CHAPTER 13
MOTIVATION AND EMOTION

The happiest countries had certain characteristics in common. They tended to be modern societies supportive of individualism. Freedom, in the form of personal and political liberty, was key. Perhaps surprisingly, the degree of income inequality and the amount of state-sponsored services did not seem to matter. But confidence in the honesty and efficacy of the government did.

So if the government of Moldova instituted the same policies as Denmark, would its people soon be just as happy as the Danes? They would be happier, but other factors still apply. Veenhoven found that the characteristics of the society in which you live and your position in that society affect your happiness. But so do your health, personality, and way of life. That helps to explain why there are still unhappy people in Denmark and the other highly-happy countries, as well as happy people in Tanzania and the other least-happy countries. Both your society and your psychology affect your happiness.

Politicians have begun to take note of Veenhoven's work. Most countries focus on improving economic growth, judged by gross domestic product (GDP) and similar measures. But King Jigme Singye Wangchuck of Bhutan declared that his country would instead devote its efforts to raising GNH—gross national happiness. British politician David Cameron created a Quality of Life Policy Group aimed at raising GWB—general well-being. The success of such efforts may hinge on how well policymakers understand motivation and emotion, which are the topics of this chapter.

What do you think?

1. What characteristics did the happiest countries share?
2. What would it take for gross national happiness to replace gross domestic product as the chief measure of national success?

Chapter at a Glance

SECTION 1: The Psychology of Motivation

- Motivations can be analyzed as needs and drives.
- Psychologists have developed several different theories of motivation, including instinct theory, drive-reduction theory, humanistic theory, and sociocultural theory.

SECTION 2: Biological Needs: Focus on Hunger

- Biological needs such as hunger involve both physiological and psychological factors.
- Obesity has many causes but also many solutions.

SECTION 3: Psychological Needs

- All people seek sensory stimulation.
- Some people feel driven to high achievement.
- People seek to balance their beliefs, actions, and thoughts.
- Humans are motivated to be social.

SECTION 4: Emotions

- Emotions have biological, cognitive, and behavioral components.
- Facial expressions of emotion are the same around the world.
- Psychologists have developed several different theories of emotion.

SECTION 1

The Psychology of Motivation

Before You Read

Main Idea
Psychologists study motivation to explain why people behave the way they do.

Reading Focus
1. What does the psychology of motivation deal with?
2. What are the major theories of motivation?

Vocabulary
motive
need
drives
instincts
homeostasis
self-actualization

TAKING NOTES Use a graphic organizer like this one to take notes on the psychology of motivation.

The Psychology of Motivation	
Motivation	Theories

Confronting Fear and Failure

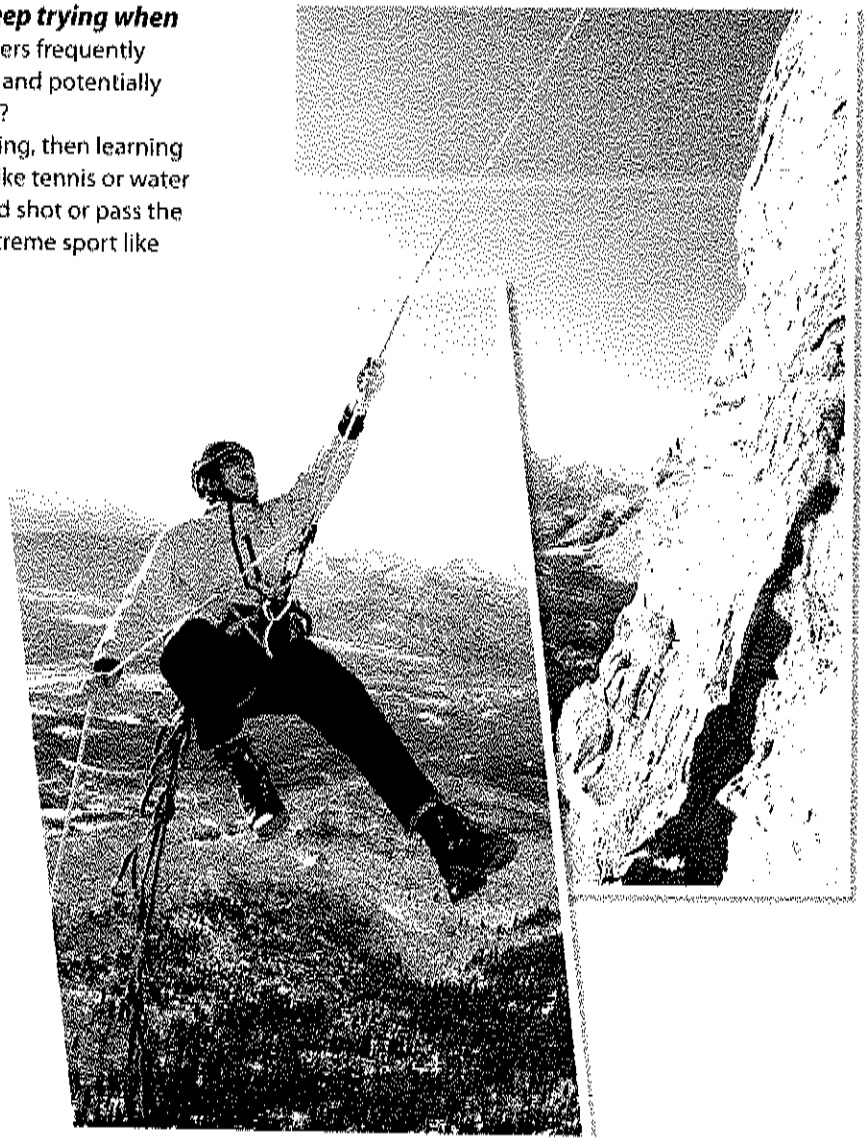
PSYCHOLOGY CLOSE UP

What makes rock climbers keep trying when they keep falling? Rock climbers frequently suffer falls that are often painful and potentially deadly. What motivates them to keep coming back?

Learning any new sport involves trying and failing, then learning from your mistakes. If the new sport is something like tennis or water polo, the consequences are small. You may hit a bad shot or pass the ball to the opposing team. But if you take up an extreme sport like rock climbing, watch out. The consequences of failure become much more significant.

Psychological researchers have identified several different factors that motivate rock climbers. Some rock climbers enjoy nature and appreciate being away from modern life. Others find motivation in competing with fellow climbers. Still others seek the mental strength to master their fears and the physical strength and skills needed to master the rock. And, of course, almost every rock climber could be counted among the thrill seekers.

Any one of these motivators, by itself, might not be enough to overcome fear of injury, especially after a climber experiences a bad fall. But in combination, these factors give many climbers the mental strength to get back on the rock.



Rock climbing is a dangerous sport that requires both mental and physical strength.

Motivation

Why do some people like to travel to faraway places or to try new foods? Why are other people happy to stay home and eat the same meals every week? The answer to these questions—and other questions about why people do the things they do—relates to motivation. A **motive** is a stimulus that moves a person to behave in ways designed to accomplish a specific goal.

Motives are considered theoretical states because they cannot be seen or measured directly. Psychologists assume that people and other organisms are motivated when they observe the people trying to reach their goals. The psychology of motivation deals with the *whys* of behavior.

Needs When psychologists speak of motives, they also often speak of needs. A **need** is a condition in which we require something we lack. People have both biological and psychological needs. People fulfill biological needs to survive. Examples of biological needs include the need for oxygen and food. Biological needs such as for food or sleep occur because of physical deprivation. That is, people feel hungry or sleepy when they have not eaten or slept for a while.

Achievement, self-esteem, a sense of belonging, and social approval are examples of psychological needs. Like biological needs, psychological needs motivate people to accomplish certain goals.

However, psychological needs differ from biological needs in two important ways. First, psychological needs are not necessarily based on deprivation. A person with a need to achieve an A on a test may already be an honor roll student. Second, unlike biological needs, which are inborn, psychological needs may be learned.

People possess common biological characteristics, thus they have similar physical needs. For example, all people must eat to survive; therefore all people need food. However, people have different psychological needs because they learn from a variety of experiences. Psychological needs are shaped by culture and learning, so people's psychological needs differ markedly. For example, some people prefer vegetarian diets because they believe it is morally wrong to kill animals for food.

Drives Biological needs and psychological needs give rise to **drives**—the forces that motivate an organism to take action. The biological need for food gives rise to the hunger drive. The biological need for water gives rise to the thirst drive.

Although hunger and thirst are aroused by biological needs, the *experience* of them is psychological. The longer we are deprived of something such as food or water, the stronger our drive becomes. For example, our hunger drive is stronger 6 hours after eating than it is 20 minutes after eating.

Reading Check **Identify Supporting Details**
What are the two types of needs?

Theories of Motivation

Psychologists agree that motives prompt behavior, but they are not in agreement about the nature of motivation. The leading theories of motivation are instinct theory, drive-reduction theory, humanistic theory, and sociocultural theory.

Instinct Theory Behavior patterns genetically transmitted from generation to generation are known as **instincts.** Sometimes they are called fixed-action patterns. Researchers have discovered that many animals are born to act in certain ways in certain situations.

ACADEMIC VOCABULARY
Isolation being alone or away from others

Siamese fighting fish reared in isolation display the same instinctive behavior as do those raised with other Siamese fighting fish. Males fan their fins and gills in the typical threatening posture when other males are introduced into their tanks. Similarly, bees perform an instinctive "dance" to relay the location of food to other bees. Scientists have found that bees from different parts of the world use essentially the same dances.

However, not all animal behavior is purely instinctive. Studies have shown that birds acquire the songs characteristic of their species only partly by instinct. Young birds need to hear the songs of their species in order to learn how to communicate effectively.

Psychologists once believed that human behavior, like that of animals, is instinctive. In the late 1800s and early 1900s, psychologists William James and William McDougall argued that people have instincts that foster survival and social behavior.

Today, however, most psychologists do not believe that human behavior is primarily motivated by instinct. If a behavior pattern is instinctive, they argue, it must be found throughout a species. However, there is so much variation in the way people behave that much of human behavior is unlikely to be instinctive.

Drive-reduction Theory Psychologist Clark Hull formulated the drive-reduction theory in the 1930s. Drive-reduction theory is based on learning as well as motivation. According to this theory, people and animals experience a drive arising from a need as an unpleasant tension. They learn to do whatever will reduce that tension by reducing the drive, such as eating to reduce their hunger drive.

Some drives, such as hunger, are caused by biological needs, which are inborn. Other drives, such as a drive for money, are learned from experience. According to drive-reduction theory, people will try to reduce these learned drives, just as they try to reduce their biological drives.

Basic drives, such as hunger, motivate us to restore an internal state of equilibrium, or balance. The tendency to maintain this state of equilibrium in the body is called **homeostasis.** Homeostasis works like a thermostat. When room temperature drops below a certain point—called the set point—the heat comes on. The heat stays on until the set point is reached. Similarly, according to the theory, when people are hungry, they will eat until they reach a level at which they are no longer hungry.

Drive-reduction theory seems to apply to many biological drives, including hunger and thirst. Yet people sometimes eat when they are not hungry. They also often act to increase rather than decrease the tension they experience. For example, some people enjoy riding roller coasters and driving fast cars. Yet these activities increase rather than decrease the tension they experience. Clearly, drive-reduction theory does not explain all motivation.

Humanistic Theory Some psychologists, known as humanists, argue that instinct theory and drive-reduction theory suggest that human behavior is mechanical and directed only toward surviving and reducing tension. According to humanistic psychologists, however, people are also motivated by the conscious desire for personal growth and artistic fulfillment. In fact, they argue, sometimes our drive to fulfill such needs outweighs our drive to meet more basic needs.

For example, some people seek artistic or political goals, even though they may have difficulty affording food or may have to give up a certain level of comfort or security to achieve their goals. Some artists, musicians, and writers commit themselves to their artistic goals even when they are unable to make a living by doing so.

Abraham Maslow, one of the pioneers of humanistic psychology, pointed out that some people are willing to tolerate pain, hunger, and other kinds of tension to achieve their artistic or political goals. An aspiring musician might spend countless hours practicing the violin and learning new songs. Instinct theory and drive-reduction theory might have difficulty explaining this behavior. But humanistic theory would suggest that the musician's desire to achieve artistic fulfillment makes her feel that it is worth sacrificing other desirable activities, such as spending time with her friends.

Maslow claimed that people strive to fulfill their capacity for self-actualization. The term **self-actualization** refers to the need to become what one believes he or she is capable of being. The desire to fulfill oneself takes one past the point of just satisfying one's physical needs. Maslow believed that striving to become something or to do something meaningful in one's life is as essential to human well-being as food.

Maslow organized human needs into a hierarchy—a ranking of items in order of importance. (See the chart on the next page.) At the bottom of the hierarchy are biological needs. Next comes the need for safety, followed by the need for love and belongingness, then the need for esteem. The need for self-actualization is at the top. Maslow believed that once a person's needs at one level are satisfied, the person will move on to try to satisfy needs at the next higher level. For example, once food and drink have satisfied a person's biological needs, that person will then seek means to satisfy safety needs, such as the needs for shelter and security.

Maslow believed that people rise naturally through the levels of this hierarchy as long as they do not encounter stiff obstacles along the way. Many people seek self-actualization through work, hobbies, and aesthetic experiences such as music, art, and poetry.

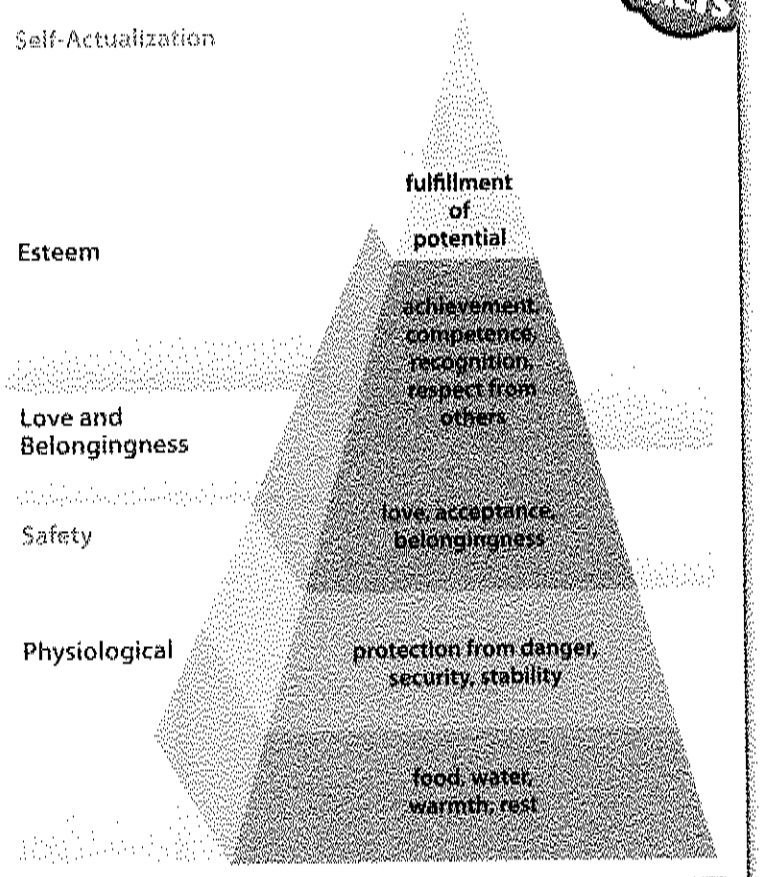
Critics of Maslow's hierarchy of needs argue that it does not apply to everyone. For example, some people show little interest in satisfying higher-level needs such as achievement and social recognition, even after their biological and safety needs have been met. But, one might ask, does their apparent lack of interest stem from not being motivated to seek achievement or from having met with overwhelming obstacles?

Sociocultural Theory Sociocultural theorists argue that even if basic drives such as hunger are inborn, cultural experiences and factors influence the behavior that people use to satisfy those drives. The foods people eat and the way they eat those foods are shaped by culture. Cultural experience affects whether people prefer hot dogs or tacos, coffee or tea, apples or pineapples. Cultural experiences also affect whether people prefer kissing lips or rubbing noses to express feelings of affection.

Reading Check **Compare** According to humanistic psychology, what is wrong with instinct theory and drive-reduction theory?

MASLOW'S HIERARCHY OF NEEDS

Quick Facts



Skills Focus **INTERPRETING CHARTS** On what level would getting named to the dean's list fall?

SECTION 1 Assessment

Reviewing Main Ideas and Vocabulary

1. **Define** What is a motive?
2. **Describe** How are needs and drives related?
3. **Recall** What word names our bodies' tendency to maintain a state of equilibrium?

Thinking Critically

4. **Explain** Why do psychologists think that little human behavior is instinctive?
5. **Elaborate** By the end of the school day, most students and teachers are eager to finish classes. Use drive-reduction theory to describe why this happens.
6. **Interpret** Using your notes and a graphic organizer like the one below, describe how the major theories of motivation explain thirst.

Theory	Explanation of Thirst

FOCUS ON WRITING

7. **Descriptive** Have you achieved self-actualization? Describe what you have done—or what you hope to do—that might reach that level on Maslow's hierarchy. Explain how your motivation was—or will be—distinct from the other levels.

SECTION 2

Biological Needs: Focus on Hunger

Before You Read

Main Idea
Biological needs such as hunger involve both physiological and psychological factors.

Reading Focus
1. What are the components of the hunger drive?
2. What causes obesity?

Vocabulary
obese

TAKING NOTES Use a graphic organizer like this one to take notes on biological needs.

Hunger	Obesity

PSYCHOLOGY CLOSE UP

Why do people keep eating junk food?

It seems that every week another study shows how junk foods ruin our health. For example, on the Department of Health and Human Services list of leading causes of premature death in the United States, poor diet and lack of exercise are second only to tobacco use.

Despite such warnings, Americans can't seem to stop eating junk food. Hamburgers made up about 11 percent of all restaurant sales in 2014. U.S. consumers spend about $15 billion per year on ice cream and about $25 billion on candy.

Why are these bad-for-you foods so hard to resist? Part of the answer is biological. Most junk food contains high amounts of sugar or fat or salt, or some combination of the three. Each of these ingredients triggers reward receptors in our brains that tell us "good! good!" and "more! more!" Until recently, it made sense to follow those signals. There was no such thing as a donut. Fries did not exist. Unless you were very well-to-do, rich foods were rare treats.

Which points up another part of the problem: These days, junk food is easier to find than healthy food. There's a convenience store full of sodas and snacks on every corner, and rows of fast food restaurants line the streets.

In addition, junk foods tend to be cheaper than real foods. Agricultural subsidies reduce the prices of products made with corn syrup, sugar, and vegetable oils. And processed foods can sit on store shelves much longer than fresh fruits and vegetables.

But change seems to be on the horizon. Sales of most junk foods have stopped rising, and most fast food restaurants now offer some healthy options.

The Hunger Drive

Biological needs are based mainly on body tissue needs, such as the needs for food, water, air, temperature regulation, and pain avoidance. However, even basic biological needs can be complex because they involve psychological as well as physiological factors. People need food to survive, but food can mean much more than mere survival. Food can be a symbol of the closeness of the family or group of friends, or it can be something to make a stranger feel welcome. Food can also be part of a pleasurable social experience with others.

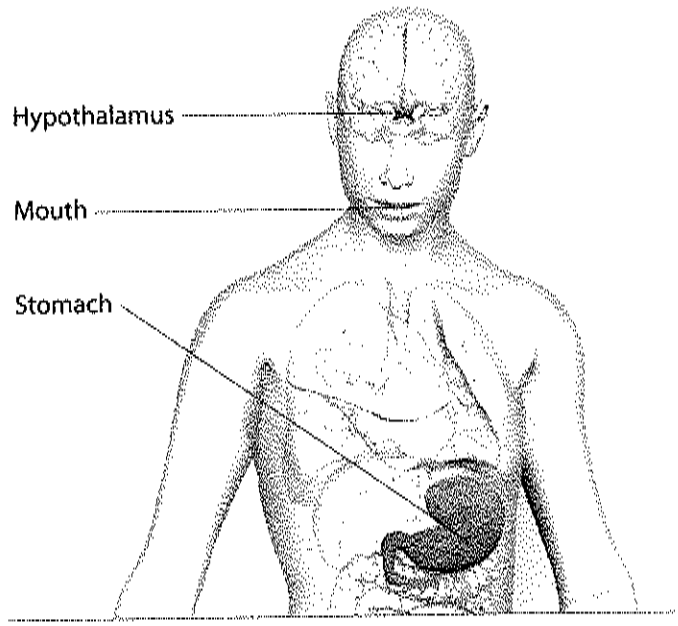
Hunger is regulated by both biological and psychological factors. In this section, we will look at the mechanisms in the body that are involved in the hunger drive. We will also examine the psychological influences that are involved in hunger.

The Role of the Mouth The acts of chewing and swallowing provide certain sensations that help satisfy the hunger drive. In a "sham feeding" experiment conducted in the 1940s, tubes were implanted in dogs' throats so that the food they swallowed was dropped out of their bodies instead of moving into their stomachs. Nevertheless, the dogs stopped feeding after a brief period. Based on the finding of this and other studies, researchers have concluded that chewing and swallowing apparently help reduce feelings of hunger in animals as well as in people.

The hunger drive is usually satisfied when the body digests food and the nutrients in the food enter the bloodstream. However, this takes time. Chewing and swallowing help let the body know that its hunger drive is being satisfied, thus saving us from eating more than is needed. Still, it is wise to stop eating *before* feeling completely full because it takes time for the digestive tract to metabolize food and provide signals to the brain that the need for food has been satisfied.

The Role of the Stomach It was once believed that the growls and contractions (called hunger pangs) of an empty stomach were the cause of hunger. Researchers did, in fact, find that when a person is hungry, his or her stomach does contract. However, they also found that the stomach contracts at other times as well. Furthermore, people who have surgery to remove their stomachs still experience hunger. Thus, the researchers concluded that hunger pangs felt in the stomach play a role in hunger but are not the main factor involved in signaling hunger.

HUNGER—BIOLOGICAL FACTORS



Hunger is partly driven by complex physiological processes.

Skills Focus: INTERPRETING VISUALS What larger organ is the hypothalamus a part of?

The Hypothalamus The level of sugar in the blood and the part of the brain known as the hypothalamus are key influences on feelings of hunger. When people have not eaten for a while, their blood sugar level drops. Information about the sugar level is then communicated to the hypothalamus, which is known to be involved in the regulation of body temperature and various aspects of psychological motivation and emotion.

Researchers have learned more about how the hypothalamus functions through research on laboratory animals. In these studies, researchers implanted electrodes on the hypothalami and observed the effects on the animals' behavior. They found that the side of the hypothalamus, called the lateral hypothalamus (LH), appears to function as a "start-eating" center. If the LH is electrically stimulated, the rat will begin to eat, even if it has just finished eating a large meal.

Conversely, if a lesion is made in the LH, the rat may stop eating altogether and eventually die of starvation if it is not force-fed.

The underside of the hypothalamus, called the ventromedial hypothalamus (VMH), apparently functions as a "stop-eating" center. When this center is electrically stimulated, the rat will stop eating. When this part of the hypothalamus is destroyed, the rat will continue to eat until it is several times its normal weight. The damage to the VMH interferes with the rat's ability to recognize that its hunger has been fulfilled, and the rat simply continues to nibble. Eventually, the rat's eating will level off and the rat will maintain the higher weight.

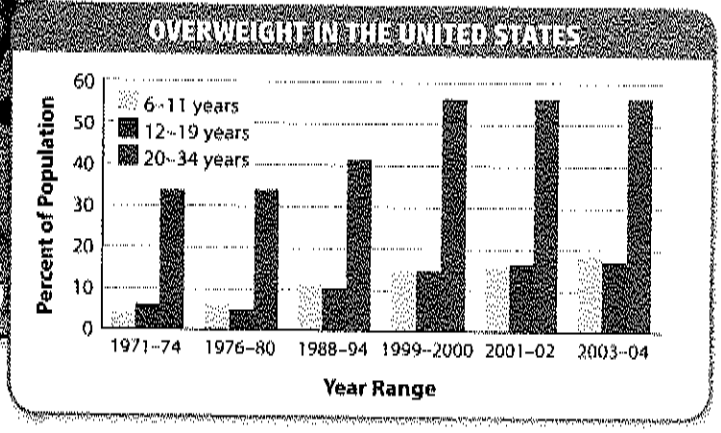
Psychological Influences Many biological factors affect the hunger drive. However, this is only part of the story. In human beings, psychological as well as biological factors affect feelings of hunger. For example, we usually eat more when we are in the presence of other people than when we are alone. You may not realize you are hungry until a friend mentions that he is hungry. Your friend, therefore, would have acted as a psychological influence on your hunger drive.

Learning that certain amounts of food or drink will produce a feeling of well-being and relaxation can cause people to eat and drink when they feel upset. For example, they may develop the habit of eating and drinking at the first sign of pressure or anxiety as a way to fend off feeling any negative emotions. People with a tendency to eat compulsively or drink alcohol excessively need to be alert to this tendency. Likewise, parents should consider whether it is wise to give children food as a reward for doing something good. Rewarding with food can cause a child to grow up associating food with parental approval, perhaps leading to dietary problems in later life.

Reading Check **Identify Cause and Effect** What happens when you keep eating until you feel totally full?

Statistically Speaking...

A Growing Problem All segments of the U.S. population have gained weight compared to previous generations. Compared to their peers in the early 1970s, about four times as many children and three times as many teenagers are overweight. However, fewer children and teenagers have weight problems than adults. As metabolism slows with age, people often fail to adjust the amounts and types of food they eat.



Skills Focus **INTERPRETING GRAPHS** Approximately what percent of teenagers were overweight in 2003–2004?

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Examination Survey, and National Health and Nutrition Examination Survey

Obesity

More than 7 out of 10 adult Americans are overweight. Moreover, nearly 4 in 10 of these people are **obese**—that is, they weigh above 20 percent or more of their recommended weight or have a Body Mass Index of 30 or greater. Problems with unhealthy weight gain are on the rise nationwide. For example, in the early 1960s only about 45 percent of Americans were overweight. But by the early 2010s that figure had risen to about 69 percent.

Obese people suffer more illnesses than others, including heart disease, stroke, diabetes, gall bladder disease, gout, respiratory problems, and certain kinds of cancer. It has been estimated that over 300,000 people in the United States die each year because of health problems related to excess weight and inactivity. Weight control is elusive for most obese people. They often regain the weight they have lost after dieting successfully.

Causes of Obesity Why are so many people obese? As with the hunger drive in general, both biological and psychological factors appear to contribute to obesity. Obesity seems to run in families. But does this mean that it is inherited? Not necessarily. For example, obese parents may simply encourage their children to overeat by having fattening foods around the house and by setting an example. However, research suggests that heredity plays a major role in obesity. One study showed that adopted children tend to more closely resemble their biological parents than their adoptive parents in terms of body weight.

One of the ways in which heredity may contribute to obesity is that certain people with a particular gene may not receive the biological signal that they have eaten enough to sustain them. Thus, they end up eating more than they need to.

Genes also help determine the number of fat cells a person has. People with a greater number of fat cells feel hungry sooner than people with fewer fat cells, even if they are of the same weight. When overweight people take off extra pounds, they do not reduce the number of fat cells in their body. Instead, the fat cells shrink. As they shrink, they signal the brain, triggering the hunger drive. For this reason, many people who lose weight complain that they feel hungry all the time.

People metabolize food—or burn calories—at different rates and in accordance with the amount of muscle and fat in their bodies. Since fatty tissue converts food to energy more slowly than muscle does, people with more body fat metabolize food more slowly than people who weigh the same but have a lower percentage of body fat.

Men tend to have more muscle and less fat in their bodies than women. The average man is approximately 40 percent muscle and 15 percent fat. The average woman is 30 to 35 percent muscle and 25 percent fat. Therefore, men tend to burn calories more quickly than women of the same weight. For this reason, men generally are able to lose weight more easily than women, and they can usually eat more than women can without putting on extra pounds.

Psychological factors also play a role in obesity. For example, people tend to eat more when they are under stress or experiencing certain negative emotions, such as anxiety. Ironically, the stress of trying to diet can make some people want to eat even more.

Personal circumstances also affect people's ability to control their weight. For example, many people tend to overeat and ignore their diets when they are attending family gatherings, watching television, or experiencing tension at school, home, or work.

Losing Weight Psychologists have worked with other professionals to devise strategies to help overweight people lose weight. Some of these strategies appear in the multitude of books on losing weight. Others have been adopted by businesses that operate weight loss programs or meal services.

Not everyone who is a few pounds overweight should try to slim down. For example, women in the United States today are often under social pressure to conform to an unnaturally slender feminine ideal. As a result, they tend to set unrealistic weight-loss goals.

Any teenager who considers going on a diet should proceed with caution because adolescents need a good deal of nourishment—perhaps more than any other age group. Adolescents should discuss the benefits and hazards of dieting with their parents and with a health professional, such as a doctor or school nurse.

ACADEMIC VOCABULARY

sustain to keep alive or to supply with nourishment

A sound diet is one that is sensible, realistic, and well planned. Healthful weight-control programs do not involve fad diets such as fasting, eliminating carbohydrates, or eating excessive amounts of one particular food. Instead, they involve changes in lifestyle that include improving nutritional knowledge, decreasing caloric intake, exercising, and substituting healthful foods for harmful foods.

Most people in the United States eat too much fat and not enough fruits and vegetables. Junk foods like french fries, hamburgers, donuts, and candy tend to be particularly high in fat. Eating foods that are low in fat sets a good precedent for a lifetime of healthful eating. It is good for the heart and can also help in losing weight. Losing weight means "burning" or using more calories than you eat. Foods that are high in fat also tend to be high in calories. Nutritional knowledge helps people manage their consumption of food to take in fewer calories. Taking in fewer calories does not just mean eating smaller portions. It means switching to some lower-calorie foods—relying more on fresh, unsweetened fruits and vegetables (eating apples rather than apple pie), fish and poultry, and skim milk and cheese. It means cutting down on butter, margarine, oils, and sugar.

The same foods that help control weight—whole grains, fruits, and vegetables—also tend to be high in vitamins and fiber and low in fats. Such foods may also reduce the risk of heart disease, cancer, and other illnesses.

Dieting plus exercise is more effective than dieting alone for shedding pounds and keeping them off. Exercise burns calories and builds muscle tissue, which metabolizes more calories than fatty tissue does.

Keeping Weight Off Many people who lose weight struggle not to regain weight. Some studies suggest that the majority of dieters regain the weight they lose within five years. Maintaining a new, more healthy weight requires ongoing work.

Psychologists found several key similarities in people who succeeded in losing weight and not regaining it. Before losing weight, most lacked confidence but also lacked awareness of bad health habits. Deciding to lose weight and adopting new, more healthy behaviors gave these people a boost of self-confidence. Support from friends or family helped them ingrain the new habits as well as bounce back from periods of failure. Most importantly, the people who succeeded in keeping the pounds from coming back recognized that they were not just going on a one-time diet. They had adopted a new, life-long approach to eating and exercising.

Reading Check **Identify Supporting Details** Why do men generally find it easier to lose weight than women?

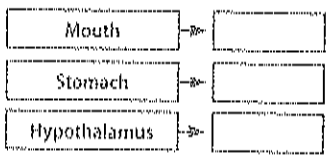
SECTION 2 Assessment

Reviewing Main Ideas and Vocabulary

1. **Identify Main Ideas** Why is the hunger drive not purely biological?
2. **Define** What is obesity?
3. **Recall** What part of the hypothalamus governs when to start eating? What part governs when to stop eating?

Thinking Critically

4. **Compare** What is the difference between being obese and being overweight?
5. **Predict** If fresh, nutritious foods became as cheap and readily available as junk food, what would happen to average weight in the United States?
6. **Elaborate** In terms of the hunger drive, where does physiology end and psychology begin? Use the example of someone who has lost weight and now often feels hungry.
7. **Explain** Using your notes and a graphic organizer like the one here, explain the roles of the mouth, stomach, and hypothalamus in the hunger drive.



FOCUS ON WRITING

8. **Persuasive** Imagine that 10 years from now you will be overweight. Write a letter to your future self explaining how to lose the weight and keep it off.

SECTION 3

Psychological Needs

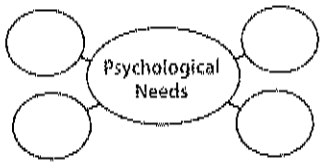
Before You Read

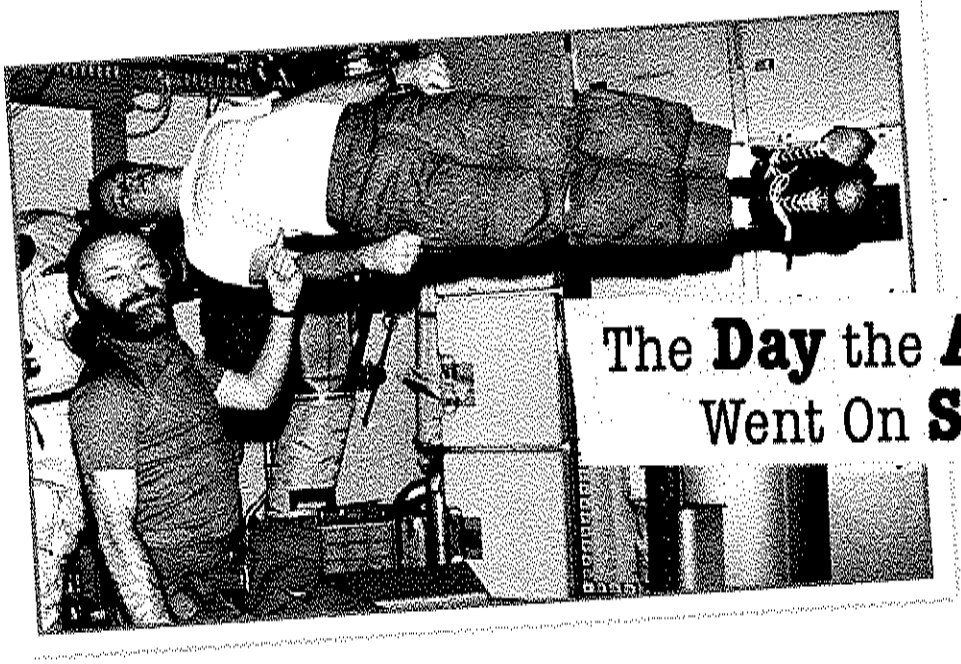
Main Idea
Psychological motivations include stimulus motives and achievement motivation. Several different theories attempt to explain what drives people.

Reading Focus
1. What are stimulus motives?
2. Why doesn't everyone have achievement motivation?
3. What motivates people to make things fit?
4. How does the desire for affiliation motivate people?

Vocabulary
stimulus motives
sensory deprivation
achievement motivation
extrinsic rewards
intrinsic rewards
cognitive consistency
balance theory
cognitive-dissonance theory
affiliation

TAKING NOTES Use a graphic organizer like this one to take notes on psychological needs.





The Day the Astronauts Went On STRIKE

Astronauts Gerald Carr and Edward Gibson have fun with the effects of zero gravity onboard Skylab.

PSYCHOLOGY CLOSE UP

Was it mutiny or a well-deserved rest? Skylab was the first U.S. space station. Astronauts Gerald Carr, William Pogue, and Edward Gibson made up the third and last crew to visit Skylab. Their mission lasted from November 16, 1973, to February 8, 1974.

Skylab was designed for scientific work. NASA flight control had set a busy schedule, and the astronauts had trouble keeping up. Commander Carr hinted that the schedule was unrealistic. But flight control continued to shorten the time per task and began canceling rest days to pack in more work.

The astronauts did their best to complete their assignments, but it was wearing on them mentally. Gibson pointed out that the rush compromised the quality of the scientific results. Pogue told mission controllers that the lab was a mess because the schedule left no time to clean up after experiments. Flight control ignored the complaints.

Commander Carr faced a dilemma. He and his crew needed rest, and the schedule was unrealistic. Then he hit on an idea that might solve both problems. He shut down communications between Skylab and the ground for 24 hours. Carr, Pogue, and Gibson took a day off.

When Carr restored communications, the crew and the flight controllers had a frank discussion about the situation. NASA finally realized they needed to back off their frenzied work plan. Rested, the astronauts found their motivation restored. Having their psychological needs addressed made the rest of the mission go much more smoothly.

Stimulus Motives

Human beings and other organisms are motivated to reduce the tension or stimulation caused by biological drives such as hunger or thirst. The hungry person who "has a bite to eat" wants to reduce the feeling of being hungry. However, we experience psychological needs as well as biological needs. Some psychological needs motivate us to reduce tension or stimulation. Other psychological needs actually lead us to increase the amount of stimulation we experience.

Desires for stimulation are known as **stimulus motives.** Stimulus motives include sensory stimulation, activity, exploration, and manipulation of the environment. Some stimulus motives have clear survival value. Human beings and other organisms who are motivated to explore and manipulate their environments are more likely to survive. Learning about one's surroundings increases usable information concerning resources and potential dangers. Manipulation allows people to change the environment in useful ways, thereby increasing and enhancing their chances of survival.

Sensory Deprivation Some psychologists have tried to understand stimulus motives by seeing what happens when people are deprived of all stimulation. During the 1950s, student volunteers at McGill University in Montreal were paid $20 per day for participating in an experiment in which they did nothing—literally nothing. They were blindfolded and placed in small rooms. Their arms were bandaged so that they could feel no tactile sensations (sensations of touch), and they could hear nothing except the dull hum of the air conditioner. The intention of the experiment was to see how people would react to an absence of stimulation, a state referred to as **sensory deprivation.**

With nothing to do, some of the students slept. Those who remained awake began to feel bored and irritable. As the hours passed, the students felt more and more uncomfortable. Some reported having hallucinations. The study was scheduled to last for several days, but many students quit during the first day despite the monetary incentive and the desire to help in the research. Most of those who completed the study felt they had been through a terrible ordeal and, for several days after the experiment, found it difficult to concentrate on even simple matters. They reported feeling extreme boredom and disorientation for some time. The experiment demonstrated the importance of sensory stimulation to human beings.

Desire for Sensory Stimulation All people seek sensory stimulation, but it is clear that some need it more than others. Some people like being couch potatoes. They enjoy sitting and relaxing in front of a TV whenever possible. Other people prefer more active lifestyles. They are not happy unless they are out running or tossing a ball around.

You may know someone who is always on the run. This person may be happiest when hiking, riding a skateboard, or taking on other physical challenges. Many psychologists would call such a person a sensation seeker. A sensation seeker is somebody who regularly seeks out thrilling activities such as riding mountain bikes, roller coasters, or even skydiving. They feel at their best when they are doing something active or adventurous.

It is not clear why some people seek high levels of sensation and others prefer lower levels. Inborn factors may play a role. So may learning experiences. For example, a child or adolescent whose parents ride motorcycles or skydive will be exposed to these activities at an early age. He or she may be inclined to want to try these activities.

Exploration and Manipulation Anybody who has ever had the experience of bringing home a new cat knows that the animal's first reaction to totally new surroundings is to show anxiety. The frightened cat may hide under a bed or in a closet. However, eventually, the cat will feel adventurous enough to take a few tentative steps out. Then it will begin exploring its new surroundings. Within a few days, the cat will probably have explored every corner of the house. In this respect, cats and people appear to behave in similar ways. Most people are also motivated to explore their immediate surroundings.

Once people and animals become sufficiently comfortable with their environment, they seek novel stimulation. That is, they seek new and varied experiences. For example, laboratory monkeys learn to manipulate gadgets just for the sake of the novel stimulation.

Quick Lab

Are You Driven to Succeed?

People with high achievement motivation tend to share certain characteristics. Answering the questions in this quiz may reveal to what degree achievement motivates you.

TEST

1. Do you think more about your future than your past?
2. Would you feel dissatisfied if no one but your friends and family ever heard of you?
3. Do you approach life with careful planning?
4. Do you feel unhappy when you don't earn high grades?
5. Do you find it exciting to be in the spotlight?
6. Is it difficult for you to forget about school on weekends?
7. Do you consider yourself ambitious?
8. Would you like to work on a project with a very talented person even if he or she was difficult to get along with?

PROCEDURE AND ANALYSIS

1. Answer each test question either "yes" or "no."
2. Count the number of questions you answered "yes" and the number you answered "no."
3. When everyone is done, create a table on the board with nine columns labeled "0" through "8."
4. Tally up the number of people who answered "yes" to all of the questions, and write that number under 8. Do the same for the rest of the possibilities.
5. Discuss the results. Ask students at either extreme—the ambitious 8s and the laid-back 0s—to discuss their different approaches to life.

Other researchers have shown that laboratory rats who are not terribly hungry usually choose to explore unfamiliar parts of mazes rather than to head down familiar alleys directly to a food reward.

Do people and animals explore and manipulate their environment because these activities help them meet their needs for food and safety? Or do they explore and manipulate these objects simply for the sake of novel stimulation? Many psychologists believe that exploration and manipulation are reinforcing in and of themselves. Monkeys appear to enjoy "monkeying around" with gadgets. If you leave mechanical devices in their presence, the monkeys will learn how to manipulate them without any reward other than the pleasure of doing so.

Many human infants will play endlessly with "busy boxes"—boards or boxes with pieces that move, honk, squeak, rattle, and buzz. Most children seem to find pleasure in playing with new gadgets and discovering interesting new activities. This seems to support the view of psychologists who see the desire for novel stimulation as natural to both people and animals.

Reading Check **Identify Supporting Details**
How might exploration and manipulation help an animal to survive?

Achievement Motivation

People who are driven to get ahead, to tackle challenging situations, and to meet high personal standards of success are said to have high **achievement motivation.** For example, students who demonstrate high achievement motivation will work on difficult test items until they find the answer or run out of time. These students tend to earn higher grades than students with equal abilities but lower achievement motivation.

Adults with high achievement motivation may strive to move ahead in their careers. They may set challenging goals for themselves, broaden their skills, or simply recognize and take advantage of opportunities presented to them. Adults with high achievement motivation are more likely to be promoted and earn high salaries than less motivated people with similar opportunities.

Research shows that people with high achievement motivation enjoy personal challenges and are willing to take moderate risks to achieve their goals. However, such people also have a greater risk of heart disease and other stress-related illnesses.

Types of Goals Achievement motivation can be fueled by a variety of different sources. For some students, performance goals may be the reason for their achievement motivation.

Performance goals are specific goals such as gaining admission to college, earning the approval of parents or teachers, or even simply avoiding criticism. For example, a performance goal such as winning a science scholarship might motivate a student to study advanced biology.

Other students are driven mainly by learning goals. For some students, learning for learning's sake is the most powerful motivator. Psychologists call motivators such as these learning goals. People who demonstrate high achievement motivation may be influenced by more than one type of goal. In the previous example, in addition to striving to win the scholarship, the student probably also enjoys studying science.

Performance goals are usually satisfied by external or extrinsic rewards. **Extrinsic rewards** include good grades, a good income, and respect from others. On the other hand, learning goals are usually satisfied by internal or **intrinsic rewards,** such as self-satisfaction.

ACADEMIC VOCABULARY
consistent in agreement with, compatible

Development of Achievement Motivation

Where does achievement motivation come from? Parents and caregivers certainly play a crucial role. Their attitude toward achievement is instrumental in developing a child's motivation.

Research suggests that children with learning goals often have parents who encourage them to be persistent, to enjoy schoolwork, and to find their own ways to solve problems whenever possible. Such parents create opportunities to expose their children to new and stimulating experiences. Parents of children with performance goals, on the other hand, are more likely to reward their children with toys or money for good grades and to punish them for poor grades.

Research also shows that parents of children with high achievement motivation tend to be generous with their praise when their children do well. Such parents are also less critical of their children when they do poorly. The children themselves set high personal standards and relate their feelings of self-worth to their achievements.

Reading Check **Identify Cause and Effect**
What sorts of rewards usually satisfy performance goals?

Making Things Fit

The stimulus motives we have been discussing are examples of psychological needs aimed at increasing our level of stimulation. However, many psychological needs are aimed at reducing stimulation or tension, especially in interactions with other people. These types of psychological needs are based on people's need to maintain a balance between their personal beliefs, actions, and thoughts.

Cognitive Consistency Cognitive theorists, such as Leon Festinger and Sandra Bem, maintain that people are motivated to achieve **cognitive consistency.** That is, they seek to think and behave in a way that fits what they believe and how others expect them to think and behave. According to Festinger, people are primarily motivated to behave according to their beliefs. Therefore, a person who is politically liberal would find it difficult to support a conservative candidate. According to Bem, most girls and boys try to behave in ways that are consistent with what people expect of females and males in their society.

Most people prefer that the "pieces" of their lives fit together. They seek out as friends those who have values and interests similar to their own. As they grow older, most people try to find a set of beliefs that will help them understand the world in which they live. Most people feel better when the important relationships in their lives are stable and orderly. Two theories that address this need to create cognitive consistency are balance theory and cognitive-dissonance theory.

Balance Theory According to **balance theory,** people need to organize their perceptions, opinions, and beliefs in a harmonious manner. They want to maintain a cognitive balance by holding consistent views and by being with people who share their beliefs and values. When the people we like share our attitudes, there is a state of balance that gives us a feeling that all is well.

Imagine a group of high school students who are good friends. The group includes a mix of girls and boys, and each excels at a different subject. But why is this group of friends so close? According to balance theory, they have probably discovered that they share many of the same values, interests, and beliefs.

Balance theory also suggests that, when we care about a person, we tend to share her or his interests. Some of the group of friends, for example, may not have been very interested in attending a classical violin recital. However, one person in the group loves to perform music and invited the rest of the group to her violin recital. Because of their friendship, the group attended the recital. In this way, they were introduced to, and developed positive feelings about, something that one member liked.

Psychologists note that people who have strong feelings for each other, as one couple in the group does, might be upset to discover a major area of disagreement. Such a disharmony would place them in a state of imbalance. When someone we care about disagrees with us, an uncomfortable state of imbalance arises. We may attempt to end the uncomfortable state by trying to persuade the other person to change his or her attitude or by changing our feelings about the other person.

Relationships can usually survive disagreements about such things as different tastes in food or a difference of opinion about a movie. However, more basic conflicts such as over religion, politics, or personal values can create a state of imbalance.

When we dislike certain people or have no feelings toward them one way or another, their attitudes are not of much interest to us. Because we do not care about them, we are not greatly affected by the disharmony between their views and ours. We can be said to be in a state of nonbalance. Unlike imbalance, which tends to upset people, nonbalance usually leaves people feeling indifferent.

Cognitive-dissonance Theory Why do people find a state of imbalance uncomfortable? The answer is that people want their thoughts and attitudes (cognitions) to be consistent with their actions. Awareness that our cognitions are inconsistent (dissonant) with our behavior is unpleasant. It causes an inner tension, which can be uncomfortable. According to **cognitive-dissonance theory,** people are motivated to reduce this inconsistency.

Classic research on cognitive dissonance was conducted by psychologists Leon Festinger and James Carlsmith. Participants in their experiment were divided into two groups. Both groups performed a boring task such as turning pegs. The people in one group were paid $20 to tell another person that the boring task was interesting. The people in the second group were paid $1 to say that the boring task was interesting. Afterward, the participants were asked to express their own actual feelings about the task. The people who received $1 rated the task as *more* interesting than the people who were paid $20.

According to cognitive-dissonance theory, this occurred because the people who received $1 felt an inconsistency—a dissonance—between their cognition ("That was a boring task") and their action ("I just told someone that task was interesting"). The people who received $20 could easily justify lying about how they really felt about the task because doing so was worthwhile, financially. The people who received just $1 could not use that excuse. Instead, they changed their attitude about the task. By convincing themselves that the task was more interesting than it really was, they were able to reduce the inconsistency between their cognition and their action.

What happens when two people in a relationship disagree about a key issue, such as religion? A strong disagreement about an important issue can injure or even end a relationship.

THEORIES OF MOTIVATION

QUICK FACTS

Theories of motivation can be grouped into two broad categories.

Stimulus Motivators

- **Sensory stimulation** desire to gain experience through the senses
- **Activity** desire for physical movement
- **Exploration and manipulation** desire to investigate the surrounding world
- **Achievement motivation** desire to challenge oneself and to meet high standards of success

Reducing Tension Motivators

- **Balance theory** desire to coordinate internal perceptions, opinions, and beliefs with those of other people
- **Cognitive-dissonance theory** desire to keep our thoughts and attitudes consistent with our actions
- **Affiliation** desire to join with others and to be accepted by the larger group

Cognitive-dissonance theory suggests that people having such a basic disagreement may seek to reduce the dissonance by trying to pretend that the differences between them are unimportant or even by denying that the differences exist. They may avoid thinking about those differences and put off dealing with them as long as possible.

Reading Check **Draw Conclusions** What situations can create a state of imbalance?

Affiliation

If we never dealt with other people, imbalance or cognitive dissonance would never occur. But humans are social beings. The desire to join with others and be part of something larger than oneself is called **affiliation.** The desire to affiliate prompts people to make friends, join groups, and participate in activities with others. During adolescence, the motive for affiliation with one's peers is particularly strong. It is a time of life when one discovers how peers provide emotional support, useful advice, and pleasurable company.

Affiliation motivation helps keep families, groups, and nations together. However, some people are so strongly motivated to affiliate that they find it painful to be by themselves. Sometimes a strong need to affiliate may be a sign of anxiety.

Psychologist Stanley Schachter showed how anxiety increases the desire to affiliate. In a classic study, he manipulated people's anxiety levels. He told one group of people that they would be given painful electric shocks. He told another group of people that they would be given mild electric shocks. All participants were then asked to wait for the shock apparatus to be set up. They were given the choice of waiting alone or waiting in a room with other participants.

Almost two-thirds of those who expected the painful shock chose to wait with other participants. In contrast, only one-third of those who expected the mild shock chose to wait with other participants. Schachter concluded that anxiety tends to cause people to want to affiliate with other people.

Other studies have shown that the desire to affiliate with a group can lead people to disregard their own perceptions. For example, a test subject might be asked to count and remember the number of items on a table. In a waiting room, the actual test subject meets a group of actors pretending to be fellow test subjects. If all of the actors agree that there were a different number of items on the table, most test subjects will change their answer to align with the group.

Reading Check **Infer** Why doesn't everyone feel the same amount of desire to affiliate?

SECTION 3 Assessment

Reviewing Main Ideas and Vocabulary

1. **Define** What are stimulus motives?
2. **Contrast** What is the difference between extrinsic rewards and intrinsic rewards?
3. **Recall** What term describes the desire to join a group?

Thinking Critically

4. **Interpret** What happens when someone experiences sensory deprivation for long periods? Why?
5. **Support a Position** Do all people with high achievement motivation want to prove they are better than everyone else? Explain why this is or is not the case.
6. **Elaborate** Tony leads the Hunting and Fishing Club. Sandy is the head of the Anti-Cruelty-to-Animals Society. Use balance theory to explain why Tony and Sandy are not friends.
7. **Compare and Contrast** Using your notes and a graphic organizer like the one below, explain the relationship between balance theory and cognitive-dissonance theory.

Similarities	Differences

FOCUS ON WRITING

8. **Descriptive** What motivates you? Look at the table on the previous page, and decide which of the seven types of motivation drives you the most. Using specific examples, describe how this motivator shapes your life.

SECTION 4

Emotions

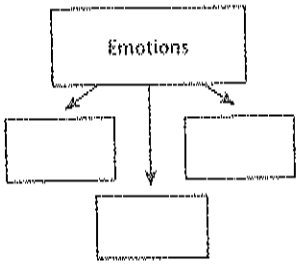
Before You Read

Main Idea
Emotions are states of feeling that influence thoughts and behaviors. Facial expressions reflect our emotions.

Reading Focus
1. What is the nature of emotion?
2. How do facial expressions differ across different cultures?
3. What are the major theories of emotion?

Vocabulary
emotions
opponent-process theory

TAKING NOTES Use a graphic organizer like this one to take notes on emotions.



The Man With No EMOTIONS

PSYCHOLOGY CLOSE UP ***What happens when a person becomes perfectly rational?***

"Be rational about this." "Don't let your feelings get in the way." "Use your head." Our culture suggests that emotions interfere with making good decisions. But what would actually happen if a person lost the capacity to feel and became more like a computer? The results might surprise you.

Doctors discovered that a successful businessman had a brain tumor. Surgeons removed the tumor, but the tumor had destroyed part of the man's prefrontal cortex, a region of the brain associated with personality and social behavior. The man regained full mental functioning—almost. Tests showed that his memory and intelligence were as good as they had been before the operation. The one difference was emotion. He could feel nothing. Things that might make a person sad or angry or joyous left the man unmoved.

He tried to resume his life, but things did not go so well. Previously, the man had run his own business, but now he found himself unable to make the simplest decisions. He lost the ability to prioritize, and he lost track of time easily. His marriage fell apart and ended in divorce. His business ventures began to fail. He could see what was happening around him, but it didn't seem to matter. He felt nothing.

This example shows how important emotions are for clear thinking. Far from interfering with reasoning, emotions play an essential role in decision making.

The Nature of Emotions

Anxiety and elation are two commonly experienced emotions. **Emotions** are states of feeling. For most people, positive emotions such as happiness and love make life worth living. Persistent negative emotions such as fear and sadness can make life difficult.

Some emotions arise in response to a situation. For example, a musician giving a violin recital might feel anxious because she is uncertain about her ability to perform. Emotions can also motivate behavior. When the musician remembers that her friends and family members are in the audience, she might feel their support and play with improved confidence.

Emotions have biological, cognitive, and behavioral components. Strong emotions spark activity in the autonomic nervous system. For example, anxiety triggers activity of the sympathetic division of the autonomic nervous system. When people are anxious, their hearts race. They breathe rapidly, sweat heavily, and tense their muscles. The cognitive component of anxiety—the idea that something terrible might happen—may lead a person to try to escape from the situation. But where do emotions come from, and how many kinds do people experience?

CASE STUDY CONNECTION

The Happiness of Nations The World Database of Happiness attempts to track the happiness of people around the world.

The ancient Chinese believed that there are four inborn (instinctive) human emotions: happiness, anger, sorrow, and fear. Behaviorist John B. Watson believed that there are three instinctive emotions: fear, rage, and love. In 1932 psychologist Katherine Bridges proposed that people are born with one basic emotion: general excitement. This excitement then divides into other emotions as children develop.

Psychologist Carroll Izard suggests that all the emotions that people experience are present and distinct at birth. However, they do not all show up at once. Instead, they emerge as the child develops.

Many psychologists support Izard's view. In fact, they have found that infants show many emotions at ages earlier than those suggested by Bridges. In one study, the mothers of three-month-old babies were interviewed. Results of the study revealed that 99 percent of the mothers reported that the babies showed curiosity; 95 percent of the mothers reported that the babies displayed joy; 84 percent, anger; 74 percent, surprise; and 58 percent, fear.

Questions concerning how many emotions there are, how they develop, and how they affect our lives remain unanswered. Two emotions of great importance to most people, however, are happiness and anger.

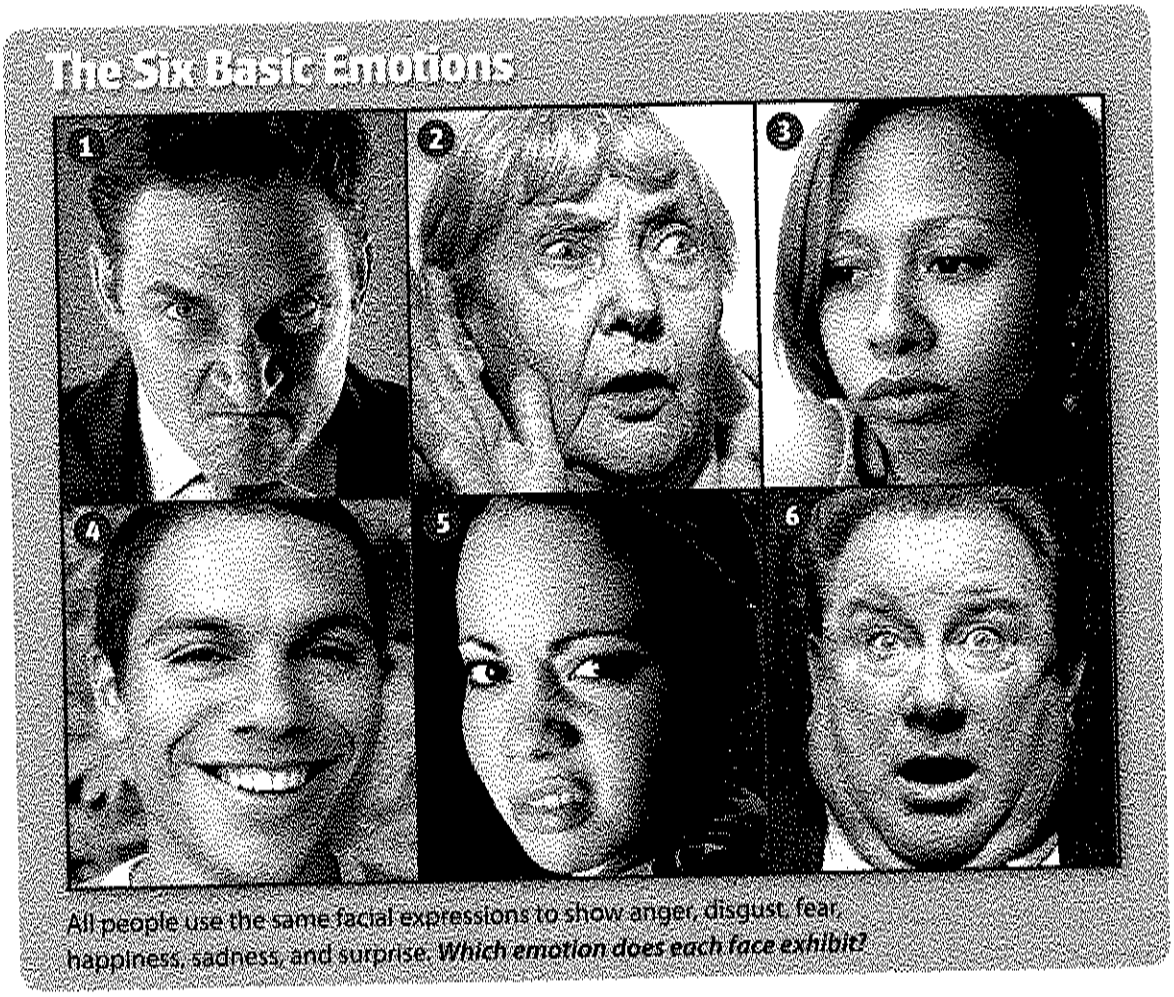
Happiness William James said that the motive behind everything that people do is "how to gain, how to keep, how to recover happiness." Certainly our state of happiness or unhappiness affects nearly everything we do as well as our perception of our surroundings. People who are happy think the world is a happier, safer place, make decisions more readily, and report greater satisfaction with their lives than do people who are unhappy. When a person is unhappy, gloom seems to settle over everything he or she does. When his or her mood brightens, everything seems better—school, work, relationships, and self-image. It seems that happiness and unhappiness create their own momentum.

Moreover, many studies have found that the happier we are, the more likely we are to help others. When good things happen that lift our mood, we are more likely to volunteer our time to help other people.

Psychologists have made happiness a new measure of national well-being. The World Database of Happiness compiles studies of happiness done by many different researchers. Most of the studies are based on interview questions. For example, the World Values Survey, conducted by the University of Michigan, relies on two questions: "Taking all things together, would you say you are very happy, rather happy, not very happy, or not at all happy?" and "All things considered, how satisfied are you with your life as a whole these days?" Some scientists object that people's estimates of their own feelings are not objective measures.

Anger Anger is a common response to an insult or an attack. Anger can often make a person seem out of control. Angry people may even seek revenge. The Roman poet Horace called anger "a short madness."

What makes people angry? Psychologist James Averill asked study participants to keep a record of their experiences with anger.



All people use the same facial expressions to show anger, disgust, fear, happiness, sadness, and surprise. ***Which emotion does each face exhibit?***

Most of the participants reported becoming at least moderately angry several times a week, while others became angry several times a day. Usually the anger was directed against someone close—a friend or family member—and over some alleged offense, especially if the act seemed deliberate or thoughtless. However, small annoyances such as a loud noise, an unpleasant odor, or an accidental injury can also make a person angry.

What is an effective way to handle anger? Hold it in? Lash out at the offender? The participants in Averill's study reported that when they became angry they tended to react by being assertive rather than hostile. Their anger frequently prompted them to discuss the situation with the offending person, thus easing the unpleasant feelings. Such controlled reactions are almost always more effective at reducing anger than hostile outbursts or suppression of the feelings of anger.

Reading Check **Find the Main Idea** How many emotions do all psychologists agree on?

Facial Expressions

We often "read" people's faces. We can tell when people are happy from their smiles. We can see when they are fearful from their open mouths and the look in their eyes. We can read people's expressions and know when they are sad or surprised. Are these facial expressions of emotion instinctive, or do people learn to show these expressions to signify certain emotions on the basis of their cultural settings?

Cross-cultural evidence suggests that facial expressions are probably inborn. The ways in which people express many emotions appear to be the same around the world. Certain facial expressions seem to suggest the same emotions in all people. For example, smiling appears to be a universal sign of friendliness and approval. Baring the teeth may be a universal sign of anger. Charles Darwin, the naturalist who developed the theory of natural selection, believed that the universal recognition of facial expressions had survival value by communicating motivation.

For example, facial expressions could signal whether a group of approaching strangers were friendly or hostile.

But some anthropologists, including Margaret Mead, argued that emotions are not universal. They argued that emotions and the way we express emotions depend on what culture we come from. For example, in one culture burping after a meal might lead to feelings of disgust. In another culture, the same burp might be perceived as a compliment and lead to feelings of happiness.

Psychologists have been able to show that emotions and the way we express those emotions are indeed universal. In a classic study by psychologist Paul Ekman, people from around the world were asked to identify the emotions that were being expressed in a series of photographs. The photos were similar to the ones shown on the previous page. They showed people expressing anger, disgust, fear, happiness, sadness, and surprise. Researchers interviewed people ranging from college students at a European university to tribal members in the remote highlands of New Guinea. All of the groups agreed on the emotion that was being portrayed in each photograph. Even the New Guineans, who had had almost no contact with Americans or Europeans, saw the same emotions in the facial expressions.

Reading Check **Identify Supporting Details** Why do psychologists believe that facial expressions are universal?

Theories of Emotion

Emotions are states of feeling that influence thought and behavior. People respond emotionally to events and situations in a variety of ways. Psychologists have different theories about what emotions are, where they come from, and how they operate.

The Opponent-process Theory According to the **opponent-process theory,** originated by psychologist Richard Solomon, emotions often come in pairs, with one emotion being followed by its opposite. That is, one emotion—for example, extreme happiness—tends to be followed by feelings that are opposite—for example, extreme sadness—rather than by a neutral feeling.

ACADEMIC VOCABULARY
neutral not aligned with any position

Solomon and his colleague J. D. Corbitt suggested that people are inclined to maintain balance in their emotional lives. When this balance is upset by a strong emotional response to a particular situation, an opponent process, or an opposite emotional response, occurs. The opponent process eventually restores emotional balance.

For example, although a musician might have practiced in preparation for her recital, she could still feel anxious when she goes on stage. Once she begins to play, however, and focus on the music, her anxiety might disappear and be replaced by tremendous relief, even elation. The first emotion (anxiety) was followed by its opposite (relief).

The Commonsense Approach You and most of your classmates would probably agree with a "commonsense approach" to emotions. According to this view, when something happens to a person in a certain situation, the person quickly interprets the situation. The interpretation triggers body sensations that signal a feeling, or emotion. The emotion, in turn, triggers a behavior. For example, a person who is walking down the street and encounters a large snarling dog may sense that he or she is in danger. That person then feels anxious (body sensation) and quickly turns down the nearest side street to avoid the dog (behavior).

Many psychologists agree that thoughts (appraisal of the situation) come before our feelings and behavior. They maintain that people's appraisals of their situations are the keys to emotional response. That is, people's thoughts, feelings, and behavior are strongly intertwined, and their thoughts to some degree determine their emotional and behavioral responses.

Other psychologists, however, believe that it is important to understand the biology of emotion. According to these psychologists, the activities of the nervous system and hormones play a more important role in determining emotion than what people are thinking about their situations. Some psychologists even believe that people's behavior determines their thoughts and feelings. Three important theories of emotion are the James-Lange theory, the Cannon-Bard theory, and the theory of cognitive appraisal.

The James-Lange Theory In the late 1800s, philosopher and psychologist William James suggested that people's emotions follow, rather than cause, their behavioral reactions. That is, people act first and then react emotionally according to the way they acted. For example, a person crossing the street who looks up and sees a truck bearing down acts first to get out of the way, then feels fright. James would say that the emotions of fear and panic are the *result* of jumping out of the way of the truck, not the cause of the action. This theory was also proposed by the Danish biologist Karl G. Lange at about the same time. Hence, it is called the James-Lange theory of emotion.

According to James and Lange, certain situations trigger reactions, called instinctive bodily response patterns. These patterns include specific feelings and behaviors. For example, a physical threat can trigger one of two instinctive response patterns: fighting or fleeing from the situation. According to this view, people who would meet the threat by fighting would experience the emotion of anger *because* (and only *after*) they acted aggressively. People who would meet the threat by fleeing would experience the emotion of fear *because* (and *after*) they ran away from the situation. In other words, their behavior would come first, followed by the emotion that fit the behavior.

The James-Lange theory suggests that people can change their feelings by changing their behavior. Changing one's behavior to change one's feelings is an approach used in behavior therapy, a method that has sometimes been employed to treat certain psychological disorders.

The James-Lange theory has been criticized, however, because it downplays the role of human cognition. This theory views the cognitive appraisal of a situation as having little or no role in determining human behavior. The James-Lange theory also minimizes the role of personal values and choice as factors in human behavior.

The Cannon-Bard Theory Walter Cannon and Philip Bard were physiologists, scientists who study the functions of the human body. Their view of emotion was rooted in physiology. They suggested that emotions *accompany* the bodily responses that are aroused by an external stimulus. According to the Cannon-Bard theory, a situation triggers an external stimulus that is processed by the brain. The brain then stimulates bodily changes and cognitive activity (the experience of the emotion) simultaneously. Emotions are not produced by the bodily responses.

The central question raised by the Cannon-Bard theory is whether bodily responses and emotions do in fact occur at the same time. In some cases, it seems they do not. For example, pain or a threat may trigger bodily responses (such as rapid heartbeat) in someone before that person begins to experience distress or fear. Also, people who manage a "narrow escape" from a dangerous situation often become quite upset and shaken afterward, when they have had a chance to consider what might have happened to them. In such situations it seems that a two-stage reaction is involved—the bodily response is followed by the emotional reaction.

The Theory of Cognitive Appraisal Other theoretical approaches to emotion have focused on cognitive factors. One theory, called the theory of cognitive appraisal, argues that all emotions have similar bodily response patterns.

THEORIES OF EMOTION

Quick Facts

Psychologists have developed several different theories to explain the relationship between emotions, thoughts, and behaviors.

James-Lange Theory

- The theory is named for William James and Karl G. Lange, who proposed similar theories at about the same time.
- Emotions follow behavior.
- People can change their feelings by changing their behavior.

Cannon-Bard Theory

- The theory is named for Walter Cannon and Philip Bard, who were physiologists.
- Emotions are triggered by external stimuli.
- Emotions and bodily responses occur simultaneously.

Theory of Cognitive Appraisal

- All emotions have similar bodily response patterns.
- People label their emotions based on their cognitive appraisal of the situation.

That is, the body reacts in physically similar ways even though different emotions are being experienced. This theory maintains that the way people label an emotion depends largely on their cognitive appraisal of the situation.

The cognitive appraisal that occurs is based on many factors. These factors include the person's analysis of the situation and the ways other people are reacting in the same situation. When other people are involved in the same situation, an individual will look at the way they are reacting and then compare his or her reaction to theirs to arrive at what seems to be the right response.

Critics of the theory of cognitive appraisal point out that studies designed to support the theory often yield different results when repeated. In science, research studies must be replicated with the same methods used and similar results obtained. Since several studies designed to prove cognitive appraisal theory produced different results, some psychologists have questioned the theory's validity.

Evaluation of the Theories The theory of cognitive appraisal is quite different from the James-Lange theory. The James-Lange theory asserts that each emotion has distinct and easily recognized bodily sensations. The theory of cognitive appraisal asserts that all emotions are rooted in common bodily sensations but argues that we label these sensations differently according to the situation. The truth may lie somewhere in between.

In summary, it is possible that the bodily response patterns of different emotions are more distinct than the theory of cognitive appraisal suggests, but are not as distinct as James and Lange suggested. In addition, research with PET scans suggests that different emotions involve different parts of the brain. Furthermore, lack of control over our emotions and ignorance of what is happening to us appear to be distressing experiences. Thus, it seems that our cognitive appraisals of our situations do affect our emotional responses but not to the extent envisioned by some cognitive-appraisal theorists.

People are complex, thinking beings who evaluate information both from their personal situations and from their bodily responses to their situations. Most likely, they process information from both sources to label their emotions and to decide what action to take. No one theory of emotion we have discussed applies to all people in all situations. That may not be a bad thing. People's emotions are not as easily understood or manipulated as some theorists have believed.

Reading Check **Summarize** What theory suggests that emotions happen after an instinctive bodily response?

SECTION 4 Assessment

Reviewing Main Ideas and Vocabulary

1. **Define** What are emotions?
2. **Identify Main Ideas** What are the six basic emotions that people of all cultures identify as facial expressions?
3. **Recall** How does opponent-process theory explain the way emotions change?

Thinking Critically

4. **Interpret** How did Carroll Izard explain the way people develop emotions?
5. **Explain** Why do some anthropologists believe that emotions are not universal?
6. **Analyze** Have you ever heard a song that made you cry? Use the common sense approach to explain how the song affected your emotions.
7. **Categorize** Using your notes and a graphic organizer like the one below, categorize the way the three major theories view emotion.

Theory	Explanation of Emotion

FOCUS ON WRITING

8. **Persuasive** How many different emotions do you think there are? Do you, like John B. Watson, believe in three basic emotions, or do you think there are dozens? Use specific examples to support your viewpoint.