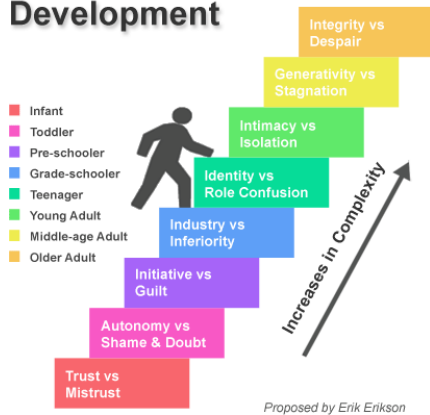


# Erikson's 8 Stages of Psychosocial Development

## Stages of Psychosocial Development



## Erikson's Theory

Erik Erikson (1902-1994) was a stage theorist who took Freud's controversial theory of psychosexual development and modified it as a psychosocial theory. Erikson emphasized that the ego makes positive contributions to development by mastering attitudes, ideas, and skills at each stage of development.

This mastery helps children grow into successful, contributing members of society. During each of Erikson's eight stages, there is a psychological conflict that must be successfully overcome in order for a child to develop into a healthy, well-adjusted adult.

## Stages Of Psychosocial Development

Erikson's stages of psychosocial development are based on (and expand upon) Freud's psychosexual theory. Erikson proposed that we are motivated by the need to achieve competence in certain areas of our lives. According to psychosocial theory, we experience eight stages of development over our lifespan, from infancy through late adulthood. At each stage there is a crisis or task that we need to resolve. Successful completion of each developmental task results in a sense of competence and a healthy personality. Failure to master these tasks leads to feelings of inadequacy.

Erikson also added to Freud's stages by discussing the cultural implications of development; certain cultures may need to resolve the stages in different ways based upon their cultural and survival needs.

## Trust vs. Mistrust

From birth to 12 months of age, infants must learn that adults can be trusted. This occurs when adults meet a child's basic needs for survival. Infants are dependent upon their caregivers, so caregivers who are responsive and sensitive to their infant's needs help their baby to develop a sense of trust; their baby will see the world as a safe, predictable place. Unresponsive caregivers who do not meet their baby's needs can engender feelings of [anxiety](#), fear, and mistrust; their baby may see the world as unpredictable. If infants are treated cruelly or their needs are not met appropriately, they will likely grow up with a sense of mistrust for people in the world.

## Autonomy vs. Shame/Doubt

As toddlers (ages 1-3 years) begin to explore their world, they learn that they can control their actions and act on their environment to get results. They begin to show clear preferences for certain elements of the environment, such as food, toys, and clothing. A toddler's main task is to resolve the issue of *autonomy vs. shame and doubt* by working to establish independence. This is the "I can do it!" stage. For example, we might observe a budding sense of autonomy in a 2-year-old child who wants to choose her clothes and dress herself. Although her outfits might not be appropriate for the situation, her input in such basic decisions has an effect on her sense of independence. If denied the opportunity to act on her environment, she may begin to doubt her abilities, which could lead to low [self-esteem](#) and feelings of shame.

## Initiative vs. Guilt

Once children reach the preschool stage (ages 3-6 years), they are capable of initiating activities and asserting control over their world through social interactions and play. According to Erikson, preschool children must resolve the task of *initiative vs. guilt*. By learning to plan and achieve goals while interacting with others, preschool children can master this task. Initiative, a sense of ambition and responsibility, occurs when parents allow a child to explore within limits and then support the child's choice. These children will develop self-confidence and feel a sense of purpose. Those who are unsuccessful at this stage—with their initiative misfiring or stifled by over-controlling parents—may develop feelings of guilt.

## Industry vs. Inferiority

During the elementary school stage (ages 6-12), children face the task of *industry vs. inferiority*. Children begin to compare themselves with their peers to see how they

measure up. They either develop a sense of pride and accomplishment in their schoolwork, sports, social activities, and family life, or they feel inferior and inadequate because they feel that they don't measure up. If children do not learn to get along with others or have negative experiences at home or with peers, an inferiority complex might develop into [adolescence](#) and adulthood.

## Identity vs. Role Confusion

In adolescence (ages 12-18), children face the task of *identity vs. role confusion*. According to Erikson, an adolescent's main task is developing a sense of self. Adolescents struggle with questions such as "Who am I?" and "What do I want to do with my life?" Along the way, most adolescents try on many different selves to see which ones fit; they explore various roles and ideas, [set](#) goals, and attempt to discover their "adult" selves. Adolescents who are successful at this stage have a strong sense of identity and are able to remain true to their beliefs and values in the face of [problems](#) and other people's perspectives. When adolescents are apathetic, do not make a conscious search for identity, or are pressured to conform to their parents' ideas for the future, they may develop a weak sense of self and experience role confusion. They will be unsure of their identity and confused about the future. Teenagers who struggle to adopt a positive role will likely struggle to "find" themselves as adults.

## Intimacy vs. Isolation

People in early adulthood (20s through early 40s) are concerned with *intimacy vs. isolation*. After we have developed a sense of self in adolescence, we are ready to share our life with others. However, if other stages have not been successfully resolved, young adults may have trouble developing and maintaining successful relationships with others. Erikson said that we must have a strong sense of self before we can develop successful intimate relationships. Adults who do not develop a positive [self-concept](#) in adolescence may experience feelings of loneliness and emotional isolation.

## Generativity vs. Stagnation

When people reach their 40s, they enter the time known as middle adulthood, which extends to the mid-60s. The social task of middle adulthood is *generativity vs. stagnation*. Generativity involves finding your life's work and contributing to the development of others through activities such as volunteering, mentoring, and raising children. During this stage, middle-aged adults begin contributing to the next generation, often through childbirth and caring for others; they also engage in meaningful and productive work which contributes positively to society. Those who do not master this task may experience stagnation and feel as though they are not leaving a mark on the world in a meaningful way; they may have little connection with others and little interest in productivity and self-improvement.

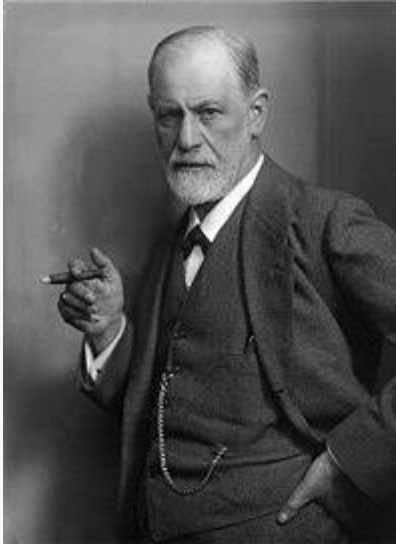
## Integrity vs. Despair

From the mid-60s to the end of life, we are in the period of development known as late adulthood. Erikson's task at this stage is called *integrity vs. despair*. He said that people in late adulthood reflect on their lives and feel either a sense of satisfaction or a sense of failure. People who feel proud of their accomplishments feel a sense of integrity, and they can look back on their lives with few regrets. However, people who are not successful at this stage may feel as if their life has been wasted. They focus on what "would have," "should have," and "could have" been. They face the end of their lives with feelings of bitterness, depression, and despair.

# Freud's psychoanalytic theories

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Sigmund Freud

**Sigmund Freud** (6 May 1856 - 23 September 1939) is considered to be the founder of the **psychodynamic** approach to **psychology**, which looks to unconscious drives to explain **human behavior**. Freud believed that the mind is responsible for both conscious and unconscious decisions that it makes on the basis of psychic drives. The id, ego, and super ego are three aspects of the mind Freud believed to comprise a person's personality. Freud believed people are "simply actors in the drama of [their] own minds, pushed by desire, pulled by coincidence. Underneath the surface, our personalities represent the power struggle going on deep within us"

## **Id**[\[edit\]](#)

The id according to Freud is the part of the unconscious that seeks pleasure. His idea of the id explains why people act out in certain ways, when it is not in line with the ego or superego. The id is the part of the mind, which holds all of humankind's most basic and primal instincts. It is the impulsive, unconscious part in the mind that is based on desire to seek immediate satisfaction. The id does not have a grasp on any form of reality or consequence. Freud understood that some people are controlled by the id because it makes people engage in need-satisfying behavior without any accordance to what is right or wrong. Freud compared the id and the ego to a horse and a rider. The id is compared to the horse, which is directed and controlled, by the ego or the rider. This example goes to show that although the id is supposed to be controlled by the ego, they often interact with one another according to the drives of the id.

Freud defined the id as the part of the mind "cut off from the external world, that has its own world of perception. It detects with extraordinary acuteness certain changes in its interior, especially oscillations in the tension of its instinctual needs, and these changes become conscious as feelings in the pleasure-unpleasure series. It is hard to say, to be sure, by what means and with the help of what sensory terminal organs these perceptions come about. But it is an established fact that self-

perceptions—coenesthetic feelings and feelings of pleasure-unpleasure—govern the passage of events in the id with despotic force. The id obeys the inexorable pleasure.

## Ego [\[edit\]](#)

In order for people to maintain a realistic sense here on earth, the ego is responsible for creating balance between pleasure and pain. It is impossible for all desires of the id to be met and the ego realizes this but continues to seek pleasure and satisfaction. Although the ego does not know the difference between right and wrong, it is aware that not all drives can be met at a given time. The reality principle is what the ego operates by in order to help satisfy the id's demands as well as compromising according to reality. The ego is a person's "self" composed of unconscious desires. The ego takes into account ethical and cultural ideals in order to balance out the desires originating in the id. Although both the id and the ego are unconscious, the ego has close contact with the [perceptual system](#). The ego has the function of self-preservation, which is why it has the ability to control the instinctual demands from the id.

"The ego is first and foremost a bodily ego; it is not merely a surface entity, but is itself the projection of a surface. If we wish to find an anatomical analogy for it we can best identify it with the 'cortical homunculus' of the anatomists, which stands on its head in the cortex, sticks up its heels, faces backwards and, as we know, has its speech-area on the left-hand side. The ego is ultimately derived from bodily sensations, chiefly from those springing from the surface of the body. It may thus be regarded as a mental projection of the surface of the body, representing the superficies of the mental apparatus."<sup>[3]</sup>

## Superego [\[edit\]](#)

The superego, which develops around age four or five, incorporates the morals of society. Freud believed that the superego is what allows the mind to control its impulses that are looked down upon morally. The superego can be considered to be the conscience of the mind because it has the ability to distinguish between reality as well as what is right or wrong. Without the superego Freud believed people would act out with aggression and other immoral behaviors because the mind would have no way of understanding the difference between right and wrong. The superego is considered to be the "consciousness" of a person's personality and can override the drives from the id. Freud separates the superego into two separate categories; the ideal self and the conscience. The conscience contains ideals and morals that exist within society that prevent people from acting out based on their internal desires. The ideal self contains images of how people ought to behave according to societies ideals.

Freud believed that personality developed through a series of childhood stages in which the pleasure-seeking energies of the [id](#) become focused on certain erogenous areas. An erogenous zone is characterized as an area of the body that is particularly sensitive to stimulation. During the five psychosexual stages, which are the oral, anal, phallic, latent and genital stages, the erogenous zone associated with each stage serves as a source of pleasure.

Each stage of development is marked by conflicts that can help build growth or stifle development, depending upon how they are resolved. If these psychosexual stages are completed successfully, a healthy personality is the result.

If certain issues are not resolved at the appropriate stage, [fixations](#) can occur. A fixation is a persistent focus on an earlier psychosexual stage. Until this conflict is resolved, the individual will remain "stuck" in this stage.

A person who is fixated at the oral stage, for example, may be over-dependent on others and may seek oral stimulation through smoking, drinking, or eating.

## The Oral Stage

Age Range: Birth to 1 Year

Erogenous Zone: Mouth

During the oral stage, the infant's primary source of interaction occurs through the mouth, so the rooting and sucking reflex is especially important. The mouth is vital for eating, and the infant derives pleasure from oral stimulation through gratifying activities such as tasting and sucking.

Because the infant is entirely dependent upon caretakers (who are responsible for feeding the child), the child also develops a sense of trust and comfort through this oral stimulation.

The primary conflict at this stage is the weaning process--the child must become less dependent upon caretakers. If fixation occurs at this stage, Freud believed the individual would have issues with dependency or aggression. Oral fixation can result in problems with drinking, eating, smoking, or nail-biting.

## The Anal Stage

Age Range: 1 to 3 years

Erogenous Zone: Bowel and Bladder Control

During the anal stage, Freud believed that the primary focus of the libido was on controlling bladder and bowel movements. The major conflict at this stage is toilet training--the child has to learn to control his or her bodily needs. Developing this control leads to a sense of accomplishment and independence.

According to Freud, success at this stage is dependent upon the way in which parents approach toilet training. Parents who utilize praise and rewards for using the toilet at the appropriate time encourage positive outcomes and help children feel capable and productive. Freud believed that positive experiences during this stage served as the basis for people to become competent, productive, and creative adults.

However, not all parents provide the support and encouragement that children need during this stage. Some parents instead punish, ridicule or shame a child for accidents.

According to Freud, inappropriate parental responses can result in negative outcomes. If parents take an approach that is too lenient, Freud suggested that an *anal-expulsive personality* could develop in which the individual has a messy, wasteful, or destructive personality. If parents are too strict or begin toilet training too early, Freud believed that an *anal-retentive personality* develops in which the individual is stringent, orderly, rigid, and obsessive.

## The Phallic Stage

### Age Range: 3 to 6 Years

### Erogenous Zone: Genitals

Freud suggested that during the phallic stage, the primary focus of the libido is on the genitals. At this age, children also begin to discover the differences between males and females.

Freud also believed that boys begin to view their fathers as a rival for the mother's affections. The Oedipus complex describes these feelings of wanting to possess the mother and the desire to replace the father. However, the child also fears that he will be punished by the father for these feelings, a fear Freud termed *castration anxiety*.

The term Electra complex has been used to describe a similar set of feelings experienced by young girls. Freud, however, believed that girls instead experience *penis envy*.

Eventually, the child begins to identify with the same-sex parent as a means of vicariously possessing the other parent. For girls, however, Freud believed that penis envy was never fully resolved and that all women remain somewhat fixated on this stage. Psychologists such as Karen Horney disputed this theory, calling it both inaccurate and demeaning to women. Instead, Horney proposed that men experience feelings of inferiority because they cannot give birth to children, a concept she referred to as *womb envy*.



# The Latent Period

Age Range: 6 to Puberty

Erogenous Zone: Sexual Feelings Are Inactive

During this stage, the superego continues to develop while the id's energies are suppressed. Children develop social skills, values and relationships with peers and adults outside of the family.

The development of the ego and superego contribute to this period of calm. The stage begins around the time that children enter into school and become more concerned with peer relationships, hobbies, and other interests.

The latent period is a time of exploration in which the sexual energy repressed or dormant. This energy is still present, but it is sublimated into other areas such as intellectual pursuits and social interactions. This stage is important in the development of social and communication skills and self-confidence.

As with the other psychosexual stages, Freud believed that it was possible for children to become fixated or "stuck" in this phase. Fixation at this stage can result in immaturity and an inability to form fulfilling relationships as an adult.

# The Genital Stage

Age Range: Puberty to Death

Erogenous Zone: Maturing Sexual Interests

The onset of puberty causes the libido to become active once again. During the final stage of psychosexual development, the individual develops a strong sexual interest in the opposite sex. This stage begins during puberty but last throughout the rest of a person's life.

Where in earlier stages the focus was solely on individual needs, interest in the welfare of others grows during this stage. The goal of this stage is to establish a balance between the various life areas.

Unlike the many of the earlier stages of development, Freud believed that the ego and superego were fully formed and functioning at this point. Younger children are ruled by the id, which demands immediate

satisfaction of the most basic needs and wants. Teens in the genital stage of development are able to balance their most basic urges against the need to conform to the demands of reality and social norms.

# John B. Watson Behaviorism Theory

John B. Watson is an American psychologist who is best known for establishing the psychological school of Behaviorism. His theories, research, and work were influential to the field of psychology, and through that, he left his marks on the larger world.

## Childhood and Early Education

Born on January 9, 1878, John Broadus Watson became more commonly known as John B. Watson in academic circles. He was born in Traveler's Rest, South Carolina. His parents were Pickens Butler and Emma Watson. His mother Emma was a religious woman and, so she named John after a Baptist minister. She hoped that he too would grow up and preach the Gospel and thus subjected John to harsh religious training. Her methods backfired as John eventually felt quite antipathic towards religion and instead identified as an atheist.

John's father, an alcoholic, left his family when John was 13 to live with two other women. The family was left in poverty, and eventually, Emma had to sell the family farm. At that time, they moved to Greenville, South Carolina, where Emma felt John might see more success in life. Indeed, in Greenville, John was exposed to many different people and started to view the world with a psychologist's mindset.

## Early Education and Early Career

Despite his tumultuous early life and the impoverished state of his family, Watson knew he must attend college to improve his own life. Up to this point, Watson had not been a very good student. However, his mother had some connections, and she assisted him in gaining admission to Furman University. There, he completed his classes but did not particularly excel in his academic endeavors. He also lacked social skills, which led to him being considered insubordinate by his instructors.

Watson supported himself financially while in college and graduated with his master's degree at age 21. He accomplished this by changing his focus and putting forth great effort in his studies. Upon graduation, he worked for a year at a one-room school (that he titled "Batesburg Institute") in the roles of janitor, handyman, and even principal.

## Early Study and Career In Psychology

Eventually, Watson decided he must continue his education. A professor at Furman recommended that he attend the University of Chicago and study philosophy with [John Dewey](#). Watson successfully petitioned the President of the university to allow him admission. He worked with Dewey and other influential minds, James Rowland Angel, Jacques Loeb, and Henry Herbert Donaldson.

Watson's study and work in psychology began at the University of Chicago where he began developing what would come to be called behaviorism. Watson disliked unobservable data and believed that psychology should only study what could be measured, seen, and observed in some way.

Early in his career, Watson was influenced in this thinking by the work of [Ivan Pavlov](#). Pavlov had discovered the relationship between stimulus and response and recorded his research showing that

people and animals could learn to associate one thing with something else. Watson included Pavlov's basic principles in his theories and study on psychology.

For his doctoral dissertation, Watson studied brain myelination and learning in rats. The resulting paper was titled "[Animal Education: An Experimental Study on the Psychological Development of the White Rat, Correlated with the Growth of its Nervous System.](#)" It showed that myelination was related to learning.

After graduating with his doctorate, Watson was offered a faculty position at Johns Hopkins University where he was offered the chair of the psychology department. Unfortunately, in October 1920, he was asked to leave the positions due to bad publicity. Watson had been found to be having a relationship with his graduate assistant, Rosalie Rayner, who he later married.

### **Significant Contributions**

John B. Watson created the school of behaviorist methodology within psychology and he published his views on this psychological theory in 1913. The article was entitled "[Psychology as the Behaviorist Views It,](#)" and it is commonly considered a manifesto on behaviorism. It outlined behaviorism as an objective branch of science that would base its theories and findings on experimental research using purely observable data. One goal of behaviorism was to understand how certain behaviors develop as a consequence of conditioning to external stimuli.

Watson was not particularly concerned with thought, cognition, introspection, or other forms of internal consciousness. He thought it was foolish to interpret the inner workings of the mind and believed psychologists should concern themselves with only what they could see.

Watson applied his views to all parts of human behavior including language and memory. He believed language to be a "manipulative habit." This term was meant to describe the human ability to manipulate the sounds made with the larynx. He believed that language and all behavior is conditioned (taught) in this case through imitation. He theorized that over time people learned to associate certain sounds or spoken words with certain objects, situations, or shapes on paper (words).

He hypothesized that just as people learn to associate sounds with objects or symbols, so too did people learn to associate certain feelings, behaviors, and other things with situations, objects, and symbols. This was Watson's blueprint for learning, through which he believed all people learn or can unlearn and relearn lessons as needed.

Watson's most influential and well-known work was his study of emotions. He was particularly interested in studying the way that emotions could be learned. He believed that emotions were merely physical responses to external stimuli. He also believed that rage, fear, and love were all yet to be learned at birth.

### **Watson And Little Albert**

Watson was particularly interested in studying fear. By pairing an otherwise mundane stimulus (a loud bang), with the appearance of an equally non-dangerous object (a white rat), that the sudden unpleasant sensation of loud noise paired with the rat would produce a fear response. He studied this phenomenon in the famous and controversial "[Little Albert](#)" study. In this study, he used loud noises to condition (or teach) a baby to be fearful of white rats, rabbits, and other similar stimuli. In another study, Watson also found that such fears could be unlearned through exposure to the feared object and learning new associations between stimuli.

Moreover, Watson believed that the principles of behaviorism could be used to shape babies into anything an experimenter, parent, or another person might want. He famously said:

"Give me a dozen healthy infants, well-formed, and my specified world to bring them up in and I'll guarantee to take anyone at random and train him to become any specialist I might select—doctor, lawyer, artist, merchant-chief, and yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. I am going beyond my facts, and I admit it, but so have the advocates to the contrary, and they have been doing so for many thousands of years." -John. B Watson

Many find Watson's treatment of Little Albert and his assertion that he could use behaviorism to shape any child into anything, alarming. The study of Little Albert and his learned fears was met with controversy when it was determined that Albert had withdrawn from the study and did not receive treatment to repair his learned fears of white animals. Rosalie Rayner would later joke about Albert as a grown man being terrified of all things white and fuzzy, which drew more controversial critique of the research. Watson and Rayner ultimately experimented on a human child without regard to their certain ability to reset the fear he'd learned, and because Albert was withdrawn from the study, whoever 'Little Albert' really was likely never unlearned those fears.

Watson's controversial points were made in response to Eugenics, which was a belief that genes were most important and those with lesser genes should be eliminated and not allowed to pass on their genes, an attitude popular during Watson's time. Watson emphasized the role of nurture and the ability for children to become anything, responding to the environment around them. Some of Watson's thinking and the behaviorist approach is how and why we know that some environments are helpful to the development of emotionally healthy children and adults and others are not.

Despite Watson's recognition of the importance of nurture in the nature-nurture debate, he also believed that parents should not be particularly nurturing. He believed that children should be treated as adults and not given much attention or affection. He thought that doing so would give children unrealistic expectations for their treatment in the world. This is a view that was criticized, and Watson did later admit he perhaps did not know enough about child development to speak on such issues. Nonetheless, his views were influential in the fields of psychology and child development.

### **Lessons to Be Learned**

John B. Watson overcame environmental obstacles of his own and benefited from the nurturing of his early mentors at college, despite stating that nurture wasn't necessary or could affect a child's expectations in life. Perhaps John's on childhood that lacked nurturing and his later success influenced that opinion. Watson contributed greatly to the understanding of certain behaviors, which may be conditioned by stimuli found in the environment, and revolutionized treatment of some behaviors. Therapists today utilize a similar method of "exposure" to help clients move past fears and other conditioned responses of all sorts of things.

If in your own life, you have faced adversity, developed fears, and find yourself held back by your circumstances, the right people and experiences can also help you to overcome those barriers. [Therapy is a tool that many people turn to for help to work past difficult situations and fears.](#)

Many therapists use the principles of behaviorism that were initially developed and popularized by John B. Watson. However, many psychologists also recognize that the views of learning advanced by Ivan Pavlov and John B. Watson underestimated the importance of thought or cognition.

Cognitive behavioral therapy or CBT is one of the most researched methods of therapy in use and shows success with all sorts of problems. CBT was developed by Aaron Beck, who incorporated elements of behaviorism. CBT examines the links between events or external circumstances, thoughts or meaning derived from those, and resulting behavior to help people manage behavior and emotions.

# Pavlov's Theory

During the 1890s, Russian physiologist, Ivan Pavlov was researching salivation in dogs in response to being fed. He inserted a small test tube into the cheek of each dog to measure saliva when the dogs were fed (with a powder made from meat). Pavlov predicted the dogs would salivate in response to the food placed in front of them, but he noticed that his dogs would begin to salivate whenever they heard the footsteps of his assistant who was bringing them the food.

When Pavlov discovered that any object or event which the dogs learned to associate with food (such as the lab assistant) would trigger the same response, he realized that he had made an important scientific discovery. Accordingly, he devoted the rest of his career to studying this type of learning.

## Pavlovian Conditioning

Pavlov (1902) started from the idea that there are some things that a dog does not need to learn. For example, dogs don't learn to salivate whenever they see food. This reflex is 'hard-wired' into the dog.

In [behaviourist terms](#), food is an unconditioned stimulus and salivation is an unconditioned response. (i.e., a stimulus-response connection that required no learning). In his experiment, Pavlov used a metronome as his neutral stimulus. By itself the metronome did not elicit a response from the dogs.

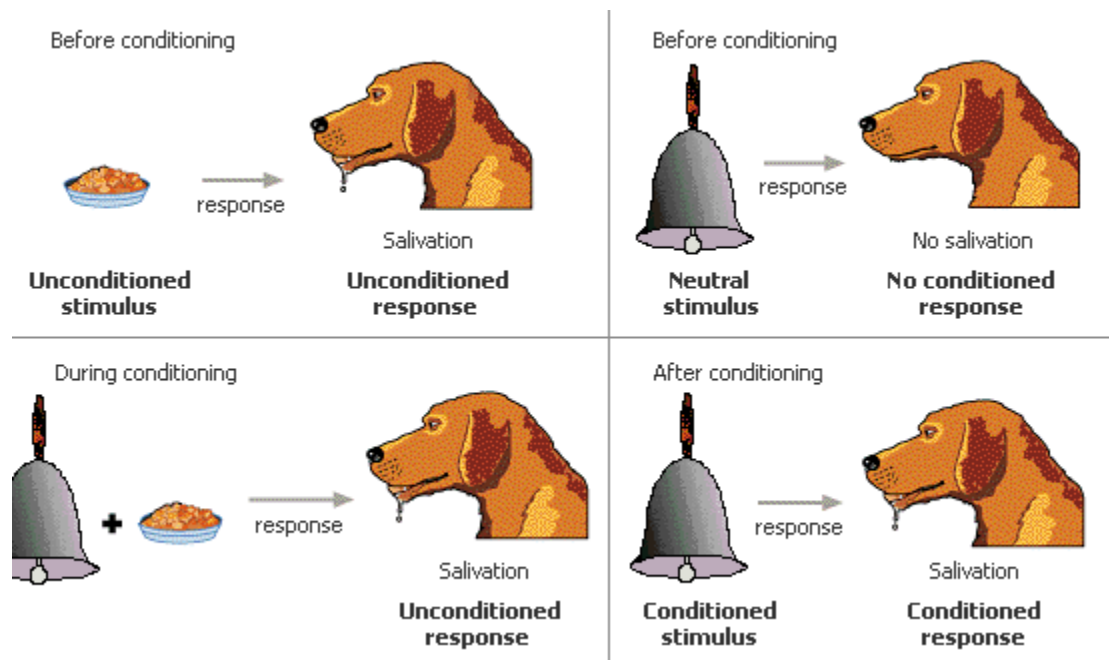
Next, Pavlov began the conditioning procedure, whereby the clicking metronome was introduced just before he gave food to his dogs. After a number of repeats (trials) of this procedure he presented the metronome on its own.

As you might expect, the sound of the clicking metronome on its own now caused an increase in salivation.

So the dog had learned an association between the metronome and the food and a new behaviour had been learned. Because this response was learned (or conditioned), it is called a conditioned response (and also known as a Pavlovian response). The neutral stimulus has become a conditioned stimulus.

Pavlov found that for associations to be made, the two stimuli had to be presented close together in time (such as a bell). He called this the law of temporal contiguity. If the time between the conditioned stimulus (bell) and unconditioned stimulus (food) is too great, then learning will not occur.

Pavlov and his studies of classical conditioning have become famous since his early work between 1890-1930. Classical conditioning is "classical" in that it is the first systematic study of basic laws of learning / conditioning.



## Summary

To summarize, **classical conditioning** (later developed by Watson, 1913) involves learning to associate an unconditioned stimulus that already brings about a particular response (i.e., a reflex) with a new (conditioned) stimulus, so that the new stimulus brings about the same response.



Pavlov developed some rather unfriendly technical terms to describe this process. The unconditioned stimulus (or UCS) is the object or event that originally produces the reflexive / natural response.

The response to this is called the unconditioned response (or UCR). The neutral stimulus (NS) is a new stimulus that does not produce a response.

Once the neutral stimulus has become associated with the unconditioned stimulus, it becomes a conditioned stimulus (CS). The conditioned response

# Skinner - Operant Conditioning

conditioning is a method of learning that occurs through rewards and punishments for behaviour. Through operant conditioning, an individual makes an association between a particular behaviour and a consequence (Skinner, 1938).

By the 1920s, John B. Watson had left academic psychology, and other [behaviourists](#) were becoming influential, proposing new forms of learning other than [classical conditioning](#). Perhaps the most important of these was Burrhus Frederic Skinner. Although, for obvious reasons, he is more commonly known as B.F. Skinner.

Skinner's views were slightly less extreme than those of [Watson](#) (1913). Skinner believed that we do have such a thing as a mind, but that it is simply more productive to study observable behaviour rather than internal mental events.

The work of Skinner was rooted in a view that classical conditioning was far too simplistic to be a complete explanation of complex human behaviour. He believed that the best way to understand behaviour is to look at the causes of an action and its consequences. He called this approach operant conditioning.

## BF Skinner: Operant Conditioning

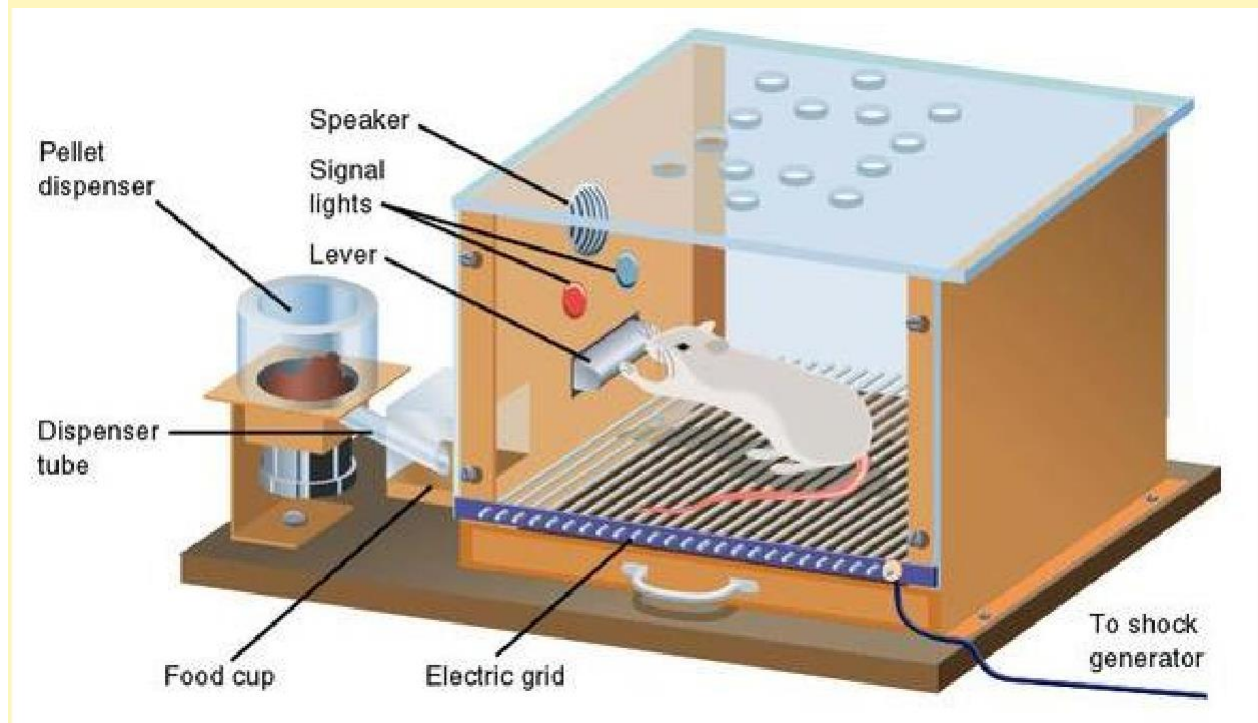
Skinner is regarded as the father of Operant Conditioning, but his work was based on [Thorndike's \(1898\) law of effect](#). According to this principle, behaviour that is followed by pleasant consequences is likely to be repeated, and behaviour followed by unpleasant consequences is less likely to be repeated.

Skinner introduced a new term into the Law of Effect - Reinforcement. Behaviour which is reinforced tends to be repeated (i.e., strengthened); behaviour which is not reinforced tends to die out-or be extinguished (i.e., weakened).

Skinner (1948) studied operant conditioning by conducting experiments using animals which he placed in a '*Skinner Box*' which was similar to Thorndike's puzzle box.

Skinner identified three types of responses, or operant, that can follow behaviour.

- **Neutral operants:** responses from the environment that neither increase nor decrease the probability of a behaviour being repeated.
- **Reinforcers:** Responses from the environment that increase the probability of a behaviour being repeated. Reinforcers can be either positive or negative.
- **Punishers:** Responses from the environment that decrease the likelihood of a behaviour being repeated. Punishment weakens behaviour.



# Positive Reinforcement

Skinner showed how positive reinforcement worked by placing a hungry rat in his Skinner box. The box contained a lever on the side, and as the rat moved about the box, it would accidentally knock the lever. Immediately it did so a food pellet would drop into a container next to the lever.

The rats quickly learned to go straight to the lever after a few times of being put in the box. The consequence of receiving food if they pressed the lever ensured that they would repeat the action again and again.

Positive reinforcement strengthens a behaviour by providing a consequence an individual finds rewarding. For example, if your teacher gives you £5 each time you complete your homework (i.e., a reward) you will be more likely to repeat this behaviour in the future, thus strengthening the behaviour of completing your homework

# Negative Reinforcement

The removal of an unpleasant reinforcer can also strengthen behaviour. This is known as negative reinforcement because it is the removal of an adverse stimulus which is „rewarding‘ to the animal or person. Negative reinforcement strengthens behaviour because it stops or removes an unpleasant experience.

For example, if you do not complete your homework, you give your teacher £5. You will complete your homework to avoid paying £5, thus strengthening the behaviour of completing your homework.

Skinner showed how negative reinforcement worked by placing a rat in his Skinner box and then subjecting it to an unpleasant electric current which caused it some discomfort. As the rat moved about the box it would accidentally knock the lever. Immediately it did so the electric current would be switched off. The rats quickly learned to go straight to the lever after a few times of being put in the box. The consequence of escaping the electric current ensured that they would repeat the action again and again.

In fact Skinner even taught the rats to avoid the electric current by turning on a light just before the electric current came on. The rats soon learned to press the lever when the light came on because they knew that this would stop the electric current being switched on.

These two learned responses are known as *Escape Learning* and *Avoidance Learning*.

# punishment (weakens behaviour)

Punishment is defined as the opposite of reinforcement since it is designed to weaken or eliminate a response rather than increase it. It is an aversive event that decreases the behaviour that it follows.

Like reinforcement, punishment can work either by directly applying an unpleasant stimulus like a shock after a response or by removing a potentially rewarding stimulus, for instance, deducting someone's pocket money to punish undesirable behaviour.

Note: It is not always easy to distinguish between punishment and negative reinforcement.

There are many problems with using punishment, such as:

- Punished behaviour is not forgotten, it's suppressed - behaviour returns when punishment is no longer present.
- Causes increased aggression - shows that aggression is a way to cope with problems.
- Creates fear that can generalize to undesirable behaviours, e.g., fear of school.
- Does not necessarily guide toward desired behaviour - reinforcement tells you what to do, punishment only tells you what not to do.

## Schedules of Reinforcement

Imagine a rat in a "Skinner box." In operant conditioning, if no food pellet is delivered immediately after the lever is pressed then after several attempts the rat stops pressing the lever (how long would someone continue to go to work if their employer stopped paying them?). The behaviour has been extinguished.

Behaviourists discovered that different patterns [\(or schedules\) of reinforcement](#) had different effects on the speed of learning and extinction. Ferster and Skinner (1957) devised different ways of delivering reinforcement and found that this had effects on

1. **The Response Rate** - The rate at which the rat pressed the lever (i.e., how hard the rat worked).
2. **The Extinction Rate** - The rate at which lever pressing dies out (i.e., how soon the rat gave up).

Skinner found that the type of reinforcement which produces the slowest rate of extinction (i.e., people will go on repeating the behaviour for the longest time without reinforcement) is variable-ratio reinforcement. The type of reinforcement which has the quickest rate of extinction is continuous reinforcement.

## (A) Continuous Reinforcement

An animal/human is positively reinforced every time a specific behaviour occurs, e.g., every time a lever is pressed a pellet is delivered, and then food delivery is shut off.

- Response rate is SLOW
- Extinction rate is FAST

## (B) Fixed Ratio Reinforcement

Behaviour is reinforced only after the behaviour occurs a specified number of times. e.g., one reinforcement is given after every so many correct responses, e.g., after every 5th response. For example, a child receives a star for every five words spelled correctly.

- Response rate is FAST
- Extinction rate is MEDIUM

## (C) Fixed Interval Reinforcement

One reinforcement is given after a fixed time interval providing at least one correct response has been made. An example is being paid by the hour. Another example would be every 15 minutes (half hour, hour, etc.) a pellet is delivered (providing at least one lever press has been made) then food delivery is shut off.

- Response rate is MEDIUM
- Extinction rate is MEDIUM

## (D) Variable Ratio Reinforcement

Behaviour is reinforced after an unpredictable number of times. For examples gambling or fishing.

- Response rate is FAST
- Extinction rate is SLOW (very hard to extinguish because of unpredictability)

## (E) Variable Interval Reinforcement

Providing one correct response has been made, reinforcement is given after an unpredictable amount of time has passed, e.g., on average every 5 minutes. An example is a self-employed person being paid at unpredictable times.

- Response rate is FAST
- Extinction rate is SLOW

## Summary

Looking at Skinner's classic studies on pigeons' / rat's behaviour we can identify some of the major assumptions of the [behaviourist approach](#).

- [Psychology should be seen as a science](#), to be studied in a scientific manner. Skinner's study of behaviour in rats was conducted under carefully controlled [laboratory conditions](#).
- Behaviorism is primarily concerned with observable behaviour, as opposed to internal events like thinking and emotion. Note that Skinner did not say that the rats learned to press a lever because they wanted food. He instead concentrated on describing the easily observed behaviour that the rats acquired.
- The major influence on human behaviour is learning from our environment. In the Skinner study, because food followed a particular behaviour the rats learned to repeat that behaviour, e.g., operant conditioning.
- There is little difference between the learning that takes place in humans and that in other animals. Therefore research (e.g., operant conditioning) can be carried out on animals (Rats / Pigeons) as well as on humans. Skinner proposed that the way

humans learn behaviour is much the same as the way the rats learned to press a lever.

So, if your layperson's idea of psychology has always been of people in laboratories wearing white coats and watching hapless rats try to negotiate mazes in order to get to their dinner, then you are probably thinking of behavioural psychology.

**Behaviorism** and its offshoots tend to be among the most scientific of the **psychological perspectives**. The emphasis of behavioural psychology is on how we learn to behave in certain ways.

We are all constantly learning new behaviours and how to modify our existing behaviour. Behavioural psychology is the psychological approach that focuses on how this learning takes place.

## Critical Evaluation

Operant conditioning can be used to explain a wide variety of behaviours, from the process of learning, to addiction and **language acquisition**. It also has practical application (such as token economy) which can be applied in classrooms, prisons and psychiatric hospitals.

However, operant conditioning fails to take into account the role of inherited and **cognitive factors** in learning, and thus is an incomplete explanation of the learning process in humans and animals.



# Cognitive Development: The Theory of Jean Piaget

Cognition refers to thinking and memory processes, and **cognitive development** refers to long-term changes in these processes. One of the most widely known perspectives about cognitive development is the cognitive stage theory of a Swiss psychologist named **Jean Piaget**. Piaget created and studied an account of how children and youth gradually become able to think logically and scientifically. Because his theory is especially popular among educators, we focus on it in this chapter.

Piaget was a **psychological constructivist**: in his view, learning proceeded by the interplay of assimilation (adjusting new experiences to fit prior concepts) and accommodation (adjusting concepts to fit new experiences). The to-and-fro of these two processes leads not only to short-term learning, but also to long-term **developmental change**. The long-term developments are really the main focus of Piaget's cognitive theory.

After observing children closely, Piaget proposed that cognition developed through distinct stages from birth through the end of adolescence. By stages he meant a sequence of thinking patterns with four key features:

1. They always happen in the same order.
2. No stage is ever skipped.
3. Each stage is a significant transformation of the stage before it.
4. Each later stage incorporated the earlier stages into itself.

Basically this is the "staircase" model of development mentioned at the beginning of this chapter. Piaget proposed four major stages of cognitive development, and called them (1) sensorimotor intelligence, (2) preoperational thinking, (3) concrete operational thinking, and (4) formal operational thinking. Each stage is correlated with an age period of childhood, but only approximately.

## The sensorimotor stage: birth to age 2

In Piaget's theory, the sensorimotor stage is first, and is defined as the period when infants "think" by means of their senses and motor actions. As every new parent will attest, infants continually touch, manipulate, look, listen to, and even bite and chew objects. According to Piaget, these actions allow them to learn about the world and are crucial to their early cognitive development.

The infant's actions allow the child to represent (or construct simple concepts of) objects and events. A toy animal may be just a confusing array of sensations at first, but by looking, feeling, and manipulating it repeatedly, the child gradually organizes her sensations and actions into a stable concept, *toy animal*. The representation acquires a

permanence lacking in the individual experiences of the object, which are constantly changing. Because the representation is stable, the child “knows,” or at least believes, that toy animal exists even if the actual *toy animal* is temporarily out of sight. Piaget called this sense of stability **object permanence**, a belief that objects exist whether or not they are actually present. It is a major achievement of sensorimotor development, and marks a qualitative transformation in how older infants (24 months) think about experience compared to younger infants (6 months).

During much of infancy, of course, a child can only barely talk, so sensorimotor development initially happens without the support of language. It might therefore seem hard to know what infants are thinking, but Piaget devised several simple, but clever experiments to get around their lack of language, and that suggest that infants do indeed represent objects even without being able to talk (Piaget, 1952). In one, for example, he simply hid an object (like a toy animal) under a blanket. He found that doing so consistently prompts older infants (18-24 months) to search for the object, but fails to prompt younger infants (less than six months) to do so. (You can try this experiment yourself if you happen to have access to young infant.) “Something” motivates the search by the older infant even without the benefit of much language, and the “something” is presumed to be a permanent concept or representation of the object.

## The preoperational stage: age 2 to 7

In the **preoperational stage**, children use their new ability to represent objects in a wide variety of activities, but they do not yet do it in ways that are organized or fully logical. One of the most obvious examples of this kind of cognition is **dramatic play**, the improvised make-believe of preschool children. If you have ever had responsibility for children of this age, you have likely witnessed such play. Ashley holds a plastic banana to her ear and says: “Hello, Mom? Can you be sure to bring me my baby doll? OK!” Then she hangs up the banana and pours tea for Jeremy into an invisible cup. Jeremy giggles at the sight of all of this and exclaims: “Rinnng! Oh Ashley, the phone is ringing again! You better answer it.” And on it goes.

In a way, children immersed in make-believe seem “mentally insane,” in that they do not think realistically. But they are not truly insane because they have not really taken leave of their senses. At some level, Ashley and Jeremy always know that the banana is still a banana and not *really* a telephone; they are merely *representing* it as a telephone. They are thinking on two levels at once—one imaginative and the other realistic. This dual processing of experience makes dramatic play an early example of **metacognition**, or reflecting on and monitoring of thinking itself. Metacognition is a highly desirable skill for success in school, one that teachers often encourage (Bredenkamp & Copple, 1997; Paley, 2005). Partly for this reason, teachers of young children (preschool, kindergarten, and even first or second grade) often make time and space in their classrooms for dramatic play, and sometimes even participate in it themselves to help develop the play further.

## The concrete operational stage: age 7 to 11

As children continue into elementary school, they become able to represent ideas and events more flexibly and logically. Their rules of thinking still seem very basic by adult standards and usually operate unconsciously, but they allow children to solve problems more systematically than before, and therefore to be successful with many academic tasks. In the concrete operational stage, for example, a child may unconsciously follow the rule: "If nothing is added or taken away, then the amount of something stays the same." This simple principle helps children to understand certain arithmetic tasks, such as in adding or subtracting zero from a number, as well as to do certain classroom science experiments, such as ones involving judgments of the amounts of liquids when mixed. Piaget called this period the **concrete operational stage** because children mentally "operate" on concrete objects and events. They are not yet able, however, to operate (or think) systematically about *representations* of objects or events. Manipulating representations is a more abstract skill that develops later, during adolescence.

Concrete operational thinking differs from preoperational thinking in two ways, each of which renders children more skilled as students. One difference is **reversibility**, or the ability to think about the steps of a process in any order. Imagine a simple science experiment, for example, such as one that explores why objects sink or float by having a child place an assortment of objects in a basin of water. Both the preoperational and concrete operational child can recall and describe the steps in this experiment, but only the concrete operational child can recall them *in any order*. This skill is very helpful on any task involving multiple steps—a common feature of tasks in the classroom. In teaching new vocabulary from a story, for another example, a teacher might tell students: "First make a list of words in the story that you do not know, then find and write down their definitions, and finally get a friend to test you on your list." These directions involve repeatedly remembering to move back and forth between a second step and a first—a task that concrete operational students—and most adults—find easy, but that preoperational children often forget to do or find confusing. If the younger children are to do this task reliably, they may need external prompts, such as having the teacher remind them periodically to go back to the story to look for more unknown words

The other new feature of thinking during the concrete operational stage is the child's ability to **decenter**, or focus on more than one feature of a problem at a time. There are hints of decentration in preschool children's dramatic play, which requires being aware on two levels at once—knowing that a banana can be both a banana and a "telephone." But the decentration of the concrete operational stage is more deliberate and conscious than preschoolers' make-believe. Now the child can attend to two things at once quite purposely. Suppose you give students a sheet with an assortment of subtraction problems on it, and ask them to do this: "Find all of the problems that involve two-digit subtraction *and* that involve borrowing from the next column. Circle and solve *only* those problems." Following these instructions is quite possible for a concrete operational student (as long as they have been listening!) because the student can attend to the two

subtasks simultaneously—finding the two-digit problems *and* identifying which actually involve borrowing. (Whether the student actually knows how to borrow however, is a separate question.)

In real classroom tasks, reversibility and decentration often happen together. A well-known example of joint presence is Piaget's experiments with **conservation**, the belief that an amount or quantity stays the same even if it changes apparent size or shape (Piaget, 2001; Matthews, 1998). Imagine two identical balls made of clay. Any child, whether preoperational or concrete operational, will agree that the two indeed have the same amount of clay in them simply because they look the same. But if you now squish one ball into a long, thin "hot dog," the preoperational child is likely to say that the amount of that ball has changed—either because it is longer or because it is thinner, but at any rate because it now looks different. The concrete operational child will not make this mistake, thanks to new cognitive skills of reversibility and decentration: for him or her, the amount is the same because "you could squish it back into a ball again" (reversibility) and because "it may be longer, but it is also thinner" (decentration). Piaget would say the concrete operational child "has conservation of quantity."

The classroom examples described above also involve reversibility and decentration. As already mentioned, the vocabulary activity described earlier requires reversibility (going back and forth between identifying words and looking up their meanings); but it can also be construed as an example of decentration (keeping in mind two tasks at once—word identification *and* dictionary search). And as mentioned, the arithmetic activity requires decentration (looking for problems that meet two criteria *and* also solving them), but it can also be construed as an example of reversibility (going back and forth between subtasks, as with the vocabulary activity). Either way, the development of concrete operational skills support students in doing many basic academic tasks; in a sense they make ordinary schoolwork possible

## The formal operational stage: age 11 and beyond

In the last of the Piagetian stages, the child becomes able to reason not only about tangible objects and events, but also about hypothetical or abstract ones. Hence it has the name **formal operational stage**—the period when the individual can "operate" on "forms" or representations. With students at this level, the teacher can pose hypothetical (or contrary-to-fact) problems: "What *if* the world had never discovered oil?" or "What *if* the first European explorers had settled first in California instead of on the East Coast of the United States?" To answer such questions, students must use **hypothetical reasoning**, meaning that they must manipulate ideas that vary in several ways at once, and do so entirely in their minds

The hypothetical reasoning that concerned Piaget primarily involved scientific problems. His studies of formal operational thinking therefore often look like problems that middle or high school teachers pose in science classes. In one problem, for example, a young person is presented with a simple pendulum, to which different amounts of weight can be hung (Inhelder & Piaget, 1958). The experimenter asks: "What determines how fast

the pendulum swings: the length of the string holding it, the weight attached to it, or the distance that it is pulled to the side?|| The young person is not allowed to solve this problem by trial-and-error with the materials themselves, but must reason a way to the solution mentally. To do so systematically, he or she must imagine varying each factor separately, while also imagining the other factors that are held constant. This kind of thinking requires facility at manipulating mental representations of the relevant objects and actions—precisely the skill that defines formal operations.

As you might suspect, students with an ability to think hypothetically have an advantage in many kinds of school work: by definition, they require relatively few props|| to solve problems. In this sense they can in principle be more self-directed than students who rely only on concrete operations—certainly a desirable quality in the opinion of most teachers. Note, though, that formal operational thinking is desirable but not sufficient for school success, and that it is far from being the only way that students achieve educational success. Formal thinking skills do not insure that a student is motivated or well-behaved, for example, nor does it guarantee other desirable skills, such as ability at sports, music, or art. The fourth stage in Piaget's theory is really about a particular kind of formal thinking, the kind needed to solve scientific problems and devise scientific experiments. Since many people do not normally deal with such problems in the normal course of their lives, it should be no surprise that research finds that many people never achieve or use formal thinking fully or consistently, or that they use it only in selected areas with which they are very familiar (Case & Okamoto, 1996). For teachers, the limitations of Piaget's ideas suggest a need for additional theories about development—ones that focus more directly on the social and interpersonal issues of childhood and adolescence. The next sections describe some of these.