Motivation and Emotion

Did You Know That . . .

■ The founding father of American psychology believed there is a human instinct for cleanliness? (p. 262)
■ People tend to eat more when food is served in larger portion sizes or on larger plates? (p. 271)
■ The male sex hormone testosterone energizes sexual drives in women as well as men? (p. 281)
■ People in different cultures smile differently? (p. 285)
■ Married people tend to be happier than single people? (p. 287)
■ Practicing smiling can lift your mood? (p. 288)
■ Responding without thinking can be a lifesaver in some situations? (p. 291)

What Do You Think?

■ Does money buy happiness? How much happier do you think you’d be if you suddenly came into a pot full of money? The results of scientific studies on links between money and happiness might surprise you. (p. 287)
SO YOU WANT TO BE A MEGA-MILLIONAIRE.
OKAY, THEN WHAT?
Imagine you suddenly came into an enormous amount of money—say $10 million. How would you spend your days? Would you continue with your college studies, or would you just lounge about in luxury? Maybe you’d relax on a tropical beach for a few weeks, or even a few months. Sooner or later, however, you’d probably want to do something more meaningful. Perhaps you’d devote your time and energy to philanthropy. Or perhaps you’d start a new business in the hope of accumulating even more wealth. Or perhaps you’d pursue a career that you would enjoy for reasons other than its financial rewards. In any event, you wouldn’t simply crawl into a ball and remain motionless for the rest of your life. You would be motivated to do something and get on with your life.

Although few people ever attain great wealth, we might learn something about human motivation from someone who became so wealthy that the sheer size of his fortune boggles the imagination. Bill Gates—co-founder of Microsoft, the world’s leading software company—remains the world’s richest person, with a net worth valued at a whopping $53 billion according to recent estimates (“The Forbes 400,” 2006). But Gates still plugs away, although perhaps not at the frenetic pace of his youth.

What motivates someone like Bill Gates? After all, he has more money than he or anyone else could spend in a dozen lifetimes, short of buying half a dozen small countries. His motivation has to do with sources of gratification that cannot be deposited in a bank account. As he told an interviewer, life for him is a continuous process of challenge and achievement (Playboy Enterprises Inc., 1994). For Gates and others like him, there are always more mountains to climb, more challenges to meet. Such people prize wealth not for what it can buy but for what it represents—winning.

What about you? What drives your behavior? Is it the desire to satisfy your biological needs—to have sufficient food, water, sexual gratification, and protection from the elements? Or are you, like Bill Gates, driven by a need to achieve, succeed, and prove something about yourself to the world? What is it that starts your engine and keeps it going?

In this chapter, we explore the factors that energize and direct human behavior—not just motivation but also emotion. Both words—motivation and emotion—are derived from the Latin movere, meaning “to move.” Like motivation, emotion moves us to act. The emotion of fear, for instance, can motivate us to act defensively to escape a threatening situation. The emotion of anger can motivate us to act aggressively to rectify an injustice. The emotion of happiness inspires us to repeat the behavior that creates it. Throughout the ages, love has been considered a prime motivator, the emotion that “makes the world go round.”

We begin by considering the sources of motivation that prompt behavior and keep it going. We then focus on one of the most basic motives, hunger, and examine in depth the problems of obesity and eating disorders. We also discuss sexual motivation. Finally, we explore the complex phenomenon that infuses life with color: emotion.
Module 8.1

Motivation: The “Whys” of Behavior

• What is motivation?
• What is instinct theory?
• What is drive theory?
• How does arousal theory account for differences in motivational states?

Motivation refers to factors that activate, direct, and sustain goal-directed behavior. If, after a few hours of not eating, you get up from your chair and go to the kitchen to fix yourself a snack, we might infer that the motive for your behavior is hunger. The hunger motive activates your behavior (causing you to stand), directs it (moving you toward the kitchen), and sustains it (as you make yourself a snack and consume it) until you’ve achieved your goal (satisfying your hunger).

Motives are the “whys” of behavior—the needs or wants that drive behavior and explain why we do what we do. We don’t actually observe a motive; rather, we infer that one exists based on the behavior we observe.

In this module, we focus on the biological and psychological sources of motivation and the various theories psychologists have constructed to explain motivated behavior. None of these theories offers a complete explanation of motivated behavior, but each contributes something to our understanding of the “whys” of behavior.

Biological Sources of Motivation

We need oxygen to breathe, food for energy, water to drink, and protection from the elements. These basic biological needs motivate much of our behavior. Biological needs are inborn. We don’t learn to breathe or to become hungry or thirsty. Nonetheless, learning and experience influence how we satisfy our biological needs, especially our need for food. Eating tamales or mutton stew might satisfy our hunger, but our cultural backgrounds and learning experiences influence our choice of food and the ways in which we prepare and consume it.

Instincts: Behavior Programmed by Nature

Birds build nests, and salmon return upstream to their birthplaces to spawn. They do not acquire these behaviors through experience or by attending nest-building or spawning schools. These are instinctive behaviors—fixed, inborn patterns of response that are specific to members of a particular species. Instinct theory holds that behavior is motivated by instincts.

Though we can find examples of instinctive behaviors in other species, do instincts motivate human behavior? One theorist who thought so was Sigmund Freud, who believed that human behavior is motivated primarily by sexual and aggressive instincts (see Chapters 1 and 10). Another was William James (1890/1970), the father of American psychology, who compiled a list of thirty-seven instincts that he believed could explain much of human behavior. His list included physical instincts, such as sucking, and mental instincts, such as curiosity, jealousy, and even cleanliness. (Yes, cleanliness.) Other early psychologists, notably William McDougall (1908), expanded on James’s list. The list kept growing and growing, so much so that by the 1920s, it had ballooned to some ten thousand instincts covering a wide range of human behavior (Bernard, 1924).
The instinct theory of human motivation has long been out of favor. One reason for its decline is that the list of instincts simply grew too large to be useful. Another is that explaining behavior on the basis of instincts is merely a way of describing it, not explaining it (Gaulin & McBurney, 2001). For example, saying a person is lazy because of a laziness instinct or stingy because of a stinginess instinct doesn’t really explain the person’s behavior. It merely attaches a label to it. Perhaps most important, psychologists recognized that human behavior is much more variable and flexible than would be the case if it were determined by instinct. Moreover, instinct theory fails to account for the important roles of culture and learning in determining human behavior. Though instincts may account for some stereotypical behavior in other animals, most psychologists reject the view that instincts motivate complex human behavior.

**Needs and Drives: Maintaining a Steady Internal State**

By the early 1950s, drive theory had replaced instinct theory as the major model of human motivation. Its foremost proponent, psychologist Clark Hull (1943, 1952), believed we have biological needs that demand satisfaction, such as the needs for food, water, and sleep. A need is a state of deprivation or deficiency. A drive is a state of bodily tension, such as hunger or thirst, that arises from an unmet need. The satisfaction of a drive is called drive reduction.

Drive theory is based on the principles of homeostasis, the tendency of the body to maintain a steady internal state (see Chapter 2). Homeostatic mechanisms in the body monitor temperature, oxygen, and blood sugar, and maintain them at a steady level. According to drive theory, whenever homeostasis is disturbed, drives activate the behavior needed to restore a steady balance. For example, when our blood sugar level drops because we haven’t eaten in a while, we become hungry. Hunger is the drive that motivates us to seek nourishment, which restores homeostasis. Although drive theory focuses on biological needs, some needs, such as the needs for comfort and safety, have a psychological basis.

Though needs and drives are related, they are distinct from each other. We may have a bodily need for a certain vitamin but not become aware of it until we develop a vitamin deficiency disorder. In other words, the need may exist in the absence of a corresponding drive. Moreover, the strength of a need and the drive to satisfy it may differ. People who fast for religious or other reasons may find they are less hungry on the second or third day of a fast than on the first, even though their need for food is even greater.

Unlike instinct theory, drive theory posits an important role for learning, especially operant conditioning (discussed in Chapter 5). We learn responses (like ordering a pizza when we’re hungry) that are reinforced by drive reduction. A behavior that results in drive reduction is more likely to be repeated the next time the need arises. Drives may also be acquired through experience. Biological drives, such as hunger, thirst, and sexual desire, are called primary drives because they are considered inborn; drives that are the result of experience are called secondary drives. For example, a drive to achieve monetary wealth is not something we are born with; we acquire it as a secondary drive because we learn that money can be used to satisfy many primary and other secondary drives.

**Optimal Level of Arousal: What’s Optimal for You?**

Drive theory focuses on drives that satisfy survival needs, such as needs for food and water. But classic experiments by psychologist Harry Harlow and his colleagues challenged the notion that all drives satisfy basic survival needs. When they placed a mechanical puzzle in a monkey’s cage, they found that the monkey began manipulating it and taking it apart, even though the animal didn’t receive any food or other obvious reinforcement for its efforts (Harlow, Harlow, & Meyer, 1950).
Human babies, too, manipulate objects placed before them. They shake rattles, turn knobs, push buttons on activity toys, and mouth new objects, even though none of these behaviors is connected with satisfaction of their basic survival needs. The work of Harlow and others suggests that humans and many other animals may have innate, biologically based needs for exploration and activity. These needs, which prod organisms to explore their environments and manipulate objects—especially unusual or novel objects—are called stimulus motives. Stimulus motives don’t disappear as we get older. Adults seek to touch and manipulate interesting objects, as attested to by the many grown-ups who try their hand at the latest gizmos displayed at stores like The Sharper Image.

Drive theory would lead us to expect that organisms are motivated to reduce states of arousal—that is, states of general alertness and nervous-system activation. For example, when we are hungry, we experience a state of heightened arousal until we eat; after eating, we may feel tranquil or even sleepy. But with stimulus motives, we observe motivated behavior that leads to increased arousal—not decreased arousal, as drive theory would suggest. In other words, even when our basic needs for food and water are met, we seek out stimulation that heightens our level of arousal.

Some theorists believe stimulus motives represent a biologically based need to maintain an optimal level of arousal (Hebb, 1955; Zuckerman, 1980). This theory, called arousal theory, holds that whenever the level of stimulation dips below an organism’s optimal level, the organism seeks ways of increasing it. When stimulation exceeds an optimal level, the organism seeks ways of toning it down.

The optimal level of arousal varies from person to person. Some people require a steady diet of highly stimulating activities, such as mountain climbing, snowboarding, bungee jumping, or parasailing. Others are satisfied to spend quiet evenings at home, curled up with a good book or relaxing by watching TV.

People with a high need for arousal see life as an adventure. To maintain their optimal level of stimulation, they seek exciting experiences and thrills. Psychologist Marvin Zuckerman (2004) calls such people sensation seekers. Sensation seekers tend to get bored easily and may have difficulty restraining their impulses (Reio & Sanders-Reio, 2005). They may get into trouble because their desire for stimulation leads them to take undue risks; some may develop problems with alcohol or drugs or engage in illegal activities (Dom, Hulstijn, & Sabbe, 2006; Roberti, 2004). Yet many sensation seekers limit their sensation seeking to sanctioned, reasonably safe activities. Not surprisingly, surfers tend to score higher on sensation seeking than do golfers (Diehm & Armatas, 2004). Sensation seeking appears to have a strong genetic component—the taste for thrills may be something we are born with.

Psychological Sources of Motivation

If motivation were simply a matter of maintaining homeostasis in our bodies, we would rest quietly until prompted again by hunger, thirst, or some other biological drive. But we don’t sit idly by when our bellies are full and our other biological needs are met. We are also motivated by psychological needs, such as the need for friendship or achievement. We perceive certain goals as desirable or rewarding even though attaining them will not satisfy any biological needs. Clearly, such motivated behaviors are best addressed by considering the role of psychological factors in motivation. These factors include incentives and psychosocial needs.

Incentives: The “Pull” Side of Motivation

According to incentive theory, our attraction to particular goals or objects motivates much of our behavior. Incentives are rewards or other stimuli that motivate us to act. The attraction, or “pull,” exerted by an incentive stems from our perception that it can satisfy a need or is in itself desirable.
Module 8.1

stimulus motives
Internal states that prompt inquisitive, stimulation-seeking, and exploratory behavior.

arousal theory
The belief that whenever the level of stimulation dips below an organism’s optimal level, the organism seeks ways of increasing it.

incentive theory
The belief that our attraction to particular goals or objects motivates much of our behavior.

incentives
Rewards or other stimuli that motivate us to act.

incentive value
The strength of the “pull” of a goal or reward.

Try This Out
Are You a Sensation Seeker?

Do you pursue thrills and adventure? Or do you prefer quiet evenings at home? To evaluate whether you fit the profile of a sensation-seeker, circle the number on each line that best describes you.

Interpreting your responses. Responses above five indicate a high level of sensation seeking; those five or below indicate a low level. On which side of the continuum do your responses lie? Draw a line connecting your responses. The further to the right the line falls, the stronger your personality fits the profile of a sensation seeker.

Prefer a job in one location
1 2 3 4 5 6 7 8 9 10
Prefer staying out of the cold
1 2 3 4 5 6 7 8 9 10
Prefer being with familiar people
1 2 3 4 5 6 7 8 9 10
Like to play it safe
1 2 3 4 5 6 7 8 9 10
Would prefer not to try hypnosis
1 2 3 4 5 6 7 8 9 10
Would prefer not to try parachute jumping
1 2 3 4 5 6 7 8 9 10
Prefer quiet evenings at home
1 2 3 4 5 6 7 8 9 10
Prefer a safe and secure life
1 2 3 4 5 6 7 8 9 10
Prefer calm and controlled people
1 2 3 4 5 6 7 8 9 10
Like to sleep in a comfortable room
1 2 3 4 5 6 7 8 9 10
Prefer avoiding risky activities
1 2 3 4 5 6 7 8 9 10

Prefer a job with lots of travel
Enjoy a brisk walk on a cold day
Like living “on the edge”
Would like to try hypnosis
Would like to try parachute jumping
Prefer going out dancing at night
Prefer experiencing as much as possible
Prefer people who are a bit wild
Enjoy camping out
Like to do things that are a little dangerous

Interpreting your responses. Responses above five indicate a high level of sensation seeking; those five or below indicate a low level. On which side of the continuum do your responses lie? Draw a line connecting your responses. The further to the right the line falls, the stronger your personality fits the profile of a sensation seeker.

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In contrast to drive theory, which explains how unmet biological needs push us in the direction of satisfying them, incentive theory holds that incentives motivate us by pulling us toward them. Incentive theory thus focuses on the lure, or “pull,” of incentives in motivating behavior, rather than the “push” of internal need states or drives. You may crave a scrumptious-looking dessert even though you’ve just eaten a full meal and no longer feel “pushed” by the drive of hunger. You may feel drawn to buy the latest fashions or technological gizmos even though obtaining these objects will not satisfy any biological need.

The strength of the “pull” that a goal or reward exerts on our behavior is its incentive value. Incentive values are influenced by many factors, including an individual’s learning experiences and expectancies. We place more value on a goal if we have learned from past experience to associate it with pleasure and if we expect it will be rewarding when we obtain it. Many employers spur productivity in their employees by offering them incentives in the form of bonuses. Marketers manipulate the incentive value of the products they want us to buy. They try to persuade us that to be cool, healthy, sexy, or successful, we need to use their products.

Cultural influences play a large part in determining incentive values. Some cultures place great value on individual achievement and accumulation of wealth. Others place a premium on meeting obligations to one’s family, religious group, employer, or community. What incentives motivate your behavior—a college diploma, wealth, the man or woman of your dreams, status, or the respect of your family or community? Which of these incentives has the strongest “pull” on your behavior?
Psychosocial Needs

Although fulfilling biological needs is necessary for survival, human beings seek more out of life than mere survival. We are social creatures who are motivated to satisfy psychosocial needs (also called interpersonal needs), such as the need for social relationships (also called the need for affiliation) and the need to achieve. Here we focus on the most widely studied of these needs—the need to excel at what we do, which is known as the need for achievement.

Some people strive relentlessly to get ahead, to earn vast sums of money, to invent, to create—in short, to achieve. People with a high need for achievement are found in many walks of life, from business and professional sports to academia and the arts. Like Bill Gates, they have a strong desire to excel at what they do. They are hard-driving and ambitious and take pride in accomplishing their goals.

Harvard psychologist David McClelland found that the goals that people with a high need for achievement set for themselves are challenging but realistic (McClelland, 1958, 1985). Goals that are too easily achieved are of no interest to them, nor are goals that are patently unobtainable. Such people may not always succeed, but they take failure in stride and keep pushing ahead. By contrast, people with a low need for achievement are motivated by a desire to avoid failure. They set goals either so low that anyone can achieve them or so unrealistically high that no one can achieve them. If the bar is set too high, who can blame them if they fail? When they meet with failure, they are more likely to quit than to persevere.

The need for achievement is driven by extrinsic motivation, intrinsic motivation, or both (Harackiewicz & Elliot, 1993; Ryan & Deci, 2000). Extrinsic motivation reflects a desire for external rewards, such as money or the respect of one’s peers or family. Intrinsic motivation reflects a desire for internal gratification, such as the self-satisfaction or pleasure derived from accomplishing a particular goal or performing a certain task. In other words, extrinsic motivation is a “means to an end,” whereas intrinsic motivation is an “end in itself” (Pittman, 1998).

In achievement situations, we may be pulled in opposite directions by two kinds of motives: achievement motivation (the desire to achieve success) and avoidance motivation (the desire to avoid failure). Achievement motivation leads us to undertake challenges that run the risk of failure but that may also lead to success. Avoidance motivation leads us to avoid taking chances that could result in failure; it prompts us to stick with the sure and safe path. Although avoidance motivation may reduce the chance of failure, it also reduces the likelihood of success. In one study, students with a lower level of avoidance motivation did better in their courses and showed higher levels of emotional well-being than those with a higher level of avoidance motivation (Elliot & Sheldon, 1997).

Achievement motivation develops early in life and is strongly influenced by parents. Parents whose children develop high needs for achievement typically encourage their children to be independent and to attempt difficult tasks. They reward them for their persistence at difficult tasks with praise and other reinforcements and encourage them to attempt even more challenging tasks (Dweck, 1997).

The Hierarchy of Needs: Ordering Needs from the Basement to the Attic of Human Experience

We have seen that both biological and psychological needs play important roles in human motivation. But how do these needs relate to each other? We now consider a model that bridges both sources of motivation—the hierarchy of needs developed by humanistic psychologist Abraham Maslow (1970).

As Figure 8.1 shows, Maslow’s hierarchy has five levels: (1) physiological needs, such as hunger and thirst; (2) safety needs, such as the need for secure housing; (3) love and belongingness needs, such as the need for intimate relationships; (4) esteem needs,
such as the need for the respect of one’s peers; and (5) the need for self-actualization, which is the need that motivates people to fulfill their unique potentials and become all they are capable of being. In Maslow’s view, our needs are ordered in such a way that we are motivated to meet basic needs before moving upward in the hierarchy. In other words, once we fill our bellies, we strive to meet higher-order needs, such as our needs for security, love, achievement, and self-actualization. Maslow believed that achieving a full measure of psychological integration and well-being depends on meeting all five levels of need.

Since no two people are perfectly alike, the drive for self-actualization leads people in different directions. For some, self-actualization may involve creating works of art, but for others it may mean striving on the playing field, in the classroom, or in a corporate office. Not all of us climb to the top of the hierarchy; we don’t all achieve self-actualization.

Maslow’s hierarchical model of needs has an intuitive appeal. We generally seek satisfaction of our basic needs for food, drink, and shelter before concerning ourselves with psychologically based needs like belongingness. But critics point out that our needs may not be ordered in as fixed a manner as Maslow’s hierarchy suggests. An artist might go for days with little if any nourishment in order to complete a new work of art.

CONCEPT 8.8
According to Maslow, human needs are organized in a hierarchy that ranges from biological needs at the base to the need for self-actualization at the top.

CONCEPT LINK
Maslow was a humanistic theorist who believed that the distinctly human drive toward self-actualization shapes our personality as well as our behavior. See Module 10.4 (pp. 372–376).
CONCEPT CHART 8.1
Sources of Motivation

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instincts</td>
<td>Instincts are fixed, inborn response patterns that are specific to members of a particular species.</td>
</tr>
<tr>
<td>Needs and drives</td>
<td>Unmet needs create internal drive states, which motivate behavior that leads to drive reduction.</td>
</tr>
<tr>
<td>Stimulus motives and optimal level of arousal</td>
<td>Stimulus motives arise from biologically based needs to be curious and active and to explore the environment. Arousal theory holds that we are motivated to maintain a level of stimulation that is optimal for us.</td>
</tr>
<tr>
<td>Incentives</td>
<td>The value we place on goals or objects creates a lure, or “pull,” to obtain them.</td>
</tr>
<tr>
<td>Psychosocial needs</td>
<td>These reflect psychosocial (interpersonal) needs, such as the needs for achievement and social relationships.</td>
</tr>
</tbody>
</table>

Note: According to Maslow, human needs are organized within a hierarchy that ranges from basic biological needs at the base to the need for self-actualization at the pinnacle.

work. People may forgo seeking satisfaction of their need for intimate relationships to focus their energies on career aspirations. Maslow might counter that eventually the emptiness of their emotional lives would motivate them to fill the gap.

Another problem with Maslow’s model is that the same behavior may reflect multiple needs. Perhaps you are attending college to satisfy physiological and safety needs (to prepare for a career so that you can earn money to live comfortably and securely), love and belongingness needs (to form friendships and social ties), esteem needs (to achieve status or approval), and self-actualization needs (to fulfill your intellectual or creative potential). Despite its limitations, Maslow’s model leads us to recognize that human behavior is motivated by higher pursuits as well as satisfaction of basic needs.

Before going forward, you may wish to review the sources of motivation outlined in Concept Chart 8.1.

Module 8.1 Review

Motivation: The “Why”s” of Behavior

RECITE IT

What is motivation?
• Motivation consists of the factors or internal processes that activate, direct, and sustain behavior toward the satisfaction of a need or the attainment of a goal.

What is instinct theory?
• Instinct theory proposes that behavior is motivated by genetically programmed, species-specific, fixed patterns of responses called instincts. While this model may have value in explaining some forms of animal behavior, human behavior is too complex to be explained by instincts.

What is drive theory?
• Drive theory asserts that animals are driven to satisfy unmet biological needs, such as hunger and thirst. The theory is limited, in part because it fails to account for motives involving the desire to increase states of arousal.

How does arousal theory account for differences in motivational states?
• According to arousal theory, the optimal level of arousal varies from person to person. To maintain arousal at an optimal level, some people seek exciting, even potentially dangerous, activities, while others seek more tranquil ones.
How does incentive theory differ from drive theory?
- Incentive theory focuses on the “pull,” or lure, of goals or objects that we perceive as attractive, whereas drive theory focuses on the “push” of unmet biological needs.

What are psychosocial needs?
- Psychosocial needs are distinctly human needs that are based on psychological rather than biological factors. They include the need for social relationships and the need for achievement.

RECALL IT
1. Factors that activate, direct, and sustain goal-directed behavior are referred to as ________.
2. Match the terms on the left with the definitions on the right:
   i. primary drive  a. a drive acquired through experience
   ii. secondary drive b. the tendency to maintain a steady internal state
   iii. need c. a state of deprivation or deficiency
   iv. homeostasis d. an innate biological drive
3. Sources of motivation that prompt us to explore our environment and manipulate objects, especially novel or unusual objects, are called ________.
4. The strength of the “pull” that a goal or reward exerts on our behavior is called its ________.
5. At the top of Maslow’s hierarchy of needs is the need that motivates people to fulfill their unique potentials and become all they are capable of being. This is known as the need for
   a. esteem. c. achievement.
   b. love and belongingness. d. self-actualization.

THINK ABOUT IT
- Do you believe that human behavior is motivated by instinct? Why or why not?
- Are you a self-actualizer? Upon what evidence do you base your judgment? What steps could you take to become a self-actualizer?

Hunger and Eating

Hunger is one of the most basic drives—and one of the most difficult to ignore. If your stomach is growling at this moment, you are unlikely to pay close attention to what you are reading. But there’s a lot more to hunger than a grumbling stomach.

What Makes Us Hungry?
It may seem that pangs of hunger arise from the grumblings of an empty stomach, but it is the brain, not the stomach, that controls hunger. It works like this: When we haven’t eaten for a while, our blood sugar levels drop. When this happens, fat is released from fat cells—body cells that store fat—to provide fuel that cells use until

CONCEPT 8.9
The hypothalamus detects decreases in blood sugar levels and depletion of fat from fat cells, which leads to the feelings of hunger that motivate eating.
we are able to eat again. The hypothalamus, a small structure in the forebrain that helps regulate hunger and many other bodily processes (discussed in Chapter 2), detects these changes and triggers a cascading series of events, leading to the feelings of hunger that motivate us to eat (Campfield et al., 1995). Eating restores an internally balanced state, or homeostasis, by bringing blood sugar levels back into balance and replenishing fat cells.

Different parts of the hypothalamus play different roles in regulating hunger (see Figure 8.2). Stimulating the lateral hypothalamus causes a laboratory animal to start eating even if it has just consumed a full meal. If the lateral hypothalamus is surgically destroyed, the animal will stop eating and eventually starve to death. Thus, we know that the lateral hypothalamus is involved in initiating, or "turning on," eating.

Another part of the hypothalamus, the ventromedial hypothalamus, acts as an off-switch that signals when it is time to stop eating. When this area is destroyed, animals will overeat and eventually become severely obese.

A mixture of chemicals in our bodies, including neurotransmitters and hormones, play important roles in regulating both appetite and feelings of satiety (Zhang et al., 2006). One of these chemicals, the neurotransmitter neuropeptide Y, works on the hypothalamus to stimulate appetite and eating. When we haven’t eaten in a while, the brain releases additional amounts of neuropeptide Y (Siegel, 2004). Other brain chemicals work to curb appetite and eating when we’ve had enough to eat (Korner & Leibel, 2003).

**Obesity: A National Epidemic**

Obesity, a state of excess body fat, is a national epidemic. We Americans are fatter than ever before. Today, nearly two-thirds of U.S. adults are overweight and nearly one-third are classified as obese (Howard et al., 2006; Powell, Calvin, & Calvin, 2007) (see Figure 8.3).

Why should it matter if we weigh too much? It matters because obesity is a major risk factor in many serious and potentially life-threatening health problems,
including cardiovascular disease (heart and artery disease), respiratory illnesses, diabetes, gallbladder disease, and some types of cancer (Gregg et al., 2005; Hossain, Kawar, & El Nahas, 2007; Yan et al., 2006). All told, obesity accounts for more than 100,000 excess deaths in the United States every year and shaves 6 or 7 years off the average person’s life expectancy (Flegal et al., 2005; Fontaine et al., 2003).

Health experts believe that obesity may cut the life expectancy of today’s children by as much as 2 to 5 years as compared to their parents’ generation (Olshansky et al., 2005; Preston, 2003). People who are overweight, even if they are not obese, also stand an increased risk of premature death (Adams et al., 2006; Jee et al., 2006; NCI, 2006).

Why are problems of overweight and obesity on the rise? Health experts cite two main factors: too many calories consumed and too little exercise. Many of us have become “couch potatoes” and “cyberslugs” who sit around too much, exercise too little, and eat way too much high-fat, high-calorie foods (Levine et al., 2005; Mitka, 2003).

Portion sizes in restaurants are also up—way up. Portion size is telling. In a recent study, investigators found that people tended to select more food, as measured by weight, when food was offered in larger portion or unit sizes or on larger plates (Geier, Rozin, & Doros, 2006). Another factor working against our winning the battle of the bulge is our increasing dependence on the automobile rather than foot power to get from place to place, especially for those of us living in sprawling suburban areas (McKee, 2003).

Obesity occurs when energy intake in the form of calories consumed (“energy in”) exceeds calories used (“energy out”) (Levine et al., 2005). Excess calories are converted into body fat, adding both weight and girth to the body (Pi-Sunyer, 2003).

Research points to a substantial role for genetics in obesity (Couzin, 2006; Herbert et al., 2006). Obese people may have a genetic predisposition to gain weight more readily than lean people. Body weight is influenced by one’s basal metabolic rate (also called basal metabolism), the rate at which the body burns calories while at rest. The slower the body’s metabolic rate, the more likely the person is to gain weight easily. Heredity may explain why some people have slower metabolic rates than others.

According to set point theory, the brain regulates body weight around a genetically predetermined level or “set point.” The theory proposes that when weight gain or loss occurs, the brain adjusts the basal metabolic rate to keep body weight around its set point (Pinel, Assanand, & Lehman, 2000). When people lose weight, the brain slows the body’s metabolic rate, and as this rate slows, the body conserves stores of fat. This perhaps explains why dieters often find it hard to continue losing weight or even to maintain their weight loss. The body’s ability to adjust its metabolic rate downward when caloric intake falls off is a bane to many dieters today, but it may have helped ancestral humans survive times of famine (Grady, 2002).

The number of fat cells in one’s body may also contribute to obesity. Obese people typically have more fat cells than do people of normal weight. Severely obese people may have 200 billion or more fat cells, as compared with the 25 billion or 30 billion fat cells in people of normal weight. As noted earlier, depletion of fat cells is a factor in triggering hunger. Since obese people typically have more fat cells than normal-weight individuals, they may feel hungry sooner after eating than do people with fewer fat cells. The human body may be designed as a kind of fat-storage machine that retains its fat cells to provide reserves of energy (stored fat) through lean times. Although genetics plays a role in determining the numbers of fat cells we have, early dietary patterns, such as excessive eating in childhood, may also play a role.

Whatever roles behavioral patterns and genetics play in obesity, they don’t tell the whole story. Environmental factors play a significant part as well (Hill et al., 2005).
We are constantly bombarded with food cues—TV commercials showing displays of tempting foods, aromas permeating the air as we walk by the bakery, and on and on. Consider that, among children, Ronald McDonald is the second most widely recognized figure, after Santa Claus (Parloff, 2003). Ads for fast-food restaurants typically feature burgers, shakes, and other high-calorie, high-fat items; more nutritious items, such as salads, are notably missing.

Emotional states, such as anger, fear, and depression, can prompt excessive eating. Many of us overeat in anger, or when we’re feeling lonely, bored, or depressed. Have you ever tried to quell anxiety over an upcoming examination by finishing off a carton of ice cream? We may find we can soothe our negative feelings, at least temporarily, by treating ourselves to food.

What’s the bottom line (or curve) on the causes of obesity? Behavioral patterns, genetics, environmental factors, and emotional cues all play a role. Yet even people whose genes predispose them to weight problems can achieve and maintain a healthy body weight by eating sensibly and exercising regularly. Regular physical activity not only burns calories; it also increases the metabolic rate because it builds muscles, and muscle tissue burns more calories than fatty tissue. Thus, regular exercise combined with gradual weight reduction can help offset the reduction in the body’s metabolic rate that may occur when we begin losing weight. Though people can expect to gain a modest amount of weight as they age, obesity is neither a natural nor an inevitable consequence of aging.

Health experts recognize that "quickie" diets are not the answer to long-term weight management. The great majority of people eventually regain any weight they lose on a diet. Diet or weight-loss drugs offer at best only a temporary benefit and may carry a risk of serious side effects. Moreover, despite images of smiling, thin people in television commercials, scientists find virtually no credible evidence that commercial weight loss programs help people lose weight and keep it off (Tsai & Wadden, 2005). Long-term success in losing excess weight and keeping it off requires a continuing commitment to a sensible, low-calorie, low-fat diet combined with regular exercise (Lamberg, 2006a; Ravussin, 2005; Wadden et al, 2005).

We also need to become calorie conscious. For example, we need to recognize that “low fat” does not necessarily mean “low calorie.” (Check the nutritional labels.) Even if obesity is not a current concern in your life, adopting healthy eating and exercise habits can help you avoid weight problems in the future. Table 8.1 offers suggestions for maintaining a healthy weight.

**Eating Disorders**

Karen, the 22-year-old daughter of a famed English professor, felt her weight was “just about right” (Boskind-White & White, 1983). But at seventy-eight pounds on a five-foot frame, she looked more like a prepubescent 11-year-old than a young adult. Her parents tried to persuade her to seek help with her eating behavior, but she continually denied she had a problem. Ultimately, however, after she lost yet another pound, her parents were able to convince her to enter a residential treatment program where her eating could be closely monitored. Nicole, 19, wakes up each morning hoping this will be the day she begins living normally—that today she’ll avoid gorging herself and inducing herself to vomit. But she doesn’t feel confident that her eating behavior and purging are under her control. The disordered eating behavior of Karen and Nicole are characteristic of the two major types of eating disorders: anorexia nervosa and bulimia nervosa.
TABLE 8.1  Suggestions for Maintaining a Healthy Weight

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Limit fat intake.</strong></td>
<td>The number of calories you need to maintain a healthy weight depends on many factors, including your body size, metabolic rate, and activity level. Health officials recommend limiting total intake of fat to less than 30 percent of daily calories and keeping intake of saturated fat at less than 10 percent (USDA, 1991). If 2,000 calories per day are needed to maintain one’s weight, this means consuming no more than 66 grams of fat and limiting saturated fat to 22 grams. (Note that 1 gram of fat contains 9 calories.)</td>
</tr>
<tr>
<td><strong>Control portion size.</strong></td>
<td>The major factor in controlling weight is striking a balance between calories consumed and calories expended. Controlling portion size can help you maintain this caloric balance.</td>
</tr>
<tr>
<td><strong>Slow down the pace of eating.</strong></td>
<td>It takes about fifteen minutes for your brain to register that your stomach feels full. Give it a chance to catch up with your stomach.</td>
</tr>
<tr>
<td><strong>Beware of hidden calories.</strong></td>
<td>Some fruit drinks and other beverages are loaded with calories, so be sure to check product labels for calorie contents. Try diluting fruit drinks with water, or substitute the actual fruit itself. Also be aware that many processed foods, especially baked goods, contain a lot of sugar and fat.</td>
</tr>
<tr>
<td><strong>Make physical activity a part of your lifestyle.</strong></td>
<td>Health experts recommend thirty minutes a day of moderate physical activity—activity equivalent in strenuousness to walking three to four miles per hour (Fogelholm et al., 2000; R. R. Pate et al., 1995). This doesn’t mean you must work out in a gym or jog around a park every day. Taking a brisk walk from your car to your office or school, climbing stairs, or doing vigorous work around the house can help you meet your daily exercise needs. But additional aerobic exercise—like running, swimming, or using equipment specially designed for aerobic exercise—may help even more. Before starting any exercise program, discuss your health needs and concerns with a health care provider.</td>
</tr>
</tbody>
</table>

Source: Adapted from Nevid & Rathus, 2007.

Anorexia Nervosa

Anorexia nervosa is a form of self-starvation that results in an unhealthy and potentially dangerously low body weight. It is characterized by both an intense fear of becoming fat and a distorted body image. Anorexia is found predominantly in young women. The anorectic woman may be convinced she is too fat, even though others see her as little more than “skin and bones.”

Anorexia is a dangerous medical condition and poses serious risks, including cardiovascular problems, such as irregular heartbeat and low blood pressure; gastrointestinal problems, such as chronic constipation and abdominal pain; loss of menstruation; and even deaths due to suicide or to medical complications associated with severe weight loss.

In a typical case, the young woman begins to notice some weight gain in adolescence. She becomes overly concerned about getting fat. She resorts to extreme dieting and perhaps excessive exercise to reduce her weight to a prepubescent level. She denies that she is too thin or losing too much weight, despite the concerns of others. In her mind’s eye, she is heavier than she actually is.

Bulimia Nervosa

Bulimia nervosa is characterized by a repetitive pattern of binge eating followed by purging. Purging usually involves self-induced vomiting but may take other forms.

Starved to Death  Brazilian fashion model Ana Carolina Reston was just 21 when she died in 2006 from medical complications due to anorexia. At the time of her death, the 5’7” young woman weighed but 88 pounds. Unfortunately, the problem of anorexia and other eating disorders among fashion models is widespread, as it is in other situations in which pressure is imposed to attain unrealistic standards of thinness.
such as excessive use of laxatives. Some bulimic individuals purge regularly after meals, not just after binges. Some engage in excessive, even compulsive, exercise regimens to try to control their weight. Like those with anorexia, people with bulimia are obsessed with their weight and unhappy with their bodies. But unlike those with anorexia, they typically maintain a relatively normal weight.

Bulimia usually begins in late adolescence following a period of rigid dieting to lose weight. Bingeing may alternate with strict dieting. The binge itself usually occurs in secret. During the binge, the person consumes enormous amounts of foods that are sweet and high in fat. Bulimia can lead to many medical complications, including potentially dangerous potassium deficiencies and decay of tooth enamel from frequent vomiting, and severe constipation from overuse of laxatives.

Causes of Eating Disorders

The preoccupation with thinness in our society and social pressures to conform to an ultra-thin ideal contribute to the development of eating disorders in young women (The McKnight Investigators, 2003). As many as 50 to 75 percent of adolescent girls are unhappy with their weight and body image (Rubinstein & Caballero, 2000). The developing body image of girls and young women may be damaged by exposure to cultural icons epitomizing an unrealistically thin ideal, such as the Barbie doll and emaciated-looking female models and actresses (Dittmar, Halliwell, & I've, 2006). Not surprisingly, we find evidence that more college women believe they are overweight, whereas more college men perceive themselves as underweight (see Figure 8.4) (American College Health Association, 2005).

Pressure on women to achieve and maintain thinness is so prevalent in our culture that dieting has become a normative eating pattern among American women. Concerns about weight become expressed in different ways, such as in feelings of guilt or shame associated with eating treats or even purchasing them. A recent survey showed that about one in seven college women said they would be embarrassed to buy a chocolate bar in a store (Rozin, Bauer, & Catanese, 2003). Media portrayals of the thin ideal and peer influences appear to negatively affect the development of body image and self-esteem in girls as young as 5 years of age (Dohnt & Tiggemann, 2006).

Social pressure to achieve and maintain a slender figure falls most heavily on women in our society, especially young women. In reality, however, the gender gap in obesity is quite small (see Figure 8.1 on page 271). Moreover, gender differences in obesity tend not to develop until midlife.

Anorexia affects about 0.9 percent of women in our society (about nine in a thousand), according to the most recent population-based survey (Hudson et al., 2006). Estimates are that about 1 to 3 percent of women are affected by bulimia at some point in their lives (American Psychiatric Association, 2000). Eating disorders disproportionately affect young women, with prevalence rates among men estimated to be about 0.3 percent (three in a thousand) for anorexia and 0.3 percent or fewer for bulimia (American Psychiatric Association, 2000; Hudson et al., 2006). Many of the men with eating disorders participate in sports, such as wrestling, in which they face pressures to maintain their weight within a narrow range.

Eating disorders are much less common in non-Western countries that lack our cultural emphasis on thinness. They are also less common among African American women and women from other minority groups for whom body image is not as closely tied to body weight as it is among non-Hispanic White women (Striegel-Moore et al., 2003). Yet body dissatisfaction can affect ethnic-minority as well as Euro-American women, and body dissatisfaction predicts depression and eating
behavior in women of color as well as Euro-American women (Grabe & Hyde, 2006; Winerman, 2006c). Body dissatisfaction also occurs in men and is linked to the desire to be lean and muscular (Tiggemann, Martins, & Kirkbride, 2007).

Factors other than societal expectations of thinness also play a role in eating disorders. Many young women with eating disorders have issues relating to perfectionism and control. They may place unreasonable pressures on themselves to achieve a “perfect body” or feel that the only part of their lives they can control is their dieting. Eating disorders also frequently develop in young women with histories of childhood sexual or physical abuse or whose families are wracked by conflict (Jacobi et al., 2004). Some theorists speculate that anorexia may arise from an unconscious wish in female adolescents to remain little girls.

Biological factors, such as genetics and disturbances in brain mechanisms that control hunger and satiety, are also believed to contribute to eating disorders (Bulik et al., 2006; Lamberg, 2003). Irregularities in the activity of serotonin, a neurotransmitter involved in regulating feelings of satiety, may prompt bulimic binges. Antidepressant drugs that boost the availability of serotonin in the brain can help reduce binges (Walsh et al., 2004).

Although we have seen promising results in treating eating disorders with psychological and drug therapies (e.g., Agency for Healthcare Research and Quality, 2006; Walsh et al., 2004), we should recognize that recovery is typically a long-term process and that relapses and continuing symptoms are altogether too common (Fairburn et al., 2003).

Concept Chart 8.2 presents an overview of our discussion of hunger, obesity, and eating disorders.
CONCEPT CHART 8.2
Hunger, Obesity, and Eating Disorders

<table>
<thead>
<tr>
<th>Hunger and Appetite</th>
<th>Obesity</th>
<th>Eating Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>The hypothalamus detects low blood sugar levels and depletion of fat in fat cells, leading to feelings of hunger that motivate eating. Hormones and neurotransmitters also play important roles in regulating hunger and appetite.</td>
<td>Causes of obesity are genetic, psychological, and environmental. They include metabolic rate, number of fat cells in the body, behavioral patterns (such as an unhealthy diet and lack of exercise), and emotional and environmental cues that prompt eating.</td>
<td>Cultural pressure to achieve unrealistic standards of thinness is a major factor in fostering anorexia (self-starvation) and bulimia (binge eating followed by purging). Psychological causes of eating disorders may include issues of control and perfectionism, sexual or physical abuse during childhood, family conflicts, and, for anorexia, underlying fears of adulthood and sexual maturity. Biological factors that may be implicated in eating disorders include genetics, abnormalities in brain mechanisms that control feelings of hunger and satiation, and irregularities in serotonin activity.</td>
</tr>
</tbody>
</table>

Module 8.2 Review

**Hunger and Eating**

**RECITE IT**

**How are hunger and appetite regulated?**
- Homeostatic processes in the brain regulate hunger and appetite. The hypothalamus plays a pivotal role. It senses changes in blood sugar levels and depletion of fat from fat cells, which leads to the feelings of hunger that motivate eating. Neurotransmitters and hormones also play important roles in regulating hunger and appetite.

**What causes obesity?**
- Obesity is a complex problem that has multiple causes, including behavioral patterns, genetics, metabolic factors, and environmental and emotional factors. Genetics may affect basal metabolic rate and the number of fat cells in the body.

**What is anorexia nervosa?**
- Anorexia nervosa is an eating disorder in which people starve themselves because of exaggerated concerns about weight gain.

**What is bulimia nervosa?**
- Bulimia nervosa is an eating disorder characterized by episodes of binge eating followed by purging. Purging is accomplished through self-induced vomiting or other means, such as excessive use of laxatives.

**What are the causes of eating disorders?**
- Many factors are implicated in eating disorders. They include cultural pressure on young women to achieve unrealistic standards of thinness, issues of control and perfectionism, childhood abuse, family conflicts, and possible disturbances in brain mechanisms that control hunger and satiety.

**RECALL IT**

1. Which of the following does not describe what happens physiologically after a person has not eaten for a while?
   b. Fat is released from fat cells.
   c. The ventromedial hypothalamus signals that it is time to start eating.
   d. The brain releases more neuropeptide Y.

2. If the lateral hypothalamus in a laboratory animal is stimulated, the animal
   a. stops eating.
   b. starves to death.
   c. begins to eat even if it has just consumed a full meal.
   d. becomes obese.

3. Match the terms on the left with the definitions on the right:
   i. lateral hypothalamus
   ii. ventromedial hypothalamus
   iii. basal metabolic rate
   iv. set point
   a. the rate at which the body at rest burns calories
   b. works like an on-switch for hypothalamus eating
   c. a genetically predetermined range for weight
   d. works like an off-switch for signaling when it is time to stop eating

4. Irregularities in the regulation of the neurotransmitter ________ may be involved in prompting bulimic binges.
THINK ABOUT IT

- What would you say to someone who claims that people become obese because they lack willpower?

- How much should you weigh? Has your answer to this question changed as a result of our discussion of obesity? Are you aware of your daily calorie intake? If not, should you be? Do you have any unhealthy eating habits you would like to change? If so, how might you change them?

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Module 8.3

**Sexual Motivation**

- What are the phases of the sexual response cycle?
- How do researchers conceptualize sexual orientation?
- What are the causes of sexual dysfunctions, and how are they treated?

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Our sexuality is another important source of motivation, but it also has an important bearing on our personality—the qualities that make us unique. For example, our **gender identity** (sense of maleness or femaleness) and **sexual orientation** (direction of erotic attraction) are essential parts of our self-identity. Each society not only imposes rules for governing sexual conduct, but it also establishes a set of expectations, or **gender roles**, that designate the behaviors and roles it deems appropriate for men and women to perform. Gender roles stipulate how men and women should behave, how they should dress, what work they should do, and how they should interact with each other.

There is great variety in human sexual expression, including such sexual practices as oral sex, anal sex, and masturbation. Our bodies can respond to many forms of sexual stimulation, but our sexual behavior is more strongly determined by such factors as cultural learning, personal values, and individual experiences than by biological drives or capacities for sexual response.

The range of sexual behavior can be seen in the results of a large-scale, national survey of sexual practices (Laumann et al., 1994). About one in four men (27 percent) but fewer than one in ten women (7.6 percent) reported masturbating at least once a week. (Many more probably did so but failed to report it.) Among married couples, 80 percent of the men and 71 percent of the women reported performing oral sex on their partners; 80 percent of the men and 74 percent of the women reported receiving oral sex. Much lower percentages of the people surveyed—26 percent of the men and 20 percent of the women—reported engaging in anal intercourse at some point in their lives. Results from another study show that, on the average, married couples report having intercourse at a frequency of slightly more than once a week (Deveny, 2003), but here again there is considerable diversity (see Figure 8.5).

In this module we focus on how our bodies respond to sexual stimulation. We then examine sexual orientation, or the direction of our erotic attractions and interests. Finally, we consider the different types of sexual dysfunctions and how helping professionals treat these problems. In Chapter 13, we shall consider the

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CONCEPT 8.14
Each society defines masculinity and femininity by imposing a set of gender-based expectations, called gender roles, that designate the behaviors and roles deemed appropriate for men and women.
important relationships between sexual behavior and risks of sexually transmitted diseases.

**The Sexual Response Cycle: How Your Body Gets Turned On**

Much of what we’ve learned about the physical response of the body to sexual stimulation comes from the pioneering research of William Masters and Virginia Johnson. They demonstrated that the body responds to sexual stimulation with a characteristic pattern of changes, which they called the sexual response cycle. They divided the sexual response cycle into four phases: excitement, plateau, orgasm, and resolution (Masters & Johnson, 1966). Figures 8.6(a) and 8.6(b) show the levels of sexual arousal during the phases of the sexual response cycle in men and women, respectively. These changes are summarized in Table 8.2.

There are obvious gender differences in how our bodies respond to sexual stimulation. The penis in males becomes erect; the vagina in women becomes moist through a process called vaginal lubrication. Yet both of these markers of sexual excitement (arousal) reflect the same underlying biological process, vasocongestion, or pooling of blood in bodily tissues. Overall, the similarities in the sexual responses of men and women listed in Table 8.2 may surprise you. Yet there is one important difference. Unlike women, men enter a refractory period following orgasm. This is the period of time in which men are physiologically incapable of achieving another orgasm or ejaculation. Women do not experience a refractory period. With continued stimulation they are capable of becoming quickly rearoused to the point of repeated (multiple) orgasms.

Now that we’ve considered how the body responds to sexual stimulation, let us consider the variations that exist in the direction of our sexual interests.

**Sexual Orientation**

Sexual orientation refers to the direction of one’s erotic attraction and romantic interests—whether one is attracted toward members of one’s sex, the opposite sex, or both sexes. Heterosexuals are sexually attracted to members of the opposite sex. Gay males and lesbians are attracted to members of their own sex, and bisexuals are attracted to members of both sexes. Yet the boundaries between these different sexual orientations may not be as clearly drawn as you might think. Today, many investigators conceptualize sexual orientation as a continuum with many gradations.

**CONCEPT 8.15**

Landmark research by Masters and Johnson showed that the body’s response to sexual stimulation can be characterized in terms of a sexual response cycle consisting of four phases: excitement, plateau, orgasm, and resolution.

**CONCEPT 8.16**

Sexual orientation is generally conceptualized as a continuum ranging from exclusive homosexuality on one end to exclusive heterosexuality on the other end.

**FIGURE 8.6 The Sexual Response Cycle**

Here we see the level of sexual arousal across the four phases of the cycle. Men enter a refractory period after orgasm in which they become unresponsive to sexual stimulation. But as indicated by the broken line, men may become rearoused to the point of orgasm once the refractory period is past. Women do not enter a refractory period. Pattern A shows a woman’s cycle with multiple orgasms, as indicated by the dotted line. Pattern B shows a response cycle in which the woman reaches the plateau stage but does not achieve orgasm. Pattern C shows a pattern leading to orgasm in which the woman quickly passes through the plateau phase.
TABLE 8.2 Sexual Response Cycle: How Our Bodies Respond to Sexual Stimulation

<table>
<thead>
<tr>
<th>Phase of Sexual Response</th>
<th>In Males</th>
<th>In Females</th>
<th>In Both Genders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Excitement Phase</strong></td>
<td>Vasocongestion results in erection.</td>
<td>Vasocongestion swells the vaginal tissue, the clitoris, and the area surrounding the opening of the vagina.</td>
<td>Vasocongestion of the genital tissues occurs.</td>
</tr>
<tr>
<td></td>
<td>The testes begin to elevate.</td>
<td>Vaginal lubrication appears.</td>
<td>Heart rate, muscle tension (myotonia), and blood pressure increase.</td>
</tr>
<tr>
<td></td>
<td>Skin on the scrotum tenses and thickens.</td>
<td>The inner two-thirds of the vagina expand, and the vaginal walls thicken and turn a deeper color.</td>
<td>Nipples may become erect.</td>
</tr>
<tr>
<td><strong>Plateau Phase</strong></td>
<td>The tip of the penis turns a deep reddish-purple.</td>
<td>The inner two-thirds of the vagina expand fully.</td>
<td>Vasocongestion increases.</td>
</tr>
<tr>
<td></td>
<td>The testes become completely elevated.</td>
<td>The outer third of the vagina thickens.</td>
<td>Myotonia, heart rate, and blood pressure continue to increase.</td>
</tr>
<tr>
<td></td>
<td>Droplets of semen may be released from the penile opening before ejaculation.</td>
<td>The clitoris retracts behind its hood, and the uterus elevates and increases in size.</td>
<td></td>
</tr>
<tr>
<td><strong>Orgasm Phase</strong></td>
<td>Sensations of impending ejaculation lasting 2 to 3 seconds precede the ejaculatory reflex.</td>
<td>Orgasmic release of sexual tension occurs, producing intense feelings of pleasure.</td>
<td>Muscle spasms occur throughout the body; blood pressure, heart rate, and breathing rate reach a peak.</td>
</tr>
<tr>
<td></td>
<td>Orgasmic contractions propel semen through the penis and out of the body.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resolution Phase</strong></td>
<td>Men become physiologically incapable of achieving another orgasm or ejaculation for a period of time called the refractory period.</td>
<td>Multiple orgasms may occur if the woman desires it and sexual stimulation continues.</td>
<td>Lacking continued sexual stimulation, myotonia and vasocongestion lessen and the body gradually returns to its prearoused state.</td>
</tr>
</tbody>
</table>

Ranging from exclusive homosexuality on one end to exclusive heterosexuality on the other (DeAngelis, 2001).

Surveys in the United States and Europe find that about 1 to 3 percent of men, and about 1 to 2 percent of women, identify themselves as exclusively gay (Billy et al., 1993; Laumann et al., 1994). Higher percentages (about 20 to 25 percent of men and about 17 percent of women) report having had some same-sex sexual contact during adolescence or adulthood. In addition, some 1 to 4 percent of the general population can be classified as bisexual (Gabriel, 1995).

**Psychological Theories of Sexual Orientation**

Why are some people homosexual while others are bisexual or heterosexual? Why are you the way you are? Though the causes of sexual orientation remain under study, one thing is clear: People don’t choose to be gay or straight. We don’t make a conscious decision to adopt a particular sexual orientation, as we might select a college major, say, or a life partner.

Freud (1922/1959) believed that heterosexuality develops from a “normal” process of identification with the parent of the same sex. In contrast, he believed that homosexuality results from an overidentification with the parent of the opposite sex—boys with their mothers, girls with their fathers. Freud’s views have been provocative,
but are they supported by evidence? Investigators find such great variation among families of gay males, lesbians, and heterosexuals that no one pattern applies in all cases (Isay, 1990). Many gay males had close relationships with their fathers, while many heterosexual males had close relationships with their mothers.

Compared with their heterosexual counterparts, gay males and lesbians typically recall more cross-gender behavior in childhood, such as preferring clothes, games, and toys typically associated with the opposite sex—a finding that squares with Freud’s expectations (Bailey & Zucker, 1995; Rahman & Wilson, 2002). But does such evidence confirm Freud’s views? Not necessarily. Recent evidence suggests that genetics may play a role in determining gender nonconformity in childhood for both genders (Bailey, Dunne, & Martin, 2000; Knafo, Iervolino, & Plomin, 2005). We should also note some limitations to these findings. Many gay males and lesbians had interest patterns in childhood that were typical of their own gender. Recognize, too, that gay males are found among the ranks of the most “macho” football and hockey players.

Many gay males report childhood recollections of feeling and acting “different” than their peers at a very young age—often as early as 3 or 4 (Isay, 1990). Gay men are more likely than heterosexual comparison groups to recall being more sensitive than other boys and having fewer male buddies (Bailey & Zucker, 1995). Perhaps, as these boys mature, feelings of differentness become transformed into erotic attractions. As psychologist Darryl Bem (1996) put it, what was exotic now becomes erotic. A similar process may occur in girls who develop a lesbian sexual orientation.

Biological Theories of Sexual Orientation

Identical (MZ) twins are more likely to have the same sexual orientation than fraternal (DZ) twins, a finding that supports a genetic contribution (Bailey, 2003; Hyde, 2005). This pattern is found even among twins who were separated shortly after birth and raised in different families. But the fact that one identical twin is gay or heterosexual doesn’t necessarily mean that the other will follow suit. Life experiences and environmental influences also contribute to the development of sexual orientation (Kendler, Thornton, Gilman, & Kessler, 2000). Moreover, genetic factors appear to play a larger role in determining homosexuality in men than in women (LeVay, 2003).

What about the role of sex hormones? Most studies fail to find any differences in circulating sex hormones in adult gay males and lesbians in comparison with their heterosexual counterparts (LeVay, 2003). However, scientists speculate that the male sex hormone testosterone may play a role in shaping the developing brain during prenatal development in ways that later affect sexual orientation (T. J. Williams et al., 2000; LeVay, 2003). Recent evidence even raises the possibility that maternal use of certain prescription drugs during pregnancy may influence sex hormone levels during prenatal development, affecting the later development of sexual orientation (Ellis & Hellberg, 2005).

In sum, research on the origins of sexual orientation remains inconclusive. Most experts believe that sexual orientation is explained not by any single factor but, rather, by a combination of genes, hormones, and the environment interacting throughout the life span (Bailey, Dunne, & Martin, 2000; Jones & Yarhouse, 2001). As it is possible to arrive at the same destination via different routes, we should allow for the possibility that multiple pathways are involved in explaining how people develop their sexual orientations (Garnets, 2002).

Sexual Dysfunctions

Occasional problems with sexual interest or response are quite common and may affect virtually everyone at one time or another. Men may occasionally have difficulty achieving erections or may ejaculate sooner than they desire. Women may
Sexual dysfunctions are persistent or recurrent problems with sexual interest, arousal, or response. Though occasional problems with sexual interest, arousal, or response are common, persistent problems that are the cause of personal distress are classified as sexual dysfunctions.

CONCEPT 8.18
Sexual dysfunctions involve problems relating to lack of sexual desire or interest, or difficulties becoming sexually aroused or achieving orgasm. Women are more likely than men to experience lack of sexual interest or desire and difficulty reaching orgasm (I. Goldstein et al., 2006; Leiblum et al., 2006). Men may also lack sexual desire or be troubled by erectile dysfunction (difficulty or inability achieving or maintaining erections) or premature ejaculation (rapid ejaculation with minimum stimulation). The causes of sexual dysfunctions involve both biological and psychosocial factors.

Biological Causes
Neurological or circulatory conditions or diseases can interfere with sexual interest, arousal, or response. These include diabetes, multiple sclerosis, spinal-cord injuries, epilepsy, complications from surgery (such as prostate surgery in men), side effects of certain medications, and hormonal problems. Psychoactive drugs, such as cocaine, alcohol, and narcotics, may dampen sexual interest or impair sexual responsiveness. Most cases of erectile disorder can be traced to biological factors, with circulatory problems topping the list (Kleinplatz, 2003; Thompson et al., 2005).

Testosterone energizes sexual drives in both sexes, and deficiencies of the hormone can dampen sexual desire (Bachmann et al., 2002; Davis et al., 2005). In fact, although testosterone is a male sex hormone produced in the testes, it is produced in smaller amounts in women’s ovaries and in the adrenal glands of both men and women. That being said, most men and women with sexual dysfunctions have normal sex hormone levels.

Psychosocial Causes
Children who are reared in homes in which negative attitudes toward sexuality prevail may encounter anxiety, guilt, or shame when they become sexually active, rather than sexual arousal and pleasure. This is especially true of young women exposed to sexually repressive cultural attitudes. Such socialization pressures may discourage women from learning about their sexual responsiveness or inhibit them from asserting their sexual needs with their partners.

Some couples fall into a sexual routine, perhaps even a rut. Couples who fail to communicate their sexual preferences or to regularly invigorate their lovemaking routines may find themselves losing interest. Relationship problems can also impair a couple’s sexual responsiveness, as conflicts between them and long-simmering resentments may be carried into bed.

Survivors of rape and other sexual traumas often develop deep feelings of disgust or revulsion toward sex (Bean, 2002). Not surprisingly, they often have difficulty responding sexually, even with loving partners. Other emotional factors, especially anxiety, depression, and anger, can also lessen sexual interest or responsiveness.

Anxiety, especially performance anxiety, may make it impossible for a man to achieve or sustain an erection or for a woman to become adequately lubricated or achieve orgasm (Bancroft et al., 2005; McCabe, 2005). Failure to perform then fuels further self-doubts and fears of repeated failure, which in turn heighten anxiety on subsequent occasions, leading to yet more failure experiences and so on in a vicious cycle.

Premature ejaculation may arise from a failure to keep the level of stimulation below the man’s ejaculatory threshold, or “point of no return.” Though ejaculation is a reflex, men need to learn (usually through a trial-and-error procedure) to gauge their level of stimulation so that it does not exceed their ejaculatory threshold.
They need to signal their partners to stop stimulation before this point so that their sensations can subside before resuming again.

**Treatment of Sexual Dysfunctions**

The good news is that most cases of sexual dysfunction can be treated successfully through either biological or psychological approaches, or a combination approach. Sex therapy, a relatively brief form of psychological treatment, was pioneered by William Masters and Virginia Johnson (Masters & Johnson, 1970). In sex therapy, individuals, but usually couples, meet with a therapist or a pair of male and female therapists who help them learn specific, behavioral techniques to overcome their sexual difficulties.

Biological therapies are also available to help people with sexual dysfunctions. Testosterone therapy may be helpful in treating problems of low sexual interest or desire (Brown & Haaser, 2005). Viagra and other similar drugs are effective in producing erections in the majority of men suffering from erectile disorder (Naughton, 2004; Walker, 2004). They work by relaxing blood vessels in the penis, allowing them to expand and carry more blood to the penis. We still lack safe and effective pharmacological treatments for female sexual dysfunction, though testing of Viagra and other drugs is ongoing (Berman et al., 2003; Kleinplatz, 2003).

Certain drugs used to treat depression, such as the antidepressant Zoloft (generic name sertraline), can also be useful in treating premature ejaculation (Waldinger et al., 2001). Delayed ejaculation appears to a common side effect of these drugs, which may be a benefit to men suffering from premature ejaculation.

Before moving ahead, you may wish to review the major concepts relating to sexual motivation outlined in Concept Chart 8.3.

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**Concept Chart 8.3**  
**Sexual Response and Behavior**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Description</th>
<th>Additional Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual response cycle</td>
<td>The characteristic pattern of bodily responses to sexual stimulation</td>
<td>According to Masters and Johnson, the sexual response cycle consists of four phases: excitement, plateau, orgasm, and resolution.</td>
</tr>
<tr>
<td>Sexual orientation</td>
<td>The direction of sexual attraction to one’s own gender, to the opposite gender, or to both genders</td>
<td>The roots of sexual orientation remain obscure, but most investigators hold the view that genetic, hormonal, and environmental factors interact in the development of sexual orientation.</td>
</tr>
<tr>
<td>Sexual behavior</td>
<td>Includes masturbation, sexual intercourse, oral sex, and anal sex</td>
<td>Though the human body can respond to many forms of sexual stimulation, sexual behavior is strongly influenced by cultural learning, personal values, and individual experiences, not simply by biological drives or capacities for sexual response.</td>
</tr>
<tr>
<td>Sexual dysfunctions</td>
<td>Persistent problems with sexual interest, arousal, or response</td>
<td>The causes of sexual dysfunctions include biological factors (hormonal or medical problems) and psychosocial factors (guilt or anxiety, relationship issues, history of sexual trauma). Psychological and biological treatments are available to help people overcome sexual dysfunctions.</td>
</tr>
</tbody>
</table>
Module 8.3 Review

Sexual Motivation

RECITE IT

What are the phases of the sexual response cycle?
- The excitement phase is characterized by erection in the male and vaginal lubrication in the female. The plateau phase is an advanced state of arousal that precedes orgasm. The orgasm phase is characterized by orgasmic contractions of the pelvic musculature. During the resolution phase, the body returns to its prearoused state.

How do researchers conceptualize sexual orientation?
- Most researchers conceptualize sexual orientation as a continuum with many gradations ranging from exclusive homosexuality on one end to exclusive heterosexuality on the other.

RECALL IT

1. Our sense of maleness or femaleness describes our _________.
2. Regarding the human sexual response cycle, match the following terms with the ones listed below: (a) sexual release, intense pleasure; (b) body returns to prearoused state; (c) increased muscle tension and further increases in vasocongestion; (d) initial response to sexual stimulation.
   i. excitement phase    iii. orgasmic phase
   ii. plateau phase      iv. resolution phase
3. Which of the following statements best describes how the drug Viagra works?
   a. It increases sex drive.
   b. It relaxes blood vessels in the penis.
   c. It lowers blood pressure.
   d. It stimulates the muscles of the penis.
4. The failure to keep the level of stimulation below the man’s ejaculatory threshold can lead to _________.

THINK ABOUT IT

- Are you struggling with issues concerning your sexual orientation? Do you know someone who is? Are there resources on your campus or in your community that provide counseling services to people with these types of questions? How can you find out more about these services?
- How do your sexual practices reflect your personal values? Which people have been the major influences on your sexual personal values?

Module 8.4

Emotions

- What are the three components of emotions?
- Are facial expressions of emotion universal?
- Does money buy happiness?
- What role do brain structures play in emotions?

- What are the major theories of emotions?
- What is emotional intelligence?
- What is the polygraph?

Emotions are feeling states that psychologists view as having physiological, cognitive, and behavioral components.
What Are Emotions?

Most people think of emotions simply as feelings, such as feelings of joy or anger. But psychologists view emotions as more complex feeling states that have three basic components: bodily arousal (nervous system activation), cognitions (subjective, or conscious, experience of the feeling, as well as the thoughts or judgments we have about people or situations that evoke the feeling), and expressed behaviors (outward expression of the emotion, such as approaching a love object or avoiding a feared one).

There is a degree of truth to the belief that we feel with our hearts. Strong emotions, such as fear and anger, are accompanied by activation of the sympathetic branch of the autonomic nervous system (ANS). As we noted in Chapter 2, activation of the sympathetic nervous system prompts the adrenal glands to release the hormones epinephrine and norepinephrine, which raise the body’s level of arousal.

The cognitive component of fear includes the subjective experience of feeling afraid, as well as the judgment that the situation is threatening. (If someone tosses a rubber snake at your feet, it may startle you, but it will not evoke fear when you appraise it as a fake.) The cognitive component of anger includes the judgment (cognitive appraisal) that events or the actions of others are unjust.

The behavioral expression of emotions generally takes two forms. We tend to approach objects or situations associated with pleasant emotions, such as joy or love, and to avoid those associated with fear, loathing, or disgust. When afraid, we approach the feared object in the hope of fighting it off, or we try to flee from it. Similarly, when angry, we tend to attack (approach) the object of our anger or to withdraw from it (i.e., keep it at a distance). The behavioral component of emotions also encompasses ways in which we express emotions through facial features and other outward behaviors, such as gestures, tone of voice, and bodily posture.

Emotional Expression: Read Any Good Faces Lately?

Charles Darwin (1872) believed that emotions evolved because they have an adaptive purpose in helping species survive and flourish. Fear mobilizes animals to take defensive action in the face of a threatening predator; anger can be adaptive in provoking aggression that helps secure territory, resources, or mating partners. Darwin also recognized that the expression of emotions has communication value. For example, an animal displaying fear through its bodily posture or facial expression may signal others of its kind that danger lurks nearby. Darwin was the first to link specific facial expressions to particular emotions.

We can see the evolutionary roots of emotional expression in the similarity of the facial expressions of humans and nonhuman primates, such as gorillas. You don’t need instructions to interpret the emotion expressed by the bared teeth of the ape and human shown in Figure 8.7. This cross-species similarity in facial expression supports Darwin’s view that human modes of emotional expression evolved from nonhuman primate ancestors (Chevalier-Skolnikoff, 1973).

Facial Expressions of Emotion: Are They Universal?

Cross-cultural studies show that people in many different cultures can accurately identify six basic emotions from facial expressions: anger, fear, disgust, sadness, happiness, and surprise (Ekman, 2003; Matsumoto, 2004). In an early but revealing study, researchers had American students watch Japanese soap operas. Although the students didn’t speak a word of Japanese, they recognized the emotions displayed by the characters simply by observing the facial expressions of the actors (Krauss, Curran, & Ferleger, 1983). Facial analysis tools developed by psychologist Paul Ekman, a leading authority on facial expressions of emotions, are now being used by airport screeners to detect telltale signs of emotions in people’s faces in the effort to spot terrorists (Lipton, 2006).
The evidence thus supports the view that six basic emotional expressions are universally recognized. Yet some emotions may be more widely recognized than others (Russell, Bachorowski, & Fernández-Dol, 2003). For example, most people recognize a smile as a sign of happiness, but agreement between people falls off when they are asked to decipher other facial expressions.

**Cultural and Gender Differences in Emotions**

Though people the world over may recognize the same basic facial expressions of emotions, subtle differences exist across cultures in the appearance of these expressions (Marsh, Elfenbein, & Ambady, 2003). We can think of cultural differences in facial expressions as akin to nonverbal accents.

Research has also uncovered cultural differences in how accurately emotions are recognized and how they are experienced and displayed. For example, people are generally more accurate when recognizing facial expressions of emotions in people of their own national, ethnic, and regional groups (Elfenbein & Ambady, 2002a, 2002b). In addition, certain emotions are more common in some cultures or even unique to a particular culture (Markus & Kitayama, 1991; Niiya, Ellsworth, & Yamaguchi, 2006). For example, Japanese people commonly report such emotions as *fureai* (feeling closely linked to others) and *oime* (an unpleasant feeling of indebtedness to others, similar to our feeling of being "beholden"). These emotions are not unknown in the United States, but they are not as central to our lives as they are in Japan, where there is a greater cultural emphasis on communal values and mutual obligations.

Cultures also differ in how, or even whether, emotions are displayed. For example, Asian cultures, including traditional Chinese culture, tend to frown on public displays of emotion, whereas emotions are expressed more openly in Mexican culture (Levenson, & Ebling, 2005; Soto, Levenson, & Ebling, 2005). In Asian cultures, people are expected to suppress their feelings in public; a failure to keep their feelings to themselves reflects poorly on their upbringing.

We use the term **display rules** to describe cultural customs and norms that regulate the display of emotion. Cultures vary in the rules regulating emotional expression (Matsumoto et al., 2005). These display rules are learned as part of the socialization process and become so ingrained that they occur automatically among members of the same culture (see Try This Out).

An emotion researcher has detected what he believes are distinctive national styles of smiling. Psychology professor Dacher Keltner of University of California at Berkeley notes that Americans tend to draw the corners of their lips up, showing their upper teeth, whereas Britishers tend to draw their lips back as well as up, displaying their lower teeth (Max, 2005). He notes that the British smile can come across as a kind of suppressed grimace. See if you can see this difference in the accompanying photos of Prince Charles and the American actor Tom Cruise.

**National Smiles** Do people from different cultures or countries smile differently? Can you detect any differences in the smiles of American actor Tom Cruise and Prince Charles of England?

**display rules** Cultural customs and norms that govern the display of emotional expressions.
Chapter 8  Motivation and Emotion

Try This Out
Reading Emotions in Facial Expressions

The same emotional expressions found in the streets of Chicago are found in the distant corners of the world. The photographs accompanying this exercise show a man from a remote area of New Guinea. You'll probably have little difficulty recognizing the emotions he is portraying. Before reading further, match the following emotions to the numbers on the photos: (a) disgust, (b) sadness, (c) happiness, and (d) anger.

1. _______  2. _______  3. _______  4. _______


Cultures also have rules for governing the appropriate display of emotions by men and women. In many cultures, women are given greater latitude than men in expressing certain emotions, such as joy, love, fear, and sadness, whereas men are permitted more direct displays of anger (Dittman, 2003a). Evidence shows that women do tend to experience certain emotional states (joy, love, fear, sadness) more often than men (Brebner, 2003; Fischer et al., 2004). Yet the scientific jury is still out on whether there are gender differences in the experience of anger (Evers et al., 2005).

Women are generally better able than men to express their feelings in both words and facial expressions and to be able to recognize and recall feelings in others (DePaulo & Friedman, 1998; Ripley, 2005). Investigators suspect that women’s brains may be wired differently than men’s, allowing them to better perceive and recall emotional cues (Canli et al., 2002). However, these gender differences may be more complex. The results of a recent study showed that women were better at recognizing happy or sad faces, but men held the advantage in discerning angry faces (Bakalar, 2006; Williams & Mattingley, 2006).

In Western cultures, men aren’t supposed to cry or show their emotions, or even to smile very much. Not surprisingly, evidence shows that women tend to smile more than men (LaFrance, Hecht, & Paluck, 2003). However, the ideal of the stoic unemotional male epitomized by Hollywood action heroes may be giving way to a new ideal: the “sensitive” male character.

CONCEPT 8.24
People seem to have a particular “set point” for happiness, a level that remains fairly constant despite the ups and downs of life.

Happiness: What Makes You Happy?
Happiness may be a primary human emotion, but it has long been neglected by psychologists, who have focused mostly on understanding negative emotions such
as fear, anger, and sadness. However, promoting human happiness is a key goal of positive psychology, a growing movement within psychology (see Chapter 1). The architects of the positive psychology movement believe that psychology should focus more on promoting human happiness and building human strengths and assets, such as the capacity to love and be loved, rather than just repairing negative emotions such as anxiety and depression (Gable & Haidt, 2005; Lyubomirsky, Sheldon, & Schkade, 2005; Seligman et al., 2005; Simonton & Baumeister, 2005).

What makes people happy? Is wealth the key? People often think that they’d be a lot happier if they were much wealthier, but the association between money and happiness is largely an illusion fed by the focus on material belongings (Kahnemann et al., 2006). Wealth, and even good health, make but minor contributions to explaining differences among people in levels of happiness and life satisfaction (Diener, 2005; Diener & Seligman, 2004; Smith et al., 2005). Above about $50,000 in annual income, increasing wealth does not buy much more happiness. As Harvard University psychologist Daniel Gilbert puts it, “Once you get basic human needs met, a lot more money doesn’t make a lot more happiness” (cited in Futrelle, 2006). Figure 8.8 shows that happiness tends to level off at higher incomes. Even members of the vaunted Forbes 400, a listing of the nation’s wealthiest individuals, are only a tiny bit happier than the public at large (Easterbrook, 2005). Consider too that while lottery winners often get an emotional boost from their winnings, their reported happiness tends to return to their earlier levels within about a year (Corliss, 2003).

If not money, might marriage be the key to happiness? Generally speaking, married people are happier than single folks (Gallup Organization, 2005). But cause and effect may be muddled, as happier people might be more likely to get married or stay married (Stein, 2005; Wallis, 2005). This latter view is supported by evidence from a recent survey of more than 24,000 newly married people (Lucas et al., 2003). The results showed that the bounce in happiness experienced by many newlyweds tended to be short-lived.

What, then, determines happiness? Evidence points to factors such as having friends (a big plus) and religious faith (Paul, 2005; Wallis, 2005). With respect to religion, we don’t know whether it is the sense of purpose and meaning associated with religious belief, the social participation in communal aspects of religion, or a combination of factors relating to religious commitment that contributes to happiness. But perhaps the greatest contribution to happiness is our inborn genetic potential.

Investigators suspect that genetic factors account for about half of the differences among people in levels of happiness (Lykken & Csikszentmihalyi, 2001). People may have a genetically determined “set point” for happiness, a level around which their general level of happiness tends to settle, despite the ups and downs of their daily lives (Wallis, 2005). Even so, genes alone do not determine happiness or well-being. We know that whatever our genetic potential might be, our sense of well-being or life satisfaction can change, and often does change, over the course of time (Fujita & Diener, 2005). Moreover, there’s much we can do to enrich our lives and boost our personal happiness, as we’ll see next.

**Building Happiness**

Positive psychology founder Martin Seligman (2003) argues that psychologists should become guides to help people lead the good life—the happy and meaningful life. He speaks of three kinds of human happiness: (1) **pleasure** of doing things, (2) **gratification** (being absorbed and engaged in life activities), and (3) **meaning** (finding personal fulfillment in life activities). Seligman offers a number of suggestions people can use in their daily lives to increase personal happiness. Here are a few of these suggestions (adapted from Seligman, 2003; Seligman et al., 2005):

- **Gratitude visit.** Seligman believes that expressing gratitude is a key component of personal happiness. Close your eyes and visualize someone who has had a huge
positive effect on your life—someone you never really thanked. Spend time during the next week writing a testimony of thanks to this person. Then schedule a visit to the person. When you arrive, read the testimonial and discuss with that person what he or she has meant to you. Gratitude visits can be infectious in a positive way. The recipients of the visit begin to think about the people they haven’t thanked. They then make their own pilgrimage of thanks, which in turn leads to a kind of daisy chain of gratitude and contentment (Pink, 2003).

- **Three blessings.** Every night, before going to bed, think of three things that went well during the day. Write them down and reflect on them.

- **One door closes, another opens.** Think about the times in your life that a door closed because of a death or a loss. Then think of a later experience in which a door opened. Come to appreciate the ebbs and flows of your experiences.

- **Savorings.** Plan a perfect day. But be sure to share it with another person.

All in all, happiness is not so much a function of what you’ve got as what you make of it. Happiness is most likely to be found in meaningful work, investment in family and community life, and development of strong spiritual or personal values.

**The Facial-Feedback Hypothesis: Putting on a Happy Face**

Can practicing smiling lift your mood? According to the **facial-feedback hypothesis**, mimicking the facial movements associated with an emotion will induce the corresponding emotional state (Izard, 1990a). Consistent with this hypothesis, researchers have found that practicing smiling can induce more positive feelings (e.g., Soussignan, 2002). Practicing smiling several times a day may lift your spirits, at least temporarily, perhaps because it prompts you to recall pleasant experiences.

Despite these findings, the facial-feedback hypothesis has its limitations. A “put-on” smile is not the equivalent of a real one. Putting on a smile may induce more positive feelings, but it is not accompanied by the feeling of enjoyment that produces a genuine smile. In addition, the two types of smiles flex different facial muscles (Waller et al., 2006). A genuine smile is called a **Duchenne smile**, named after Guillaume Duchenne de Boulogne (1806–1875), the French physician who discovered the facial muscles used to produce a genuine smile. You can see the difference between a genuine smile and a phony one in the photographs of emotions researcher Paul Ekman in Figure 8.9.

Then there’s the most enigmatic smile of all, that of the **Mona Lisa**. Recently, computer programmers created emotion-recognition software that could analyze facial features for telltale signs of emotions. By analyzing such facial features as the curvature of the lips and the crinkles around the eyes, the researchers decoded the

**CONCEPT 8.25** Evidence supports the view that practicing or mimicking facial movements associated with particular emotions can produce corresponding emotional states.
emotions expressed in the portrait as composed of 83 percent happiness, 9 percent
disgust, 6 percent fear, and 2 percent anger. No wonder Da Vinci’s Mona Lisa has such
an enigmatic smile.

How Your Brain Does Emotions

There is no one emotional center in the brain. Rather, our emotional responses are
regulated by complex brain networks located primarily in the limbic system and cere-
bral cortex (Etkin et al., 2006; Fischer et al., 2002). You may recall from Chapter 2
that the limbic system includes the amygdala and hippocampus. The almond-shaped
amygdala can be likened to an “emotional computer” that evaluates stimuli or situ-
ations for their threat potential and triggers a fear response to stimuli perceived to
be threatening (Chen, Shemyakin, & Wiedenmayer, 2006; Huff et al., 2006). Figure
8.10 shows the activation of the amygdala in response to viewing a fearful face.

The hippocampus processes information relating to the context in which fear
responses have been experienced. For example, it links emotions to memory by
helping you remember the circumstances associated with a fearful event, such as
the bend in the road where you lost control of your car. The amygdala also plays an
important role in processing stimuli that elicit other emotional states, including
grief and despair (L. Wang et al., 2005).

The cerebral cortex—the brain’s “thinking center”—is connected to the limbic
system and plays several key roles in processing emotions. It evaluates the mean-
ing of emotionally arousing stimuli and plans and directs how to respond to them.
It determines whether we should approach a stimulus (as in the case of a loved in-
terest or a pleasurable situation) or avoid one (as in the case of a threat). It is also
responsible for processing the subjective, or felt, experience of emotions, as well as
controlling the facial expression of emotion.

We are learning that there are differences in how the right and left cerebral
hemispheres process emotions. It turns out that positive emotions, such as happi-
ness, are associated with increased activity in the prefrontal cortex of the left cere-
bral hemisphere, whereas negative emotions, such as disgust, are associated with
increased activity in the right prefrontal cortex (Davidson et al., 2002; Harmon-
Jones & Sigelman, 2001; Herrington et al., 2005). As noted in Chapter 2, the pre-
frontal cortex is the part of the frontal lobe that lies in front of the motor cortex.
We’re not sure why the hemispheres differ in this way, but studying these differ-
ences may yield important clues to the biological bases of emotional disorders like
depression.

FIGURE 8.10 Activation of Amygdala in Response to a Fearful Face

Here we see functional MRI images of the amygdala in response to viewing a fearful face.
More intense colors show greater activation in relation to a visual fixation point (control).
Slice 24 shows the forward part of the amygdala, whereas Slice 25 shows the back part.
The image is viewed as though the person were looking out from the page.

Chapter 8 Motivation and Emotion

Theories of Emotion: Which Comes First—the Thought or the Feeling?

One night while I was driving home, my car hit an icy patch in the road and went out of control. The car spun completely around twice and wound up facing oncoming traffic. At that instant, I felt the way a deer must feel when it is caught in the headlights of a car bearing down on it—terrified and helpless. Fortunately, the cars coming toward me stopped in time, and I was able to regain control of my car. I arrived home safely but still shaking in fear. At the time, I didn’t stop to consider the question pondered by many psychologists: Did my awareness of my fear precede or follow my bodily response (shaking, sweating, heart pounding)? The commonsense view of emotion is that we first perceive a stimulus (the car spinning out of control), then feel the emotion (fear), then become physiologically aroused (heart pounding), and then take action (grip the steering wheel). Yet one of the more enduring debates in psychology concerns which comes first—the subjective experience of the emotion or the physiological or behavioral response.

James-Lange Theory

William James (1890/1970) argued that bodily reactions or sensations precede emotions. Because Carl Georg Lange, a Danish physiologist, postulated similar ideas independently, this view is called the James-Lange theory. James used the now-classic example of confronting a bear in the woods. James asked the question, “Do we run from the bear because we are afraid, or do we become afraid because we run?” He answered this question by proposing that the response of running comes first. We see the bear. We run. Then we become afraid. We become afraid because we sense the particular pattern of bodily arousal associated with running, such as a pounding heart, rapid breathing, and muscular contractions. Thus, emotions follow bodily reactions. In this view, we experience fear because we tremble; we experience the emotion of sadness because we cry. If this theory is correct, then my body’s reaction would have reacted first when my car spun out of control. Only when I sensed my body’s reaction would I have become consciously aware of fear.

James argued that distinct bodily changes are associated with each emotion. This is why fear feels different from other emotions, such as anger or love.

Cannon-Bard Theory

In the 1920s, physiologist Walter Cannon (1927) proposed a second major theory of emotions. He based his theory on research conducted by his laboratory assistant, Philip Bard. This theory, called the Cannon-Bard theory, challenged the James-Lange theory. It holds that the same bodily changes that result from the activation of the sympathetic nervous system accompany different emotions. Sympathetic activation makes our hearts race, our breathing quicken, and our muscles contract whether we are experiencing anger, fear, or sexual arousal. How could these common responses in the body evoke different emotions, as the James-Lange theory suggests? The Cannon-Bard theory proposes that the subjective experience of an emotion and the bodily reactions associated with it occur virtually simultaneously. In other words, our emotions accompany our bodily responses but are not caused by them. In simplest terms, the Cannon-Bard theory postulates that we see the bear, we experience fear and a pounding heart, and then we run.

Two-Factor Model

By the 1960s, a new theory of emotions was drawing attention. This theory, called the two-factor model, held that emotions depend on two factors: (1) a state of general arousal and (2) a cognitive interpretation, or labeling (Schachter, 1971; Schachter...
According to this model, when we experience bodily arousal, we look for cues in the environment to explain why we feel aroused or excited. Your heart may race when you see a monster jump onto the movie screen in the latest horror movie; it may also race when your car spins out of control. Your arousal in the safe confines of the movie theater is likely to be labeled and experienced as “pleasurable excitement.” But the same pattern of arousal experienced in the spinning car will probably be labeled and experienced as “sheer terror.”

The two-factor model continues to generate interest, but it fails to account for the distinctive physiological features associated with different emotions. Anger may feel different from fear not merely because of how we label our arousal but also because it is associated with different bodily responses.

Experimental evidence also casts doubt on whether we must label the state of arousal in order to experience an emotion. Psychologist Robert Zajonc (1980, 1984) exposed subjects to brief presentations of Japanese ideographs (written symbols). Later, he found that subjects preferred particular characters they had seen, even if they had no recall of ever having seen these stimuli. Zajonc believes that some emotional responses, such as liking and disliking, may not involve any cognitive appraisal—that they may occur through mere exposure to a stimulus.

**Dual-Pathway Model of Fear**

According to the dual-pathway model of fear formulated by psychologist Joseph LeDoux (2000, 2003), the brain uses two pathways to process fear messages. An environmental stimulus (“seeing a car barreling down on you”) is first processed by the thalamus. From there the information branches off, with one pathway (the “high road”) leading to the cerebral cortex, where it can be processed more carefully. Another pathway (the “low road”) leads directly to the amygdala in but a few thousands of a second, allowing for a more immediate response to danger cues than if the signal had first passed through the cortex (Winerman, 2005) (see Figure 8.11). The “low road” thus allows a faster response to danger cues.

Suppose you are walking in the woods and see a curved object in the bush. This visual image is first processed by the thalamus, which makes a rough appraisal of the object as potentially dangerous (possibly a snake). The thalamus transmits this information directly to the amygdala via the “low road,” which prompts an immediate bodily response. Heart rate and blood pressure jump, and muscles throughout the body contract as the body prepares to respond quickly to a possible threat. The cortex, slower to respond, processes the information further (“No, that’s not a snake. It’s just a stick.”). From the standpoint of survival, it is better to act quickly on the assumption that the suspicious object is a snake and to ask questions later. Responding without thinking can be a lifesaver. As LeDoux puts it, “The time saved by the amygdala in acting on the thalamic information, rather than waiting for the cortical input, may be the difference between life and death. It is better to have treated a stick as a snake than not to have responded to a possible snake” (1994, p. 270). Whether the cortex interprets the object as a “snake” or a “stick” determines whether a fear response continues or is quickly quelled. The cortex is also responsible for producing the subjective or felt experience of fear.

**What Does All This Mean?**

Where do these various theories of emotions, as represented in Figure 8.12, leave us? The James-Lange theory implies that distinctive bodily responses are associated with each emotion, whereas the Cannon-Bard theory postulates that a similar pattern of bodily responses accompanies different emotions. Both views may be at least partially correct. There certainly are common physiological responses associated with such emotions as fear, anger, and love, as the Cannon-Bard theory proposes. We feel our hearts beating faster when we are in the presence of a new love and when
we are faced with an intruder in the night. Yet, as the James-Lange theory proposes, there are also distinctive bodily reactions associated with different emotions. Less blood flows to our extremities during states of fear than of anger, which is why we may experience a sensation of “cold feet” when we are afraid but not when we are angry (Levenson, 1994). Anger is accompanied by a dramatic rise in skin temperature, which may explain why people who are angry are often described as “hot under the collar.”

Different emotions are also connected with different facial expressions. Blushing, for instance, is a primary characteristic of embarrassment. James considered facial expressions to be among the bodily responses that distinguish one emotion from another. Evidence favoring the facial-feedback hypothesis lends at least par-
LeDoux’s Dual-Pathway Model
1. See deer
2. Sensory (visual) information processed by thalamic-amygdala (“low road”) pathway, allowing for quick emotional response (heart pounding, trembling, muscles tightening)
3. Sensory information passes through “high road” leading to sensory cortex for further processing (“My God, watch out.”)

James-Lange Theory
1. See deer
2. Heart pounds and hands tremble
3. Experience fear

Cannon-Bard Theory
1. See deer
2. Experience heart pounding, hands trembling, and emotion of fear simultaneously

Two-Factor Model
1. See deer
2. Factor One (physiological arousal): Heart pounds and hands tremble
3. Factor Two (cognitive labeling of arousal): “I must really be terrified.”

Emotions may precede cognitions under some conditions, as suggested by Zajonc’s studies and by the dual-pathway model proposed by LeDoux. That emotions may occur before cognitions does not dismiss the important role that cognitions play in emotions. Whether you are angered when an instructor springs an unexpected assignment on you or frightened when a doctor points to a spot on your X-ray depends on the appraisal of the situation made in the cerebral cortex, not on automatic processing of stimuli by lower brain structures.

How we appraise events also depends on what the events mean to us personally (Lazarus, 1995). The same event, such as a pregnancy or a change of jobs, can lead to feelings of joy, fear, or even anger depending on the meaning the event has for the individual and its perceived importance. The Try This Out feature offers an exercise in tracking your emotions.

The final chapter in the debate about how emotions are processed in the brain is still to be written. Yet the belief that distinctive bodily changes are associated with different emotions has had at least one practical implication. It is the basis of a method of lie detection, which is discussed later in this module.

Try This Out
Tracking Your Emotions
Keep track of your emotions for a day or two by using a notebook to record situations in which you experience emotion. Include brief descriptions of your emotional state (joy, fear, anger, etc.), your bodily reactions (e.g., rapid heartbeat, rapid breathing, sweating, tingling sensation, jumpiness, shakiness), and the thoughts that passed through your mind at the time. Afterward, examine the relationships among your emotions, your bodily reactions, and your thought patterns. Compare your bodily reactions in different emotional states. Also compare the thoughts you had while in different emotional states. What does this exercise teach you about the connections between your emotional states and your bodily reactions and thought patterns?
Chapter 8  Motivation and Emotion

Emotional Intelligence: How Well Do You Manage Your Emotions?

Some theorists believe that a person’s ability to recognize and manage emotions represents a form of intelligent behavior, called emotional intelligence, or EI (Grewal & Salovey, 2005). Emotional intelligence is difficult to define precisely, but it can be generally described in terms of five main characteristics:

1. **Knowing your emotions.** Self-awareness, or knowing your true feelings, is a core feature of emotional intelligence.

2. **Managing your emotions.** Emotionally intelligent people are able to handle their emotions in appropriate ways. They can soothe themselves in difficult times, and they bounce back quickly from disappointments and setbacks.

3. **Motivating yourself.** People with a high level of emotional intelligence can marshal their emotions to pursue their goals. They approach challenges with enthusiasm, zeal, and confidence, which makes them better equipped to attain high levels of achievement and productivity. They also are able to delay gratification and constrain their impulses as they pursue long-term goals.

4. **Recognizing emotions in others.** Empathy, the ability to perceive emotions in others, is an important “people skill.” It not only helps build strong relationships but also contributes to success in teaching, sales, management, and the helping professions.

5. **Helping others handle their emotions.** The ability to help others deal with their feelings is an important factor in maintaining meaningful relationships.

Emotional intelligence may be a more important contributor to success in life than IQ. Perhaps you know people who are intellectually brilliant but have no clue about their own or other people’s emotions. Research on emotional intelligence shows that it is also linked to such positive outcomes as emotional well-being and life satisfaction, happier marriages, and even higher GPAs in college (Gannon & Ranzijn, 2005; Gignac, 2006; Parker, Austin, et al., 2005; Parker, Duffy, et al., 2005; Spence, Oades, & Caputi, 2004). However, more research is needed before we can determine whether EI improves prediction of success in life beyond that which we can predict using measures of general intelligence and personality.

The Polygraph: Does it Work?

Let us end this module by commenting on the use of the polygraph, a device used to detect lying by comparing a person’s responses to control (neutral) and test ques-
tions. It is based on the assumption that when people lie, they reveal telltale signs in their breathing, heart rates, and electrical reactivity of the skin as the result of sweating. The polygraph measures patterns of bodily arousal, not lying per se. Many leading scientists, along with distinguished scientific groups such as the National Academy of Sciences, say the polygraph cannot accurately distinguish lying from the emotional reactions of honest people put in pressure situations (e.g., Kluger & Masters, 2006). Another problem is that many seasoned liars can lie without any telltale physiological reactions. Unfortunately, the false findings of polygraphs have damaged the lives of many innocent people. Though the polygraph may occasionally catch a person in a lie, it is not reliable enough to pass scientific muster. More sophisticated methods of detecting lying are in the experimental stage, including the use of brain scans and measurement of minute facial movements.

Concept Chart 8.4 provides an overview of the major concepts of emotion discussed in this module.

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**CONCEPT CHART 8.4**  
**Major Concepts of Emotion**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial expressions of emotion</td>
<td>Evidence from cross-cultural studies supports universal recognition of the facial expressions of six basic emotions: anger, fear, disgust, sadness, happiness, and surprise.</td>
</tr>
<tr>
<td>Facial-feedback hypothesis</td>
<td>According to this hypothesis, mimicking facial movements associated with an emotion can produce the corresponding emotional state.</td>
</tr>
<tr>
<td>Physiological bases of emotions</td>
<td>Emotions are accompanied by activation of the sympathetic branch of the autonomic nervous system. Emotions are processed by the structures of the limbic system (the amygdala, hippocampus, and parts of the hypothalamus) and by the cerebral cortex.</td>
</tr>
<tr>
<td>James-Lange theory of emotions</td>
<td>Emotions follow our bodily reactions to triggering stimuli—we become afraid because we run; we feel sad because we cry.</td>
</tr>
<tr>
<td>Cannon-Bard theory of emotions</td>
<td>Emotions accompany bodily responses to triggering stimuli but are not caused by them.</td>
</tr>
<tr>
<td>Two-factor model of emotions</td>
<td>The combination of physiological arousal and cognitive appraisal (labeling) of the source of the arousal produces the emotional state.</td>
</tr>
<tr>
<td>LeDoux’s dual-pathway model of fear</td>
<td>One pathway leads from the thalamus to the amygdala, which produces the initial fear response (bodily arousal), while a second pathway leads to the cortex, which further processes the fear stimulus and produces the conscious awareness of fear.</td>
</tr>
<tr>
<td>Emotional intelligence</td>
<td>According to this concept, the ability to manage emotions effectively is a form of intelligent behavior.</td>
</tr>
<tr>
<td>Polygraph</td>
<td>A device used to detect lying based on analysis of differences in physiological responses to control questions and test questions.</td>
</tr>
</tbody>
</table>
Module 8.4 Review

Emotions

RECITE IT

What are the three components of emotions?
- Psychologists conceptualize emotions as having a physiological component (heightened bodily arousal), a cognitive component (a feeling state, as well as thoughts and judgments about experiences linked to the feeling state), and a behavioral component (approach or avoidance behaviors).

Are facial expressions of emotion universal?
- Evidence from cross-cultural studies supports the view that facial expressions of six basic emotions—anger, fear, disgust, sadness, happiness, and surprise—are universal.
- Cultural differences, as well as some similarities, exist in how emotions are experienced. Each culture has rules, called display rules, that determine how emotions are expressed and how much emotion is appropriate to express. Gender differences in emotional expression may reflect cultural expectations.

Does money buy happiness?
- Apparently not, as there is but a modest relationship between wealth and personal happiness or life satisfaction. Happiness may vary around a genetically influenced set point. Still, there is much we can do to make our lives happier and more fulfilling.

What role do brain structures play in emotions?
- Parts of the limbic system, including the amygdala and the hippocampus, play key roles in emotional processing.
- The cerebral cortex interprets stimuli and plans strategies for either approaching or avoiding stimuli, depending on whether they are perceived as “friend” or “foe.” The cortex also controls facial expression of emotions and is responsible for processing the felt experience of emotions.

What are the major theories of emotions?
- The major theories of emotions are the James-Lange theory (emotions occur after people become aware of their physiological responses to the triggering stimuli), the Cannon-Bard theory (emotional and physiological reactions to triggering stimuli occur almost simultaneously), the two-factor model (emotions depend on an arousal state and a labeling of the causes of the arousal), and LeDoux’s dual-pathway model of fear (the amygdala responds to fear stimuli before the cerebral cortex gets involved).

What is emotional intelligence?
- Emotional intelligence refers to the ability to recognize emotions in oneself and others and to manage emotions effectively. Emotional intelligence may have an important bearing on our success in life and ability to maintain intimate relationships.

What is the polygraph?
- The polygraph is a device used to detect physiological response patterns believed to indicate when a person is lying. However, we lack compelling scientific evidence that the polygraph can reliably detect lying.

RECALL IT

1. All of the following are basic components of emotion except
   a. bodily arousal.
   b. production of neuropeptide Y.
   c. cognition.
   d. expressed behavior.

2. Facial expressions of six basic emotions are recognized universally. What are these six emotions?
   a. James-Lange theory.
   b. Cannon-Bard theory.
   c. two-factor model.
   d. dual-pathway model of fear.

3. The belief that the subjective experience of an emotion and the bodily response that accompanies it occur at virtually the same time is the
   a. James-Lange theory.
   b. Cannon-Bard theory.
   c. two-factor model.
   d. dual-pathway model of fear.

4. Which of the following statements is not correct?
   a. Women are generally better able than men to express emotions in words.
   b. Women are generally better able than men to express emotions through facial expressions.
   c. In many cultures, men are given greater latitude in displaying anger.
   d. Evidence shows that men tend to smile more often than women.

THINK ABOUT IT

- How is emotional intelligence different from general intelligence? In what ways might it become more important for success in life than general intelligence?
Managing Anger

Do you know people who have problems controlling their temper? Do you yourself do things in anger that you later regret? Anger can be a catalyst for physical or verbal aggression. But even if you never express your anger through aggression, frequent episodes of anger can take a toll on your health, putting you at increased risk of developing coronary heart disease (see Chapter 13). Anger floods the body with stress hormones that may eventually damage your heart and arteries.

Cognitive theorists recognize that anger is prompted by a person’s reactions to frustrating or provocative situations, not by the situations themselves. Though people often blame the “other guy” for making them angry, people make themselves angry by thinking angering thoughts or making anger-inducing statements to themselves. To gain better control over their anger, people need to identify and correct such thoughts and statements. By doing so, they can learn to avoid hostile confrontations and perhaps save wear and tear on their cardiovascular systems. Here are some suggestions psychologists offer for identifying and controlling anger:

- **Become aware of your emotional reactions in anger-provoking situations.** When you notice yourself getting “hot under the collar,” take this as a cue to calm yourself down and think through the situation. Learn to replace anger-arousing thoughts with calming alternatives.

- **Review the evidence.** Might you be overreacting to the situation by taking it too personally? Might you be jumping to the conclusion that the other person means you ill? Are there other ways of viewing the person’s behavior?

- **Practice more adaptive thinking.** For example, say to yourself, “I can handle this situation without getting upset. I’ll just calm down and think through what I want to say.”

- **Practice competing responses.** You can disrupt an angry response by conjuring up soothing mental images, by taking a walk, or by practicing self-relaxation. The time-honored practice of counting to ten when you begin to feel angry may also help defuse an emotional response. If it doesn’t, you can follow Mark Twain’s advice and count to a hundred instead. While counting, try to think calming thoughts.

- **Don’t get steamed.** Others may do dumb or hurtful things, but you make yourself angry by dwelling on them. Take charge of your emotional responses by not allowing yourself to get steamed.

- **Oppose anger with empathy.** Try to understand what the other person is feeling. Rather than saying to yourself, “He’s a miserable so-and-so who deserves to be punished,” say, “He must really have difficulties at home to act like this. But that’s his problem. I won’t take it personally.”

**Anger and Aggression** Anger is frequently the catalyst for physical or verbal aggression.
• Congratulate yourself for responding assertively rather than aggressively. Give yourself a mental pat on the back when you handle stressful situations with equanimity rather than with anger.

• Scale back your expectations of others. Perceptions of unfairness may result from the expectation that others “should” or “must” fulfill your needs or expectations. By scaling back your expectations, you’re less likely to get angry with others when they disappoint you.

• Modulate verbal responses. Avoid raising your voice or cursing. Stay cool, even when others do not.

• Learn to express positive feelings. Expressing positive feelings can help diffuse negative emotions. Tell others you love them and care about them. They are likely to reciprocate in kind.

Think about situations in which you have felt angry or have acted in anger. How might you handle these situations differently in the future? What coping responses can you use to help you keep your cool? Table 8.3 offers some calming alternatives to thoughts that trigger anger.

**TABLE 8.3 Anger Management: Replacing Anger-Inducing Thoughts with Calming Alternatives**

<table>
<thead>
<tr>
<th>Situation</th>
<th>Anger-Inducing Thoughts</th>
<th>Calming Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>A provocateur says, “So what are you going to do about it?”</td>
<td>“That jerk. Who does he think he is? I’ll teach him a lesson he won’t forget!”</td>
<td>“He must really have a problem to act the way he does. But that’s his problem. I don’t have to respond at his level.”</td>
</tr>
<tr>
<td>You get caught in a monster traffic jam.</td>
<td>“Why does this always happen to me? I can’t stand this.”</td>
<td>“This may be inconvenient, but it’s not the end of the world. Don’t blow it out of proportion. Everyone gets caught in traffic every now and then. Just relax and listen to some music.”</td>
</tr>
<tr>
<td>You’re in a checkout line at the supermarket, and the woman in front of you is cashing a check. It seems as if it’s taking hours.</td>
<td>“She has some nerve holding up the line. It’s so unfair for someone to make other people wait. I’d like to tell her off!”</td>
<td>“It will take only a few minutes. People have a right to cash their checks in the market. Just relax and read a magazine while you wait.”</td>
</tr>
<tr>
<td>You’re looking for a parking spot when suddenly another car cuts you off and seizes a vacant space.</td>
<td>“No one should be allowed to treat me like this. I’d like to punch him out!”</td>
<td>“Don’t expect people always to be considerate of your interests. Stop personalizing things.” Or “Relax, there’s no sense going to war over this.”</td>
</tr>
<tr>
<td>Your spouse or partner comes home several hours later than expected, without calling to let you know he or she would be late.</td>
<td>“It’s so unfair. I can’t let him (her) treat me like this.”</td>
<td>Explain how you feel without putting your spouse or partner down.</td>
</tr>
<tr>
<td>You’re watching a movie in a theater, and the people sitting next to you are talking and making a lot of noise.</td>
<td>“Don’t they have any regard for others? I’m so angry with these people I could tear their heads off.”</td>
<td>“Even if they’re inconsiderate, it doesn’t mean I have to get angry about it or ruin my enjoyment of the movie. If they don’t quiet down when I ask them, I’ll just change my seat or call the manager.”</td>
</tr>
</tbody>
</table>

Source: Adapted from Nevid, Rathus, & Greene, 2006.
Motivation and emotion are processes that move us to action. Motives are the “whys” of behavior—the factors that drive goal-directed behavior and explain why we do what we do (Module 8.1). Hunger is a major source of motivation—a drive that motivates us to seek nourishment to satisfy a basic biological need for food (Module 8.2). The desire for sexual gratification is another biologically based drive. But our sexual behavior is governed more by our learning experiences, culture, and personal values than by biological demands (Module 8.3). Emotions are complex feeling states, but, like motives, they also have a behavioral component—tendencies to approach or avoid particular objects or situations (Module 8.4). Anger is a negative emotion that can cause serious health problems. People can gain better control over their anger by identifying and correcting anger-inducing thoughts (Module 8.5).

**Key Terms**

- motivation (p. 262)
- motives (p. 262)
- instinctive behaviors (p. 262)
- instinct theory (p. 262)
- drive theory (p. 263)
- need (p. 263)
- drive (p. 263)
- drive reduction (p. 263)
- primary drives (p. 263)
- secondary drives (p. 263)
- stimulus motives (p. 264)
- arousal theory (p. 264)
- incentive theory (p. 264)
- incentives (p. 264)
- incentive value (p. 265)
- psychosocial needs (p. 266)
- need for achievement (p. 266)
- extrinsic motivation (p. 266)
- intrinsic motivation (p. 266)
- achievement motivation (p. 266)
- avoidance motivation (p. 266)
- hierarchy of needs (p. 266)
- self-actualization (p. 267)
- lateral hypothalamus (p. 270)
- ventromedial hypothalamus (p. 270)
- set point theory (p. 271)
- gender identity (p. 277)
- sexual orientation (p. 277)
- gender roles (p. 277)
- sexual response cycle (p. 278)
- vasocongestion (p. 278)
- sexual dysfunctions (p. 281)
- performance anxiety (p. 281)
- emotions (p. 283)
- display rules (p. 285)
- facial-feedback hypothesis (p. 288)
- Duchenne smile (p. 288)
- James-Lange theory (p. 290)
- Cannon-Bard theory (p. 290)
- two-factor model (p. 290)
- dual-pathway model of fear (p. 291)
- emotional intelligence (p. 294)

**Answers to Recall It Questions**

**Module 8.1:** 1. motivation; 2. i-d, ii-a, iii-c, iv-b; 3. stimulus motives; 4. incentive value; 5. d.  
**Module 8.2:** 1. c; 2. c; 3. i-b, ii-d, iii-a, iv-c; 4. serotonin.  
**Module 8.3:** 1. gender identity; 2. (a) iii, (b) iv, (c) ii, (d)i; 3. b; 4. premature ejaculation.  
**Module 8.4:** 1. b; 2. anger, fear, disgust, sadness, happiness, and surprise; 3. b; 4. d.