bandura does not deny the importance of direct reinforcement as a way to influence behavior, but he challenges the notion that behavior can be learned or changed only through direct reinforcement. He argues that operant conditioning, in which trial-and-error behavior continues until the person happens upon the correct response, is an inefficient and potentially dangerous way to learn skills such as swimming or driving. A person could drown or crash before finding the correct sequence of behaviors that brings positive reinforcement. To Bandura, most human behavior is learned through example, either intentionally or accidentally. We learn a wide and varied range of behaviors in our daily lives by observing other people and patterning our behavior after theirs (see Gaskins & Paradise, 2010).

Bobo Doll Studies

modeling A behavior modification technique that involves observing the behavior of others (the models) and participating with them in performing the desired behavior.

Through **modeling**, by observing the behavior of a model and repeating the behavior ourselves, it is possible to acquire responses that we have never performed or displayed previously and to strengthen or weaken existing responses. Bandura's now-classic demonstration of modeling involves the Bobo doll, an inflatable plastic figure 3 to 4 feet tall (Bandura, Ross, & Ross, 1963).

The subjects in the initial studies were preschool children who watched an adult hit and kick Bobo. While attacking the doll, the adult model shouted, "Sock him in the nose!" and "Throw him in the air!" When the children were left alone with the doll, they modeled their behavior after the example they had just witnessed. Their behavior was compared with that of a control group of children who had not seen the model attack the Bobo doll. The experimental group was found to be twice as aggressive as the control group.

The intensity of the aggressive behavior remained the same in the experimental subjects whether the model was seen live, on television, or as a cartoon character. The effect of the model in all three media was to elicit aggressive behavior, actions that were not displayed with the same strength by children who had not observed the models.

Courtesy of Dr. Albert Bandura, Stanford University

In the Bobo doll studies, children exhibited aggressive behavior after observing an aggressive model.

Other Modeling Studies

In additional research on the impact of modeling on learning, Bandura compared the behavior of parents of two groups of children (Bandura & Walters, 1963). One group consisted of highly aggressive children, the other of more inhibited children. According to Bandura's theory, the children's behavior should reflect their parents' behavior. The research showed that the parents of the inhibited children were inhibited, and the parents of the aggressive children were aggressive.

Verbal modeling can induce certain behaviors, as long as the activities involved are fully and adequately explained. Verbal modeling is often used to provide instructions, a technique applicable to teaching such skills as driving a car. Verbal instructions are usually supplemented by behavioral demonstrations, such as when a driving instructor serves as a model performing the behaviors involved in driving.

Disinhibition

disinhibition The weakening of inhibitions or constraints by observing the behavior of a model.

Research has shown that behaviors a person usually suppresses or inhibits may be performed more readily under the influence of a model (Bandura, 1973, 1986). This phenomenon, called **disinhibition**, refers to the weakening of an inhibition or restraint through exposure to a model. For example, people in a crowd may start a riot, breaking windows and shouting, exhibiting physical and verbal behaviors they would never perform when alone. They are more likely to discard their inhibitions against aggressive behavior if they see other people doing so.

The disinhibition phenomenon can influence sexual behavior. In an experiment that demonstrated how sexual responses could be disinhibited by models, a group of male undergraduate college students was shown a film that contained erotic pictures of nude males and females (Walters, Bowen, & Parke, 1963). The students were told that a spot

of light would move over the film, indicating the eye movements of a previous subject, to show what parts of the pictures that subject looked at. These alleged eye movements of the previous subject represented the model. For half the subjects, the spot of light concentrated on breasts and genitals. For the other half, the light stayed in the background, as though the model had avoided looking at the naked bodies.

After watching the film, the students were shown stills from the movie while their eye movements were recorded. Those subjects whose model was considered uninhibited (who had looked directly at the erotic parts of the bodies) behaved similarly. Those whose model had avoided looking at the nudes spent significantly more time examining the background of the pictures. The researchers concluded that modeling affected the subjects' perceptual responses to the stimuli. In other words, modeling determined not only what the subjects did but also what they looked at and perceived.

Posting comments online following the example or model of others offers the same anonymity as being in a large crowd. This can lead to an online form of the disinhibition effect known as trolling—the posting of inflammatory, derogatory, or hateful messages about an individual or a group. Some adolescents have been driven to suicide by the cruel and widespread comments directed at them by name (Zhuo, 2010). The good news is that the disinhibition effect seems to decline with age. A study of young Americans ages 18 to 25 showed that disinhibition was strong among the 18- to 19-year olds but greatly reduced among the 22- to 25-year olds (Vaidya, Latzman, Markon & Watson, 2010).

The Effects of Society's Models

On the basis of extensive research, Bandura concluded that much behavior—good and bad, normal and abnormal—is learned by imitating the behavior of other people. From infancy on, we develop responses to the models society offers us. Beginning with parents as models, we learn their language and become socialized by the culture's customs and acceptable behaviors. People who deviate from cultural norms have learned their behavior the same way as everyone else. The difference is that deviant persons have followed models the rest of society considers undesirable.

Bandura is an outspoken critic of the type of society that provides the wrong models for its children, particularly the examples of violent behavior that are standard fare on television and in movies and video games. His research clearly shows the effect of models on behavior. If what we see is what we become, then the distance between watching an aggressive animated character and committing a violent act ourselves is not very great.

Among the many behaviors children acquire through modeling are non-rational fears. A child who sees that his or her parents are fearful during thunderstorms or are nervous around strangers will easily adopt these anxieties and carry them into adulthood with little awareness of their origin. Of course, positive behaviors such as strength, courage, and optimism will also be learned from parents and other models. In Skinner's system, reinforcers control behavior; for Bandura, it is the models who control behavior.

Characteristics of the Modeling Situation

Bandura and his associates (Bandura, 1977, 1986) investigated three factors found to influence modeling: the characteristics of the models, the characteristics of the observers, and the reward consequences associated with the behaviors.

Characteristics of the models The characteristics of the models affect our tendency to imitate them. In real life, we may be more influenced by someone who appears to be similar to us than by someone who differs from us in obvious and significant ways. In the laboratory, Bandura found that although children imitated the behavior of a child

model in the same room, a child in a film, and a filmed cartoon character, the extent of the modeling decreased as the similarity between the model and the subject decreased. The children showed greater imitation of a live model than an animated character, but even in the latter instance the modeled behavior was significantly greater than that of the control group that observed no models.

Other characteristics of the model that affect imitation are age and sex. We are more likely to model our behavior after a person of the same sex than a person of the opposite sex. Also, we are more likely to be influenced by models our own age. Peers who appear to have successfully solved the problems we are facing are highly influential models.

Status and prestige are also important factors. It was found that pedestrians were much more likely to cross a street against a red light if they saw a well-dressed person crossing than if they saw a poorly dressed person crossing. Television commercials make effective use of high-status, high-prestige models with athletes or celebrities who claim to use a particular product. The expectation is that consumers will imitate their behavior and buy the advertised product.

The type of behavior the model performs affects the extent of imitation. Highly complex behaviors are not imitated as quickly and readily as simpler behaviors. Hostile and aggressive behaviors tend to be strongly imitated, especially by children. The size and weight of a model can also influence behavior. A study of 9th- and 10th-grade students in Canada found that those who attended a school where the older students tended to be overweight, even obese, gained more weight than students who attended a school where the older students were not overweight (Leatherdale & Papadakis, 2011).

Characteristics of the observers The attributes of the observers also determine the effectiveness of observational learning. People who are low in self-confidence and self-esteem are much more likely to imitate a model's behavior than are people high in self-confidence and self-esteem. A person who has been reinforced for imitating a behavior—for example, a child rewarded for behaving like an older sibling—is more susceptible to the influence of models.

Ariel Skelley/CORBIS

Children tend to imitate the behavior of an adult model of the same sex who is considered high in status.

The reward consequences associated with the behaviors The reward consequences linked to a particular behavior can affect the extent of the modeling and even override the impact of the models' and observers' characteristics. A high-status model may lead us to imitate a certain behavior, but if the rewards are not meaningful to us, we will discontinue the behavior and be less likely to be influenced by that model in the future.

Seeing a model being rewarded or punished for displaying a particular behavior affects imitation. In a Bobo doll study, some of the children watched as the model who hit the Bobo doll was given praise and a soda and candy. Another group of children saw the model receive verbal and physical punishment for the same aggressive behavior. The children who observed the punishment displayed significantly less aggression toward the Bobo doll than did the children who saw the model being reinforced (Bandura, 1965).

The Processes of Observational Learning

Bandura analyzed the nature of observational learning and found it to be governed by four related mechanisms: attentional processes, retention processes, production processes, and incentive and motivational processes (see Table 13-1).

Attentional Processes

Observational learning or modeling will not occur unless the subject pays attention to the model. Merely exposing the subject to the model does not guarantee that the subject will be attentive to the relevant cues and stimulus events or even perceive the situation accurately. The subject must perceive the model accurately enough to acquire the information necessary to imitate the model's behavior.

Several variables influence attentional processes. In the real world, as in the laboratory, we are more attentive and responsive to some people and situations than to others.

Table-13-1 Observational learning processes

Attentional processes	Developing our cognitive processes and perceptual skills so that we can pay sufficient attention to a model, and perceiving the model accurately enough, to imitate displayed behavior. Example: Staying awake during driver's education class.
Retention processes	Retaining or remembering the model's behavior so that we can imitate or repeat it at a later time; for this, we use our cognitive processes to encode or form mental images and verbal descriptions of the model's behavior. Example: Taking notes on the lecture material or the video of a person driving a car.
Production processes	Translating the mental images or verbal symbolic representations of the model's behavior into our own overt behavior by physically producing the responses and receiving feedback on the accuracy of our continued practice. Example: Getting in a car with an instructor to practice shifting gears and dodging the traffic cones in the school parking lot.
Incentive and motivational processes	Perceiving that the model's behavior leads to a reward and thus expecting that our learning—and successful performance—of the same behavior will lead to similar consequences. Example: Expecting that when we have mastered driving skills, we will pass the state test and receive a driver's license.

Thus, the more closely we pay attention to a model's behavior, the more likely we are to imitate it.

We mentioned such characteristics as age, status, sex, and the degree of similarity between model and subject. These factors help determine how closely a subject attends to the model. It has also been found that celebrity models, experts, and those who appear confident and attractive command greater attention and imitation than models who lack these attributes. Some of the most effective models in American culture today appear on television, YouTube, and other online sites. Viewers often focus on them even in the absence of reinforcement.

Attention to modeled behavior varies as a function of the observers' cognitive and perceptual skills and the value of the behavior being modeled. The more highly developed are our cognitive abilities and the more knowledge we have about the behavior being modeled, the more carefully we will attend to the model and perceive the behavior. When observers watch a model doing something they expect to do themselves, they pay greater attention than when the modeled behavior has no personal relevance. Observers also pay closer attention to modeled behavior that produces positive or negative consequences rather than neutral outcomes.

Retention Processes

We must be able to remember significant aspects of the model's behavior in order to repeat it later. To retain what has been attended to, we must encode it and represent it symbolically. We retain information about a model's behavior in two ways: through an imaginal internal representational system or through a verbal system. In the imaginal system, we form vivid, easily retrievable images while we are observing the model. This common phenomenon accounts for your being able to summon up a picture of the person you dated last week or the place you visited last summer. In observational learning, we form a mental picture of the model's behavior and use it as a basis for imitation at some future time.

The verbal representational system operates similarly and involves a verbal coding of some behavior we have observed. For example, during observation we might describe to ourselves what the model is doing. These descriptions or codes can be rehearsed silently, without overtly displaying the behavior. For example, we might talk ourselves through the steps in a complicated skill, mentally rehearsing the sequence of behaviors we will perform later. When we wish to perform the action, the verbal code will provide hints, reminders, and cues. Together, these images and verbal symbols offer the means by which we store observed situations and rehearse them for later performance.

Production Processes

Translating imaginal and verbal symbolic representations into overt behavior requires the production processes, described more simply as practice. Although we may have attended to, retained, and rehearsed symbolic representations of a model's behavior, we still may not be able to perform the behavior correctly. This is most likely to occur with highly skilled actions that require the mastery of many component behaviors.

Consider learning to drive a car. We learn fundamental motions from watching a model drive. We may consider the symbolic representations of the model's behavior many times, but at first our translation of these symbols into actual driving behavior will be clumsy. We may apply the brakes too soon or too late or overcorrect the steering. Our observations may not have been sufficient to ensure immediate and skilled performance of the actions. Practice of the proper physical movements, and feedback on their accuracy, is needed to produce the smooth performance of the behavior.

Incentive and Motivational Processes

No matter how well we attend to and retain behaviors we observe or how much ability we have to perform them, we will not do so without the incentive or motivation processes. When incentives are available, observation is more quickly translated into action. Incentives also influence the attentional and retention processes. We may not pay as much attention without an incentive to do so, and when less attention is paid, there is less to retain.

Our incentive to learn is influenced by our anticipation of the reinforcement or punishment for doing so. Seeing that a model's behavior produces a reward or avoids a punishment can be a strong incentive for us to pay attention to, remember, and perform a behavior correctly. The reinforcement is experienced vicariously during our observation of the model, after which we expect our performance of the same behavior to lead to the consequences we saw.

Bandura pointed out that although reinforcement can facilitate learning, reinforcement is not required for learning to occur. Many factors other than the reward consequences of the behavior determine what we attend to, retain, and rehearse. For example, loud sounds, bright lights, and exciting videos may capture our interest even though we may not have received any reinforcement for paying attention to them. Bandura's research showed that children watching a model on television or in a video game imitate the model's behavior regardless of whether they have been promised a reward. Therefore, reinforcement can assist in modeling but is not vital to it. When reinforcement occurs, it can be given by another person, experienced vicariously, or administered by oneself.

Self-Reinforcement and Self-Efficacy

In Bandura's approach to personality, the self is not some psychic agent that determines or causes behavior. Rather, the self is a set of cognitive processes and structures concerned with thought and perception. Two important aspects of the self are self-reinforcement and self-efficacy.

Self-Reinforcement

self-reinforcement Administering rewards or punishments to oneself for meeting, exceeding, or falling short of one's own expectations or standards.

Self-reinforcement is as important as reinforcement administered by others, particularly for older children and adults. We set personal standards of behavior and achievement. We reward ourselves for meeting or exceeding these expectations and standards and we punish ourselves for our failures. Self-administered reinforcement can be tangible such as a new pair of gym shoes or a car, or it can be emotional such as pride or satisfaction from a job well done. Self-administered punishment can be expressed in shame, guilt, or depression about not behaving the way we wanted to. Self-reinforcement appears conceptually similar to what other theorists call *conscience* or superego, but Bandura denies that it is the same.

A continuing process of self-reinforcement regulates much of our behavior. It requires internal standards of performance, subjective criteria or reference points against which we evaluate our behavior. Our past behavior may become a reference point for evaluating present behavior and an incentive for better performance in the future. When we reach a certain level of achievement, it may no longer challenge, motivate, or satisfy us, so we raise the standard and require more of ourselves. Failure to achieve may result in lowering the standard to a more realistic level.

People who set unrealistic performance standards—who observed and learned behavioral expectations from unusually talented and successful models—may continue to try to meet those excessively high expectations despite repeated failures. Emotionally, they

may punish themselves with feelings of worthlessness and depression. These self-produced feelings can lead to self-destructive behaviors such as alcohol and drug abuse or a retreat into a fantasy world.

We learn our initial set of internal standards from the behavior of models, typically our parents and teachers. Once we adopt a given style of behavior, we begin a lifelong process of comparing our behavior with theirs.

Self-Efficacy, or "Believing You Can"

self-efficacy Our feeling of adequacy, efficiency, and competence in coping with life.

How well we meet our behavioral standards determines our **self-efficacy**. In Bandura's system, *self-efficacy* refers to feelings of adequacy, efficiency, and competence in coping with life. Meeting and maintaining our performance standards enhances self-efficacy; failure to meet and maintain them reduces it.

Another way Bandura described self-efficacy was in terms of our perception of the control we have over our life.

> People strive to exercise control over events that affect their lives. By exerting influence in spheres over which they can command some control, they are better able to realize desired futures and to forestall undesired ones. The striving for control over life circumstances permeates almost everything people do because it can secure them innumerable personal and social benefits. The ability to affect outcomes makes them predictable. Predictability fosters adaptive preparedness. Inability to exert influence over things that adversely affect one's life breeds apprehension, apathy, or despair. (Bandura, 1995, p. 1)

People low in self-efficacy feel helpless, unable to exercise control over life events. They believe any effort they make is futile. When they encounter obstacles, they quickly give up if their initial attempt to deal with a problem is ineffective. People who are extremely low in self-efficacy will not even attempt to cope because they are convinced that nothing they do will make a difference. Why, they ask, should they even try? Low self-efficacy can destroy motivation, lower aspirations, interfere with cognitive abilities, and adversely affect physical health.

People high in self-efficacy believe they can deal effectively with events and situations. Because they expect to succeed in overcoming obstacles, they persevere at tasks and often perform at a high level. These people have greater confidence in their abilities than do persons low in self-efficacy, and they express little self-doubt. They view difficulties as challenges instead of threats and actively seek novel situations. High self-efficacy reduces fear of failure, raises aspirations, and improves problem solving and analytical thinking abilities.

One researcher defined self-efficacy quite simply and effectively as the "power of believing you can," and added that "believing that you can accomplish what you want to accomplish is one of the most important ingredients … in the recipe for success" (Maddux, 2002, p. 277). Thus, believing that you have the ability to be successful becomes a powerful asset as you strive for achievement.

Sources of information about self-efficacy Our judgment about our self-efficacy is based on four sources of information: performance attainment, vicarious experiences, verbal persuasion, and physiological and emotional arousal.

The most influential source of efficacy judgments is *performance attainment*. Previous success experiences provide direct indications of our level of mastery and competence. Prior achievements demonstrate our capabilities and strengthen our feelings of self-efficacy. Prior failures, particularly repeated failures in childhood, lower self-efficacy.

An important indicator of performance attainment is receiving feedback on one's progress or one's performance on a task, such as a work assignment or a college examination. One study of college students performing complicated puzzles found that those who received positive feedback on their performance reported higher levels of perceived competence at that task than did those who received negative feedback (Elliot et al., 2000).

A study of older adults showed that those who completed a six-month training program in the Chinese art of Tai Chi reported significant increases in self-efficacy as compared to those who did not undertake the training (Li, McAuley, Harmer, Duncan, & Chaumeton, 2001). Similar results were obtained in a study of female college students who completed a 16-hour physical self-defense training course. These students showed significantly higher levels of self-efficacy in a variety of areas including physical competence, general coping skills, and interpersonal assertiveness. A control group that had not taken the self-defense course showed no change in self-efficacy (Weitlauf, Cervone, Smith, & Wright, 2001). Thus, put simply, the more we achieve, the more we believe we can achieve, and the more competent and in control we feel.

Vicarious experiences—seeing other people perform successfully—strengthen self-efficacy, particularly if the people we observe are similar in abilities. In effect, we are saying, "If they can do it, so can I." In contrast, seeing others fail can lower self-efficacy: "If they can't do it, neither can I." Therefore, effective models are vital in influencing our feelings of adequacy and competence. These models also show us appropriate strategies for dealing with difficult situations.

Verbal persuasion, which means reminding people that they possess the ability to achieve whatever they want to achieve, can enhance self-efficacy. This may be the most common of the four informational sources and one frequently offered by parents, teachers, spouses, coaches, friends, and therapists who say, in effect, "You can do it." To be effective, verbal persuasion must be realistic. It is probably not the best advice to encourage someone 5 feet tall to play professional basketball when other sports, such as martial arts, might be more appropriate.

A fourth source of information about self-efficacy is *physiological and emotional arousal*. How fearful or calm do we feel in a stressful situation? We often use this type of information as a basis for judging our ability to cope. We are more likely to believe we will master a problem successfully if we are not agitated, tense, or bothered by headaches. The more composed we feel, the greater our self-efficacy. Whereas the higher our level of physiological and emotional arousal, the lower our self-efficacy. The more fear, anxiety, or tension we experience in a given situation, the less we feel able to cope.

Bandura concluded that certain conditions increase self-efficacy:

1. Exposing people to success experiences by arranging reachable goals increases performance attainment.
2. Exposing people to appropriate models who perform successfully enhances vicarious success experiences.
3. Providing verbal persuasion encourages people to believe they have the ability to perform successfully.
4. Strengthening physiological arousal through proper diet, stress reduction, and exercise programs increases strength, stamina, and the ability to cope.

In his research, Bandura applied these conditions to enhance self-efficacy in a variety of situations. He has helped subjects learn to play musical instruments, relate better to persons of the opposite sex, master computer skills, give up cigarette smoking, and conquer phobias and physical pain.

Log On

Self-Efficacy Research

A wealth of information about self-efficacy including the latest research findings, books, articles, and tests to measure your own level of self-efficacy.

Self-Efficacy Test

A 10-item scale to measure self-efficacy developed by psychologists at the Free University of Berlin, Germany. It has been used with thousands of subjects and is available in 29 languages.

Developmental Stages of Modeling and Self-Efficacy

Childhood

In infancy, modeling is limited to immediate imitation. Infants have not yet developed the cognitive capacities (the imaginal and verbal representational systems) needed to imitate a model's behavior some time after observing it. In infancy, it is necessary for the modeled behavior to be repeated several times after the infant's initial attempt to duplicate it. Also, the modeled behavior must be within the infant's range of sensorimotor development. By about age 2, children have developed sufficient attentional, retention, and production processes to begin imitating behavior some time after the observation rather than immediately.

The behaviors we find reinforcing, and thus choose to imitate, will change with age. Younger children are reinforced primarily by physical stimuli such as food, affection, or punishment. Older children associate positive physical reinforcers with signs of approval from significant models and unpleasant reinforcers with signs of disapproval. Eventually these rewards or punishments become self-administered.

Self-efficacy also develops gradually. Infants begin to develop self-efficacy as they attempt to exercise greater influence over their physical and social environments. They learn about the consequences of their own abilities such as their physical prowess, social skills, and language competence. These abilities are in almost constant use acting on the environment, primarily through their effects on parents. Ideally, parents are responsive to their growing child's activities and attempts to communicate, and will provide stimulating surroundings that permit the child the freedom to grow and explore.

These early efficacy-building experiences are centered on the parents. Parental behaviors that lead to high self-efficacy in children differ for boys and girls. Studies have shown that high self-efficacy men had, when they were children, warm relationships with their fathers. Mothers were more demanding than fathers, expecting higher levels of performance and achievement. In contrast, high self-efficacy women experienced, as children, pressure from their fathers for high achievement (Schneewind, 1995).

The significance of parental influence diminishes as the child's world expands and admits additional models such as siblings, peers, and other adults. Like Adler, Bandura considered birth order within the family to be important. He argued that first-born children and only children have different bases for judging their own abilities than do later-born children. Also, siblings of the same sex are likely to be more competitive than are siblings of the opposite sex, a factor also related to the development of self-efficacy. Among playmates, children who are the most experienced and successful at tasks and

games serve as high-efficacy models for other children. Peers provide comparative reference points for appraising one's own level of achievement.

Teachers influence self-efficacy judgments through their impact on the development of cognitive abilities and problem-solving skills, which are vital to efficient adult functioning. Children often rate their own competence in terms of their teachers' evaluations of them. In Bandura's view, schools that use ability groupings undermine self-efficacy and self-confidence in students who are assigned to the lower groups. Competitive practices such as grading on a curve also doom poor achievers to average or low grades.

Adolescence

The transitional experiences of adolescence involve coping with new demands and pressures, from a growing awareness of sex to the choice of college and career. Adolescents must establish new competencies and appraisals of their abilities. Bandura noted that the success of this stage typically depends on the level of self-efficacy established during the childhood years.

Adulthood

Bandura divided adulthood into two periods: young adulthood and the middle years. Young adulthood involves adjustments such as marriage, parenthood, and trying to establish a career. High self-efficacy is necessary for successful outcomes of these experiences. People low in self-efficacy will not be able to deal adequately with these situations and are likely to fail to adjust.

Studies show that women who feel high in self-efficacy about their parenting skills are likely to promote self-efficacy in their children. Women who believe they are good parents are less subject to despondency and emotional strain in their role as a parent than are women low in self-efficacy (Olioff & Aboud, 1991; Teti & Gelfand, 1991). High self-efficacy mothers who worked outside the home experienced significantly less physical and emotional strain from work–family conflicts than did women low in self-efficacy (Bandura, 1995).

The middle years of adulthood are also stressful as people reevaluate their careers and their family and social lives. As we confront our limitations and redefine our goals, we must reassess our skills and find new opportunities for enhancing our self-efficacy.

Old Age

Self-efficacy reassessments in old age are difficult. Declining mental and physical abilities, retirement from active work, and withdrawal from social life may force a new round of self-appraisal. A lowering of self-efficacy can further affect physical and mental functioning in a kind of self-fulfilling prophecy. For example, reduced self-confidence about sexual performance can lead to a reduction in sexual activity. Lower physical efficacy can lead to fatigue and a curtailing of physical activities. If we no longer believe we can do something we used to enjoy and do well, then we may not even try. To Bandura, self-efficacy is the crucial factor in determining success or failure throughout the entire life span.

Behavior Modification

Bandura's goal in developing his social-cognitive theory was to modify or change those learned behaviors that society considers undesirable or abnormal. Like Skinner's approach to therapy, Bandura's focuses on external aspects, those inappropriate or destructive behaviors, in the belief that they are learned, just as all behaviors are learned.

Bandura does not attempt to deal with underlying unconscious conflicts. It is the behavior or symptom, rather than any presumed internal neurosis that is the target of the social-learning approach.

Fears and Phobias

If modeling is the way we learn our behaviors originally, then it should also be an effective way to relearn or change behavior. Bandura applied modeling techniques to eliminate fears and other intense emotional reactions. In one early study, children who were afraid of dogs observed a child of the same age playing with a dog (Bandura, Grusec, & Menlove, 1967). While the subjects watched from a safe distance, the model made progressively bolder movements toward the dog. The model petted the dog through the bars of a playpen, then went inside the pen and played with the dog. The observers' fear of dogs was considerably reduced as a result of this observational learning situation.

In the classic study of snake phobia, Bandura and his associates eliminated an intense fear of snakes in adults (Bandura, Blanchard, & Ritter, 1969). The subjects watched a film in which children, adolescents, and adults made progressively closer contact with a snake. At first, the filmed models handled plastic snakes, then touched live snakes, and finally let a large snake crawl over their body. The phobic subjects were allowed to stop the film whenever the scenes became too threatening. Gradually, their fear of snakes was overcome.

A technique called *guided participation* involves watching a live model and then participating with the model. For example, to treat a snake phobia, subjects watch through an observation window while a live model handles a snake. The subjects enter the room with the model and observe the handling of the snake at close range. Wearing gloves, subjects are coaxed into touching the middle of the snake while the model holds the head and tail. Subjects eventually come to touch the snake without gloves.

Modeling has been shown to be effective even in the absence of an observable model. In *covert modeling*, subjects are instructed to imagine a model coping with a feared or threatening situation; they do not actually see a model. Covert modeling has been used to treat snake phobias and social inhibitions.

You may not think that a fear of snakes is so terrible, but overcoming this fear has brought about significant changes in many people's lives, even for those who never encounter snakes. In addition to bolstering self-esteem and self-efficacy, eliminating a snake phobia can alter personal and work habits. One subject after modeling therapy was able to wear a necklace for the first time; previously she had not been able to do so because necklaces reminded her of snakes. A realtor treated successfully for snake phobia was able to increase his income because he no longer feared visiting properties in rural areas. Many other phobics treated by modeling therapy were freed from nightmares about snakes.

Phobias restrict our daily life. For example, many people who fear spiders react with rapid heartbeat, shortness of breath, and vomiting even from seeing a picture of a spider. Phobics doubt their self-efficacy in these fear-provoking situations and have little confidence in their ability to deal with the source of the phobia. To relieve people of these fears expands their environment and increases their self-efficacy.

Modeling therapy, particularly using video techniques, offers several practical advantages. Complex behaviors can be seen as a whole. Extraneous behaviors can be edited out so that the subject's time is spent viewing only relevant behaviors. Films can be repeated with many patients and used by several therapists simultaneously. Modeling techniques can also be used with groups, saving time and money in treating people with the same problem. This approach has been effective with phobias, obsessive-compulsive disorders, and sexual dysfunction, and the positive effects have been reported to last for years.

Considerable research has been conducted on self-efficacy during and after behavior modification therapy. The results have shown that as the subjects' self-efficacy improved during treatment, they were increasingly able to deal with the source of the fear. It was the therapeutic procedure itself that enhanced self-efficacy.

Anxiety

We noted that many behaviors can be modified through the modeling approach. We will consider two instances: fear of medical treatment and test anxiety.

Fear of medical treatment Some people have such an intense fear of medical situations that they are prevented from seeking treatment. One early study dealt with children who were scheduled for surgery and had never been in a hospital before. They were divided into two groups: an experimental group that watched a film about a boy's experience in the hospital and a control group that saw a film about a boy taking a trip (Melamed & Siegel, 1975). The child in the hospital film was an exemplary model. Despite some initial anxiety, he coped well with the doctors and the medical procedures.

The children's anxiety was assessed by several techniques including direct observation of behavior, responses on self-report inventories, and physiological measures. These assessments were made the night before surgery and were repeated a few weeks later. The results showed that the modeling film had been effective in reducing anxiety. Subjects who had seen the hospital film had fewer behavior problems after hospitalization than did those in the control group.

Similar procedures have been used to reduce fear of hospitalization in adults as well as fear of dental treatment. One study involved a medical procedure considered so stressful that more than 80 percent of patients initially refused to undergo it or quit it prematurely (Allen, Danforth, & Drabman, 1989). Subjects who watched a video of a model having the procedure and describing how he coped with his distress were more likely to complete the treatment with less anxiety and a shorter hospital stay.

Test anxiety For some college students, test anxiety is so serious that their examination performance does not accurately reflect their knowledge of the material being tested. In the classic research, a sample of college students was divided into groups based on their personality test scores: those high in test anxiety and those low in test anxiety (Sarason, 1975).

Some of the students saw a filmed model talking about her anxiety when taking tests and her ways of dealing with it. Other students saw a film of the same model who talked about test anxiety but not about coping mechanisms. Under a third condition, students watched the filmed model talking about other college activities.

Then the subjects were given a list of nonsense syllables to memorize and were tested on their ability to recall them. The results showed that subjects high in test anxiety were most strongly affected by the model who talked about coping mechanisms. They performed significantly better on the recall test than did high-anxiety subjects who had been exposed to the other two conditions.

Ethical Issues in Behavior Modification

Although the results of behavior modification are impressive, the techniques have drawn criticism from educators, politicians, and even psychologists. They have suggested that behavior modification exploits people, manipulating and controlling them against their will. Bandura argues that these charges are misleading. Behavior modification does not occur without the client's awareness. Indeed, self-awareness and self-regulation are vital for the effectiveness of any program to change or relearn behaviors. In other words,

behavior-modification techniques will not be successful unless the person is able to understand what behaviors are being reinforced.

Further, the clients themselves decide what they want to change; they are not being controlled by anyone else. People come to a therapist to eliminate specific fears and anxieties that inhibit their ability to function or to cope with daily life. Bandura notes that the client–therapist relationship is a contract between two consenting individuals, not a relationship between a sinister master-controller and a spineless puppet.

Bandura also explained that far from manipulating or enslaving, modeling techniques actually increase personal freedom. People who are afraid to leave the house or who have a compulsion to wash their hands continually are not truly free. They are living within the constraints imposed by their phobic or compulsive behavior. Those constraints allow little choice. Removing the constraints through behavior-modification techniques can increase freedom and the opportunity for personal growth.

Many such techniques have derived from Bandura's work and are popular alternatives to psychoanalysis and other therapeutic approaches.

Questions about Human Nature

Bandura's position is clear on the issue of free will versus determinism. Behavior is controlled by the person through the cognitive processes, and by the environment through external social situations. Bandura calls this view **reciprocal determinism**. He noted that people are neither "powerless objects controlled by environmental forces nor free agents who can become whatever they choose. Both people and their environments are reciprocal determinants of each other" (1977, p. vii). He later introduced the notion of **triadic reciprocality**, in which three factors—behavior, cognitive processes, and environmental variables—interact (Bandura, 1986).

reciprocal determinism The idea that behavior is controlled or determined by the individual, through cognitive processes, and by the environment, through external social stimulus events.

triadic reciprocality The idea that behavior is determined through the interaction of behavioral, cognitive, and environmental or situational variables.

Although human behavior is influenced by external social and environmental forces, we are not helpless with respect to them. Our reactions to stimuli are self-activated in accordance with our learned expectations. Following Bandura's rules for observational learning, we observe and interpret the potential effects of our actions and determine which behaviors are appropriate for a given situation. We encode and represent these external events symbolically and anticipate that a certain behavior will bring a certain response. Thus, we choose and shape our behavior to gain reinforcement and avoid punishment.

This viewpoint accepts self-awareness, self-reinforcement, and other internal forms of the regulation of behavior. Reinforcement does not automatically change behavior. When it does effect a change, it is usually because the individual is aware of what is being reinforced and expects the same reward for behaving that way again. Some degree of self-direction interacts with past and present events. Thus, we are influenced by external forces and in turn guide the extent and direction of such influences. The notion of self-direction of behavior represents an optimistic view of human nature. Bandura believes that individuals create their own environments. He suggests that abnormal behaviors, which he sees as little more than bad habits, can be changed by behavior modification techniques.

On the nature–nurture issue, Bandura proposes that most behaviors (except basic reflexes) are learned and that genetic factors play a minor role. However, he recognizes that hereditary factors such as body type, physical maturation, and appearance can influence the reinforcers people receive, particularly in childhood. For example, clumsy, unattractive children will receive different reinforcers than children who are graceful and attractive.

Childhood experiences are important in Bandura's theory. Childhood learning may be more influential than learning in adulthood. Our internal performance standards, which

affect our self-efficacy, are established in childhood, along with a set of ideal behaviors. However, childhood experiences can be unlearned later in life, and new performance standards and behaviors may be substituted. We are not captives of the reinforcers we received in our early years. Because at least some behavior results from experience, it may be inferred that Bandura accepts the uniqueness of personality. Also, our ultimate and necessary goal in life is to set realistic performance standards to maintain an adequate level of self-efficacy.

Assessment in Bandura's Theory

Like Skinner, Bandura focuses on behavior rather than on internal motivating variables. He did not use assessment measures such as free association, dream analysis, or projective techniques. Unlike Skinner, Bandura accepted the operation of cognitive variables. It is these cognitive variables, as well as behavior, that can be assessed.

For example, in the modeling study we described involving children about to undergo surgery, assessment techniques included direct observation, self-report inventories, and physiological measurements. In studies of self-efficacy, behavioral and cognitive variables were assessed quantitatively. Self-efficacy with regard to phobias was assessed by the subjects' self-ratings of the number of tasks on a behavioral-avoidance test they expected they could complete. College students' test anxiety was assessed by personality inventories. Thus, the assessment of behavioral and cognitive variables is important in the social-learning approach to personality.

Research on Bandura's Theory

Bandura favors well-controlled laboratory investigations in the rigorous tradition of experimental psychology. We noted his use of experimental and control groups and the precise measurement of independent and dependent variables. He studies large subject groups and compares their average performance by statistical analysis. To illustrate further the kind of research that has proceeded from Bandura's theory, we consider representative work on self-efficacy and on the effect of televised models on aggressive behavior.

Self-Efficacy

Age and gender differences Self-efficacy differs as a function of gender and age. Research with children and adults shows that on the average, men score higher than women in self-efficacy. These gender differences peak during the 20s and then decline in later years. For both men and women, self-efficacy increases through childhood and early adulthood, peaks in middle age, and then declines after age 60 (Gecas, 1989; Lachman, 1985).

However, even though self-efficacy appears to decline with age, there exists a wide range of individual differences in our beliefs about our capabilities. For example, in a study of adults in the Netherlands, average age 66, the people who believed that their memory was worsening performed significantly less well on tests of memory functioning, which were administered six years later, than did people whose sense of self-efficacy included the belief that their memory capabilities were high (Valentijn et al., 2006). A large-scale analysis of more than 100 studies confirms this finding that low memory self-efficacy—the level of our belief about how good our memory is—leads to lower performance on tests of memory (Beaudoin & Desrichard, 2011).

This research provides further support that our belief in our own abilities may, indeed, affect those abilities.

The role of parental self-efficacy We noted earlier the influence of parents, siblings, peers, and others in affecting self-efficacy. Research conducted on teenagers and their parents in Italy showed that adolescents whose parents scored high in parental self-efficacy (who believed they were effective parents) also scored higher in their own self-efficacy beliefs than those whose parents scored low in parental self-efficacy. And those teens with high self-efficacy parents also had fewer behavioral problems, less anxiety, performed better in school, and were more open and honest in communicating with their parents than those with low self-efficacy parents (Steca, Bassi, Caprara, & Fave, 2011).

A study of African-American teenage boys in a U.S. public housing project found that those with higher levels of parental support, control, and self-efficacy had higher levels of self-efficacy themselves. Lack of parental support and control as well as low parental self-efficacy led to greater substance abuse and other delinquent behavior (Nebbitt, 2009). Similar results were obtained in a study of Mexican-American families. High parental self-efficacy was related to higher self-efficacy and fewer behavioral problems among both male and female adolescents (Dumka, Gonzales, Wheeler, & Millsap, 2010).

Physical appearance We noted Bandura's suggestion that physical appearance can influence the reinforcers people receive from others and, thus, how they feel about themselves. A study of adult men and women aged 25–76 showed that physical appearance had a greater effect on their feelings of being in control of their lives than did their level of self-esteem or their health (Andreoletti, Zebrowitz, & Lachman, 2001).

For example, having a round face, large eyes, small nose bridge, and small chin ("baby-faceness") was found to be strongly related to low control beliefs in young and middle adulthood. Older baby-faced adults reported stronger feelings of control, perhaps because people reacted to them differently since they looked younger than did thin-faced people of the same age. The findings were stronger for women; a more youthful appearance later in life was shown to have definite advantages both socially and in the workplace.

Another major finding in this study was the significant effect of physical attractiveness on control beliefs. People who were rated less attractive reported lower feelings of control in both job and social situations. In addition, shorter people reported lower feelings of control in young adulthood than did taller people or those of average height.

Academic performance Research demonstrates a significant positive relationship between self-efficacy and academic performance. Teachers with a high degree of self-efficacy or confidence in their teaching abilities create more opportunities for their students to achieve at a high level. Self-efficacy in students has also been positively related to motivation, level of effort, level of aspiration, and persistence in classroom situations (see, for example, Bassi, Steca, Fave, & Caprara, 2007; Gibson & Dembo, 1984; Multon, Brown, & Lent, 1991; Zimmerman, 1995).

Bandura also found differences in the ways schools inculcate self-efficacy in their students. In high-achieving schools, principals were more concerned with education than with implementing policies and regulations, and teachers set high expectations and standards for their students. In low-achieving schools principals functioned more as administrators and disciplinarians than as educators, and teachers expected little in the way of academic performance from their students (Bandura, 1997).

Cultural differences have been shown to influence self-efficacy in children. A study was conducted with elementary school students in grades two to six in East and West Germany, before those nations were reunified. Students in the East German communist-collectivist culture scored lower in self-efficacy than children in the West German capitalist-individualist culture. The East German children had less confidence in their

ability to perform well in school and considered themselves less intelligent than West German students (Oettingen & Maier, 1999).

Career choice and job performance Gender differences in self-efficacy can influence our choice of career. Research has shown that men perceive themselves to be high in self-efficacy for so-called traditional "male" as well as traditional "female" occupations. In contrast, women perceive themselves high in self-efficacy for so-called female occupations but low in self-efficacy for traditional male occupations. The male and female subjects in this research performed at comparable levels on standardized tests of verbal and quantitative skills. Thus, they possessed similar measurable abilities but perceived these abilities differently. Their feelings about their own competence for various careers differed as a function of gender (Hackett, 1995).

Self-efficacy can affect the amount of time spent job hunting as well as future job success. Employees high in self-efficacy set higher personal goals and are more committed to them than employees low in self-efficacy. Those high in self-efficacy tend to focus on analyzing and solving problems on the job; those low in self-efficacy focus on personal deficiencies and the fear of failure, which can undermine their productivity (Locke & Latham, 1990).

The significant positive relationship between self-efficacy and job performance was supported by a meta-analysis of 114 research studies involving more than 21,600 subjects. The higher the level of a person's self-efficacy, the better is his or her performance on the job (Stajkovic & Luthans, 1998). An update of this research found that self-efficacy was a better predictor of performance for jobs of low complexity than it was for jobs of medium or high complexity (Judge, Jackson, Shaw, Scott, & Rich, 2007).

Those high in self-efficacy perform better when they receive greater feedback about their job performance. They often do not perform well in situations that provide little or no feedback. In other words, not knowing how well they are doing can be a negative factor for people who score high in self-efficacy (Schmidt & DeShon, 2010).

Other research has demonstrated that people high in self-efficacy are more successful in job training programs and report higher levels of job satisfaction, organizational commitment, and job performance than do people who are low in self-efficacy (Salas & Cannon-Bowers, 2001).

Physical health Self-efficacy also affects several aspects of physical well-being. In one study, pregnant women who had been taught relaxation and breathing exercises to reduce pain during childbirth believed they had greater control over that pain than did women who had not been taught relaxation techniques. The higher the women's self-efficacy and feeling of control, the longer they were able to tolerate the discomfort experienced during delivery before requesting pain medication. In addition, the higher their perceived self-efficacy, the less pain medication they required (Manning & Wright, 1983).

Other research supports the positive relationship between self-efficacy and pain tolerance. Coping techniques that improve self-efficacy produce substantial increases in endorphins, which are the body's natural painkillers. In a study on chronic pain, patients suffering from low back pain were given a pain-rating scale and a self-efficacy rating scale. Their progress in a three-week rehabilitation program was monitored. After six months it was found that patients higher in self-efficacy reported better physical functioning and less back pain than did patients lower in self-efficacy (Altmaier, Russell, Kao, Lehmann, & Weinstein, 1993).

Self-efficacy is also related to the maintenance of healthy behaviors.

> Life-style habits can enhance or impair health. This enables people to exert some behavioral control over their vitality and quality of health. Efficacy beliefs affect every phase of personal

> change—whether people even consider changing their health habits; whether they enlist the motivation and perseverance needed to succeed should they choose to do so; and how well they maintain the habit changes they have achieved. (Bandura, 1995, p. 28)

A study of Native American and native Alaskan adults showed a clear relationship between self-efficacy and alcohol use: The lower the level of self-efficacy, the greater the alcohol consumption (Taylor, 2000). In the case of cigarette smoking, studies of adolescents show that the higher their self-efficacy, the more resistant they are to peer pressure to start smoking. Among college student smokers, high self-efficacy was found to be the best predictor of an expressed intention to reduce the number of cigarettes smoked or to quit (Schwarzer & Fuchs, 1995; Stacy, Sussman, Dent, Burton, & Floy, 1992).

Self-efficacy can affect recovery from physical illness. For example, one study found that people high in self-efficacy responded better to cognitive and behavioral treatment for pulmonary disease than did patients low in self-efficacy. Men who suffered heart attacks showed a higher rate of return to normal activities and less fear and depression when both they and their spouses believed in their cardiac fitness. The higher the patients' self-efficacy, the more likely they were to follow prescribed exercise programs and the more they improved (Kaplan, Atkins, & Reinsch, 1984; McLeod, 1986).

Research in Israel on patients with diabetes found that those high in self-efficacy were far more likely to persist in their self-care treatment programs than were those low in self-efficacy (Mishali, Omer, & Heymann, 2011).

A study of adult patients recovering from orthopedic surgery (hip or knee replacement) showed that those high in self-efficacy performed significantly better in rehabilitation therapy programs than did those low in self-efficacy (Waldrop, Lightsey, Ethington, Woemmel, & Coke, 2001). And a study of breast cancer patients found that the higher the expectation of remaining cancer-free in the future, the better the emotional adjustment to the disease (Carver et al., 2000).

Mental health In Italy, a study of boys and girls, average age 11.5 years, found that children who rated themselves low in social and academic efficacy were significantly more likely to experience depression than were children who rated themselves high in efficacy. Low social efficacy has also been significantly related to depression in a sample of adolescents in the United States (Bandura, Pastorelli, Barbarelli, & Caprara, 1999). In a study of adolescents in the Netherlands, low social efficacy was related to high levels of anxiety, neuroticism, and symptoms of depression (Muris, 2002). Studies in such diverse cultures as China and Nigeria showed that those high in self-efficacy experienced less on-the-job stress and less test anxiety than those low in self-efficacy (Li, 2010; Onyeizugbo, 2010).

A similar relationship was documented with adults. Low social efficacy was found to contribute to feelings of depression, partly because a lack of coping skills inhibited the development of a social support network (Holahan & Holahan, 1987). These findings may indicate a circular relationship rather than simple cause-and-effect. Low self-efficacy can lead to depression, and depression can reduce self-efficacy. People who are depressed believe that they are far less capable than others of performing effectively in many areas of life and that they have little control over their situations (Bandura, 1997).

A study of U.S. college students related self-efficacy to several of the characteristics of mental health proposed by Alfred Adler. Students who scored high in self-efficacy also scored higher in social interest, the desire to strive for perfection, and a sense of belonging than did students who scored low in self-efficacy (Dinter, 2000).

Research conducted in Canada and in the United States showed that adults who scored high on a measure of self-efficacy were likely also to score high in self-esteem. They were less likely to procrastinate or to give up trying when dealing with an obstacle than were subjects low in self-efficacy (Lightsey, Burke, Ervin, Henderson, & Yee, 2006; Steel, 2007.

Coping with stress Enhanced self-efficacy and a sense of control over life events are positively related to the ability to cope with stress and to minimize its harmful effects on biological functioning. Bandura wrote, "A strong sense of coping efficacy reduces vulnerability to stress and depression in taxing situations and strengthens resiliency to adversity" (Bandura, 2001, p. 10). High self-efficacy has been associated with strengthening the body's immune system, lowering the release of stress-related hormones, and reducing susceptibility to respiratory infections.

Studies have shown that high self-efficacy can help women cope with the stress of abortion. A sample of women completed questionnaires to rate perceived self-efficacy and to assess their mood immediately after the procedure and again three weeks later. Subjects higher in self-efficacy adjusted more satisfactorily with significantly less depression and higher mood states than did those lower in self-efficacy (Cozzarelli, 1993). Another study dealt with stress experienced following the birth of one's first child. Self-report inventories assessed self-efficacy, psychological distress, and background variables such as income, age, education, and marital satisfaction. Women higher in self-efficacy coped better with the demands than did those lower in self-efficacy (Ozer, 1995).

A study of refugees migrating from East to West Germany after the destruction of the Berlin Wall in 1990 showed that people higher in self-efficacy adapted significantly better to the change from an economically disadvantaged lifestyle under a communist system to an affluent lifestyle under a capitalist system.

> Perceived self-efficacy proved to be a powerful personal resource regarding the impact of migration stress on cognitive appraisals as well as on psychological and physical wellbeing.... Highly self-efficacious migrants perceived the demands in their new life more as challenges and less as threats. They experienced lower anxiety, better health, and fewer health complaints than low self-efficacious migrants. (Jerusalem & Mittag, 1995, p. 195)

Research was conducted on adults in the Netherlands who had suffered facial disfigurement as a result of treatment for cancers of the head or neck. Those who measured lower in self-efficacy experienced higher levels of stress in response to unpleasant or rejecting behaviors of other people. Those who scored higher in self-efficacy experienced less stress because they believed they could exercise some control over how other people reacted to them (Hagedoorn & Molleman, 2006).

HIGHLIGHTS: Research on Bandura's Ideas

Studies on *self-efficacy* have shown that:

- Men score higher than women in self-efficacy when younger
- Self-efficacy increases into adulthood, peaks in middle age, and declines after age 60
- Those whose parents scored high in parental self-efficacy were high in personal self-efficacy
- Those whose parents were high in self-efficacy did better in school and had less anxiety and fewer behavior problems
- Self-efficacy is higher in individualistic cultures

People high in *self-efficacy*:

- Earn better grades in school
- Set higher career goals, are more committed to attaining those goals, and perform better on the job
- Are in better health, are better able to tolerate pain, and recover faster from illness
- Are less likely to drink alcohol and smoke cigarettes
- Are less likely to experience depression, test anxiety, on-the-job stress, or become neurotic
- Score higher in self-esteem; they feel good about themselves.

Collective Efficacy

Just as an individual may develop a sense of self-efficacy, a group of people working together in a common enterprise to achieve common goals may develop a sense of collective efficacy. For example, a baseball or football team, a department within a large organization, a military combat unit, or a group of neighbors uniting to fight a developer can engender the strong feeling that they can and will achieve their goals and overcome all obstacles.

The value of collective efficacy has been studied in college basketball teams. It was demonstrated that a high sense of collective efficacy arose in teams that had highly competent leaders early in the season and that had won most of their games in the previous season. Teams with the highest collective efficacy at the beginning of the new season placed better in end-of-season standings than did teams that scored low in collective efficacy (Watson, Chemers, & Preiser, 2001).

Military personnel in units of the air force in Italy who showed higher collective efficacy scored higher in commitment to their organization and satisfaction with their job than those in units with low collective efficacy (Borgogni, Petitta, & Mastrorilla, 2010). And school children in Greece, ages 11 to 14, in classes high in collective efficacy displayed and received far less bullying from classmates than those in classes with low collective efficacy (Sapouna, 2010).

Self-Efficacy and the Internet

Research on Internet self-efficacy (that is, our feelings of confidence in our ability to effectively use the Internet) conducted on 8th-grade students in Taiwan found no gender differences. However, girls ranked higher than boys in level of confidence in communicating online; boys were higher in level of confidence in exploring online (Tsai & Tsai, 2010). A study of American college students found that men ranked higher in computer self-efficacy than women (Buse, 2010). Research with college students in Turkey found that those high in social self-efficacy (confidence in their ability to initiate social contact and make new friends easily) had greater self-esteem and emotional well-being, but were far more likely to become addicted to Internet use than those who scored low in social self-efficacy (Iskender & Akin, 2010).

A study of adults in Germany who scored high in self-efficacy regarding their ability to make a favorable impression on other people tended to post more informal personal photos (such as at a party) and to present themselves as relaxed, funny, and cool on their Facebook pages than those low in that aspect of personal self-efficacy (Kraemer & Winter, 2008).

The Relationship between Aggressive Behavior and Televised or Online Violence

Bandura and many other researchers have demonstrated convincingly that in laboratory situations and in the real world, seeing violence begets violence whether on television, in movies, video games, or in our homes, streets, and schools.

A large-scale literature review confirms the relationship between the viewing of violent television programs in childhood and later aggressive behavior (see Rogoff, Paradise, Arauz, Correa-Chavez, & Angelillo, 2003). A study of people in their early and mid-20s found a strong positive correlation between the amount of violence they had watched on television between the ages of 6 and 10 and their aggressive behavior as adults. In other words, the more TV violence to which they had been exposed as children, the more aggressive they were in their 20s (Huesmann, Moise-Titus, Podolski, & Eron, 2003).

In a different approach to the relationship between observed violence and aggressive behavior, researchers investigated the incidence of aggressive acts shortly after people viewed televised models committing violent acts. One analysis found a brief but sharp rise in violent actions peaking three to four days following highly publicized riots (Phillips, 1985). Murder rates in the United States were found to increase by more than 12 percent over the expected rate for the three-day period following a televised championship boxing match, a phenomenon that was maintained over a 15-year period (Phillips, 1983). Self-directed violence also appears to increase following exposure to similar violence widely reported in the news media. The incidence of suicide tends to climb following the suicide of a movie star or other celebrity (Phillips, 1974).

Research on large samples of children, teenagers, and college students in the United States, Japan, and several other countries showed that playing violent video games resulted in increases in aggressive and hostile behaviors as well as greater drinking and drug use than were recorded among people who did not play violent video games. Those who played violent games were also more likely to get into fights, to argue with their teachers, and to perform poorly in school. They were less likely to help others. Also, they were found to have higher levels of cardiovascular arousal. In general, the more violent the favorite games, the more violent the resulting behavior (see Anderson, et al., 2010; Bartholow, Sestir, & Davis, 2005; Gentile, Lynch, Linder, & Walsh, 2003; Holtz & Appel, 2011; Huesmann, 2010; Krahe & Moeller, 2004; Padilla-Walker, Nelson, Carroll, & Jensen, 2010; Uhlmann & Swanson, 2004).

Studies in the United States, Canada, and Spain concluded that having a computer without parental control or monitoring can lead to a high level of online aggression including cyberbullying among boys and girls between the ages of 12 and 17 (Calbete, Orve, Estevez, Villardon, & Padilla, 2010; Law, Shapka, & Olson, 2010; Warner & Bumpus, 2010).

Additional research with college students showed significant positive correlations between time spent listening to rap music and aggressive behavior toward other people including sexually aggressive behavior toward women (see Anderson, Carnagey, & Eubanks, 2003; Barongen & Hall, 1995; Chen, Miller, Grube, & Waiters, 2006).

HIGHLIGHTS: Research on Bandura's Ideas

Groups that score high in *collective efficacy*:

- Win more basketball games
- Show a higher level of commitment to their organization
- Score high in job satisfaction
- Engage in less bullying in the classroom

Research on *Internet self-efficacy* has found that:

- Male college students in the United States score higher than females
- In Taiwan, girls in the 8th grade score higher than boys
- Those high in social self-efficacy (confident in their ability to make new friends) are more likely to become addicted to the Internet
- Those who feel sure of their ability to make a good impression on others use more informal photos on their Facebook page

Studies show that *aggressive behavior* is related to:

- Watching violent television programs in childhood
- Playing violent video games in childhood, adolescence, and young adulthood
- Listening to rap music
- Having a computer in childhood and adolescence without parental control or monitoring

Reflections on Bandura's Theory

Social-learning theory focuses on overt behavior. Critics charge that this emphasis ignores distinctly human aspects of personality such as motivation and emotion. They draw an analogy with a physician whose patients have stomach pains. The physician who deals only with overt behavior may treat such patients by asking them to stop groaning and complaining and clutching their stomachs. What may be required instead is medication or surgery. The physician must diagnose and treat the afflicted internal organ, the underlying cause of the pain. If just the symptom is treated and not the cause, critics say, substitute symptoms may appear.

However, the social-learning approach has several advantages. First, it is objective and amenable to laboratory methods of investigation, making it congruent with the current emphasis in experimental psychology. Most experimental psychologists reject theoretical work in personality that posits unconscious or other internal driving forces that cannot be manipulated or measured under laboratory conditions. Therefore, Bandura's approach boasts a great amount of empirical support. This is particularly true for his concept of self-efficacy; research continues to confirm its usefulness in the laboratory and in real-world situations.

Second, observational learning and behavior modification are compatible with the functional, pragmatic spirit of American psychology. More readily than other approaches, observational-learning techniques can be taken from the laboratory and applied to practical problems. The techniques also provide more immediate reinforcement for the practitioner than do other approaches. For example, in clinical situations, dramatic changes can be seen in client behavior within weeks or even days.

Behavior changes on a larger scale, and in some 60 nations, have also been demonstrated. Bandura's central idea, that people learn behaviors from role models whom they wish to emulate, has been used in radio and television programs in less well-developed nations to promote such social issues as population control, improving the status of women, and decreasing the spread of AIDS. The stories presented in these media revolved around characters who modeled behaviors designed to achieve these public health goals not only for themselves but for the greater society as well. Studies have demonstrated significant changes in safe sex practices and in family planning practices among millions of people following exposure to these models, reinforcing the notion

that Bandura's ideas can be applied to the resolution of national as well as individual problems (Smith, 2002).

It is not surprising, then, that many researchers and clinicians continue to study and promote Bandura's social-learning theory. The great number of books, articles, and research studies still deriving from it attests to its continuing popularity as a way to study behavior in the laboratory and to modify behavior in the real world.

Chapter Summary

Behavior can be learned through vicarious reinforcement by observing the behavior of others and anticipating the rewards for behaving in the same way. Cognitive processes are the mediating mechanisms between stimulus and response and bring about control of behavior through self-regulation and self-reinforcement. In the classic Bobo doll study, children patterned their behavior on the model's aggressive behavior whether the model was observed live, on television, or in a cartoon. Disinhibition involves weakening an inhibition through exposure to a model. Three factors that influence modeling are the model's characteristics, the observer's characteristics, and the behavior's reward consequences.

Observational learning is governed by attentional, retention, production, and incentive and motivational processes. The self is a set of cognitive processes concerned with thought and perception. Self-reinforcement requires internal performance standards against which to evaluate behavior. Self-efficacy refers to the ability to control life events. People low in self-efficacy feel helpless and give up quickly when faced with obstacles. People who score high in self-efficacy persevere at tasks and perform at a high level. Judgments of self-efficacy are based on performance attainment, vicarious experiences, verbal persuasion, and physiological arousal. Using these information sources, it is possible to increase self-efficacy. Infants and children are reinforced primarily by physical stimuli. Older children are reinforced more by others' approval or disapproval; this is internalized so that reinforcement becomes self-administered.

In behavior therapy, models are used to demonstrate ways of coping with threatening situations. Behavior can be modified through observation and guided participation. In covert modeling, subjects imagine how a model copes with a feared situation. Bandura's approach to behavior modification deals with overt behavior and cognitive variables, particularly self-efficacy. As self-efficacy improves during treatment, the client is increasingly able to deal with threatening situations. Behavior modification has been criticized for manipulating people against their will, but Bandura argues that with self-awareness and self-regulation, people undergoing behavior modification understand what is being reinforced.

Behavior is controlled by internal cognitive processes and external stimuli; a position Bandura calls reciprocal determinism. Triadic reciprocality refers to interaction among behavior, cognitive, and environmental variables. Most behavior is learned; genetic factors play a minor role. Learning in childhood may be more influential than learning in adulthood but adults are not victims of childhood experiences. Our ultimate goal is to set realistic performance standards to maintain an optimal level of self-efficacy. Self-efficacy varies with age and gender and can influence career choice, school performance, job performance, physical and mental health, and the ability to cope with stress. In addition, groups have been shown to develop collective efficacy. Computer self-efficacy strongly influences our online behavior.

Bandura assesses behavior and cognitive variables through direct observation, self-report inventories, and physiological measures. He favors controlled laboratory investigations using large groups of subjects and statistical analysis of data. Criticisms of Bandura's theory relate to his focus on overt behavior to the exclusion of emotions and conflicts, his treatment of symptoms rather than possible internal causes, and his failure to state precisely how cognitive variables affect behavior.

Review Questions

1. How does the observational-learning approach to personality differ from the other approaches we have discussed?
2. How does Bandura deal in his system with internal cognitive, or thought, processes, and with the unconscious?

3. What is Bandura's position on the role of reinforcement in learning?
4. Describe a typical experiment in which modeling is used to change behavior.
5. Explain disinhibition. How can the same phenomenon of disinhibition explain the behavior of people in a crowd or a mob and the behavior of people trolling online?
6. How does modeling vary as a function of the characteristics of the models, the characteristics of the observers, and the reward consequences of the behavior?
7. What are the four processes of observational learning? How are they related?
8. Explain how the production processes can be used to teach a person to play tennis.
9. How do the types of behaviors we acquire through modeling change with age?
10. What is the *self* in Bandura's view? How does self-reinforcement operate to change behavior?
11. What does Bandura mean by self-efficacy? Give an example of how we can use self-efficacy to exert control over our life.
12. How do people high in self-efficacy differ from people low in self-efficacy in terms of their ability to cope with life?
13. On what sources of information do we base our judgment about our own level of efficacy?
14. Describe the developmental changes that occur in self-efficacy from infancy to old age. How can self-efficacy be increased?
15. Describe the guided participation and the covert modeling approaches to behavior modification.
16. Give an example of how modeling can be used to reduce anxiety.
17. What is the relationship between self-efficacy and physical health? Between self-efficacy and mental health?
18. What is Bandura's position on the issue of free will versus determinism? On the relative influences of heredity and environment?
19. How does self-efficacy differ as a function of gender, age, and physical attractiveness?
20. In what ways does self-efficacy influence performance in school and on the job? How does self-efficacy affect our ability to cope with stress?
21. Describe how exposure to televised violence and video-game violence affects behavior.
22. In what ways can collective efficacy influence the behavior of members of a group?
23. What is computer self-efficacy? How might it influence our behavior online?

Suggested Readings

Bandura, A. (1976). "Albert Bandura." In R. I. Evans (Ed.), *The making of psychology: Discussions with creative contributors* (pp. 242–254). New York: Alfred A. Knopf. Interviews with Bandura about his life and work.

Bandura, A. (Ed.). (1995). *Self-efficacy in changing societies*. New York: Cambridge University Press. Discusses various ways in which self-efficacy beliefs shape lifestyles and goals. Considers these issues from life-span and social-cultural perspectives.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman. Describes 20 years of research on the idea that we can accomplish what we truly want to accomplish; that we are capable of consciously directing our actions to achieve success. Extends the concept of efficacy to society at large—to political beliefs, social practices, and collective action.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*, 1–26. Discusses the basis of social cognitive theory as the capacity to exercise control over the nature and quality of one's life.