Aron Ralston
Chapter Overview

- Motivational concepts
- Hunger
- The need to belong
- Emotion: Arousal, behavior, and cognition
- Embodied emotion
- Expressed and experienced emotions
Motivational Concepts

- Drives and incentives
- Arousal theory
- A hierarchy of needs
Motivation

- Need or desire that energizes and directs behavior
- Arises from the interplay between nature and nurture
- Perspectives used to understand motivated behaviors include:
  - Drive-reduction theory
  - Arousal theory
  - Maslow’s hierarchy of needs
The Drive-Reduction Theory

- The idea that a physiological need creates an aroused state that motivates an individual to satisfy the need

- Assumptions:
  - Individuals have **physiological needs**.
  - If a need is not met, it creates a drive.
  - Drives push individuals to reduce the need.
  - Strong drives result from both a need and an incentive.
Drive-Reduction Theory

- Motivation for drive-reduction arises from **homeostasis**.
- Thus, if we are water deprived, our thirst drives us to drink and to restore the body’s normal state.
Arousal Theory

- Describes the search for the right arousal level that energizes and directs behavior
- Aroused individuals are either physically energized or tense.
  - Some motivated behaviors increase, rather than decrease, arousal.
- Curiosity drives human beings and animals.
Yerkes-Dodson Law

- Moderate arousal leads to optimal performance.
- Optimal arousal levels depend on the task.
  - Difficult tasks require lower arousal to provide the best performance.
Figure 9.2 - Optimal Arousal Varies with Difficulty of the Task Being Performed
Performance peaks at lower levels of arousal for difficult tasks and at higher levels for easy or well-learned tasks.

(1) How might this phenomenon affect runners?

(2) How might this phenomenon affect anxious test-takers facing a difficult exam?

(3) How might the performance of anxious students be affected by relaxation training?
A Hierarchy of Needs

- Abraham Maslow viewed human motives as a pyramid.
  - Physiological needs lie at the base.
  - Highest human needs occupy the peak.
Figure 9.3

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### Table 9.1 - Classic Motivation Theories

<table>
<thead>
<tr>
<th>Theory</th>
<th>Its Big Idea</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drive-reduction theory</strong></td>
<td>Physiological needs (such as hunger and thirst) create an aroused state that drives us to reduce the need (for example, by eating or drinking).</td>
</tr>
<tr>
<td><strong>Arousal theory</strong></td>
<td>Our need to maintain an optimal level of arousal motivates behaviors that meet no physiological need (such as our yearning for stimulation and our hunger for information).</td>
</tr>
<tr>
<td><strong>Maslow’s hierarchy of needs</strong></td>
<td>We prioritize survival-based needs and then social needs more than the needs for esteem and meaning.</td>
</tr>
</tbody>
</table>
After hours of driving alone in an unfamiliar city, you finally see a diner. Although it looks deserted and a little creepy, you stop because you are really hungry and thirsty.

How would Maslow’s hierarchy of needs explain your behavior?
The physiology of hunger
The psychology of hunger
Obesity and weight control
Monitoring Stomach Contractions

- Walter Cannon and A.L. Washburn
  - Washburn agreed to swallow a balloon that was attached to a recording device.
  - When inflated, the balloon tracked stomach contractions and helped supply information about feelings related to hunger.
Washburn swallows balloon, which measures stomach contractions.

Washburn presses key each time he feels hungry.

Figure 9.4

Myers/DeWall, *Psychology in Everyday Life*, 4e, © 2017 Worth Publishers
Scientists used to believe that hunger signals emanated solely from the stomach.

We now know that this is far too simplistic view of hunger. Although the stomach does play some role in our feelings of hunger (a stomach that is 60% empty will produce hunger pangs), so do other mechanisms.

In fact even with the stomach removed, a person will continue to feel hunger.
The hypothalamus of the brain seems to play a crucial role in regulating our eating behavior.

A region of the hypothalamus, the ventromedial hypothalamus (VMH) seems to function as a safety center, or an off switch, for hunger. Rats with VMH lesions will overeat and become grossly obese.
Rat on left had lesions in VMH
Another region of the hypothalamus, the lateral hypothalamus (LH), functions as a hunger center or an on switch, for eating behavior.

Rats with LH lesions will become terminally anorexic.
The hypothalamus may regulate hunger, but how does the body signal to the hypothalamus our need for food?

One theory, the glucostatic hypothesis, maintains that our body constantly monitors the levels of glucose in the blood stream. When glucose levels drop, the body signals to the hypothalamus that we need to eat. When levels become too high, hunger is then shut off.
But the glucostatic hypothesis cannot explain all eating behaviors. Another theory of hunger regulation is the lipostatic hypothesis.

The lipostatic hypothesis holds that our bodies monitor the levels of fats or lipids in the bloodstream and signal hunger when these fat levels drop below a certain point.
Similarly, when fat levels are too high in the body, hunger is turned off.

Recent research has indicated that a hormone called leptin may be involved in food-seeking behavior, and obesity may be related to a lack of regulation of hunger by this hormone.
The lipostatic hypothesis is also the basis for set-point theory, a theory that maintains the existence of a set-point or natural weight level for each individual.

The set-point is thought to be determined at birth or shortly afterward by the number of fat cells individual has.
The set-point theory paints a discouraging picture for dieters.

According to this view, when one loses weight, the body attempts to regain the lost back by lowering metabolism and increasing hunger.
Set-point theory is certainly consistent with the statistics which show that 90% of those who lose weight regain it, but recent findings also indicate that diet combined with exercise can make permanent weight loss more attainable.
“Never hunt when you’re hungry.”

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Schachter conducted a number of studies on obesity at Columbia University. He found that obese people tend to eat, not because they are hungry, but because they are exposed to stimuli such as seeing something tempting to eat or because the clock says it is time to eat.
“Remember when we used to have to fatten the kids up first?”

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To be considered obese, one must be 20% above what is considered to be a normal weight for his or her height. In the United States, approximately 24% of men and 27% of women fit this definition for obesity, and the diet industry has become a massive undertaking as our culture has become obsessed with thinness. What do we know about the causes of obesity?
Restrained eating or dieting seems to make people more susceptible to binge eating.

Studies have shown that when restrained eaters are made anxious and then presented with food, they tend to eat much more than do unrestrained eaters who also have been made anxious.
Other cues that also have the power to make dieters slip off the wagon are alcohol, depression, stress, and the presence of high calorie foods.

Other factors also contribute to obesity. People tend to eat more when exposed to a wide variety of foods and when eating in the presence of others.
Recently, it has been suggested that fluctuations in weight may be more damaging to health than simply leaving one's weight alone.
Cultural factors in the perception of obesity and conceptions of the ideal human body vary from culture to culture as well as across historical context. In some Pacific island cultures, it is common to see people who weigh over 300 pounds. In contemporary America, our ideal body is much, much thinner.
Throughout the history of Western cultures, the ideal female body in particular has changed rather dramatically. If one looks at paintings from the European Masters, the female form presented in those works is much heavier than what is considered to be beautiful today.
Some have attributed the current Western fixation on thinness to the predominant use of ultrathin models in many media depictions of the female body.
Unlike the obese, some people are underweight. Some are that way because of a rapid metabolism, but others are underweight due to anorexia nervosa, a condition in which people severely limit their caloric intake and often increase their exercise.
To be diagnosed with anorexia, one must be 85% of his or her normal weight and still be concerned about being too fat.

Most anorexics are young women between the ages of 15 and 30 who come from Western industrialized countries.
One explanation of the higher incidence of anorexia in Western cultures is the emphasis on slimness that is found in these cultures.

Other explanations of this disorder center on physiological factors and familial relationships as possible causes.

Treatment of anorexia ranges from psychotherapy to drug therapy and hospitalization.
Bulimia is even more common than anorexia. Bulimia is characterized by binging and purging cycles during which the participant will consume mass quantities of food and then purge the food through vomiting or laxative abuse.
Bulimia is primarily a disease of adolescent women, and it may reflect on these women's desire to eat without restraint while at the same time remaining sexually attractive in a society that emphasizes slimness.

Interestingly, bulimia is more common in males than anorexia is. Like anorexia, bulimia is treated with psychotherapy and, if necessary, appropriate drugs.
Monitoring Stomach Contractions

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  - Washburn agreed to swallow a balloon that was attached to a recording device.
  - When inflated, the balloon tracked stomach contractions and helped supply information about feelings related to hunger.
Figure 9.4

Washburn swallows balloon, which measures stomach contractions.

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Figure 9.4
Myers/DeWall, Psychology in Everyday Life, 4e, © 2017 Worth Publishers
Physiology of Hunger: Body Chemistry and the Brain

- **Glucose**: A form of sugar that circulates in the blood
  - Major source of energy for body tissues
  - Triggers feeling of hunger when levels are low
- Hypothalamus and other brain structures
  - Arcuate nucleus - Contains appetite-stimulating and appetite-suppressing hormones
  - Blood vessels monitor appetite hormone levels.
The Hypothalamus

- Performs various body maintenance functions
  - One of these functions is control of hunger.
Figure 9.7 - The Appetite Hormones
# The Appetite Hormones: Ghrelin, Insulin, and Leptin

<table>
<thead>
<tr>
<th>Hormone</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Ghrelin</td>
<td>- Hormone secreted by an empty stomach</td>
</tr>
<tr>
<td></td>
<td>- Sends “I’m hungry” signals to the brain</td>
</tr>
<tr>
<td>Insulin</td>
<td>- Hormone secreted by the pancreas</td>
</tr>
<tr>
<td></td>
<td>- Controls blood glucose</td>
</tr>
<tr>
<td>Leptin</td>
<td>- Protein hormone secreted by fat cells</td>
</tr>
<tr>
<td></td>
<td>- When abundant, causes the brain to increase metabolism and decrease hunger</td>
</tr>
</tbody>
</table>
The Appetite Hormones: Orexin and PYY

**Orexin**
- Hunger-triggering hormone secreted by the hypothalamus

**PYY**
- Digestive tract hormone
- Sends “I’m not hungry” signals to the brain
Set Point and Basal Metabolic Rate

- **Set point**: Point at which an individual’s weight thermostat may be set
  - When the body falls below this weight, increased hunger and lowered metabolic rate may combine to restore lost weight.

- **Basal metabolic rate**: Body’s resting rate of energy output
  - Humans differ in basal metabolic rate, but our rate drops in response to decreased food intake.
Hunger occurs in response to _____ (low/high) blood glucose and _____ (low/high) levels of ghrelin.
Taste Preferences: Biology and Culture

- Body cues and the environment influence one’s taste preferences and feelings of hunger.
- Preferences for sweet and salty tastes are genetic and universal.
  - Other preferences are learned.
- Acceptability of foods is:
  - Culturally influenced
  - Based on adaptive taste preferences
Figure 9.8 - Hot Cultures Like Hot Spices

The hotter the climate, the more spices used.

Spices per recipe vs. Mean annual temperature (degrees Celsius).

Figure 9.8
Myers/DeWall, Psychology in Everyday Life, 4e,
© 2017 Worth Publishers
Tempting Situations

Friends and food
- Presence of others amplify natural behavior tendencies

Serving size is significant
- Quantity of consumed food is influenced by size of serving and dinnerware

Selections stimulate
- Food variety promotes eating

Nudging nutrition
- Strategic placement of food to enable a preference for healthier foods
After an 8-hour hike without food, your long-awaited favorite dish is placed in front of you, and your mouth waters in anticipation. Why?
Obesity and Weight Control

- Obesity has physical and social risks.
  - Obese 6- to 9-year olds are 60 percent more likely to suffer bullying.
- Adult obesity is linked with:
  - Lower psychological well-being
  - Increased depression
  - Employment discrimination
Survival Value—and Health Risks—of Fat

- Hunger-driven desire for energy-rich fat or sugar has evolutionary roots.
- Health risks include:
  - Shortened life span
  - Reduced quality of life
  - Increased health care costs
  - Increased risk of physical ailments such as diabetes
  - Higher risk for late-life cognitive decline in women
Factors Influencing Obesity

- Fat has a low metabolic rate.
  - The body adapts to its perception of starvation by burning fewer calories.
  - The rate of resting metabolism is different for lean and overweight individuals.
- Genes influence weight.
  - The weight of adoptive children closely resembles that of their biological family.
  - Identical twins have closely similar weights, even when raised apart.
Obesity: Environmental Risk Factors

- Sleep loss
- Social influence
- Changing food consumption levels
- Changing activity levels
Figure 9.9 - Past and Projected Overweight Rates, by the Organisation for Economic Co-Operation and Development
People struggling with obesity should seek medical evaluation and guidance. For others who wish to lose weight, researchers have offered these tips:

- **Begin only if you feel motivated and self-disciplined.** Permanent weight loss usually requires a lifelong change in eating habits combined with increased exercise.

- **Exercise and get enough sleep.** Especially when supported by 7 to 8 hours of sleep a night, exercise empties fat cells, builds muscle, speeds up metabolism, helps lower your settling point, and reduces stress and stress-induced craving for carbohydrate-rich comfort foods (Bennett, 1995; Kolata, 1987; Thompson et al., 1982).

- **Minimize exposure to tempting food cues.** Food shop on a full stomach. Keep tempting foods out of the house, and tuck away special-occasion foods.

- **Limit variety and eat healthy foods.** Given more variety, people consume more. So eat simple meals with vegetables, fruits, and whole grains. Healthy fats, such as those found in olive oil and fish, help regulate appetite (Taubes, 2001, 2002). Water- and vitamin-rich veggies can fill the stomach with few calories. Better crispy greens than Krispy Kremes.

- **Reduce portion sizes.** Serve food with smaller bowls, plates, and utensils.

- **Don’t starve all day and eat one big meal at night.** This common eating pattern slows metabolism. Moreover, those who eat a balanced breakfast are, by late morning, more alert and less fatigued (Spring et al., 1992).

- **Beware of the binge.** Drinking alcohol or feeling anxious or depressed can unleash the urge to eat (Herman & Polivy, 1980). And men especially should note that eating slowly can lead to eating less (Martin et al., 2007).

- **Before eating with others, decide how much you want to eat.** Eating with friends can distract us from monitoring our own eating (Ward & Mann, 2000).

- **Remember, most people occasionally lapse.** A lapse need not become a full collapse.

- **Connect to a support group.** Join with others, either face-to-face or online, to share goals and progress updates (Freedman, 2011).
American Idle

- Couch potatoes beware—TV watching correlates with obesity.
  - Over time, lifestyles have become less active.
  - As televisions have become flatter, people have become fatter.
Why can two people of the same height, age, and activity level maintain the same weight, even if one of them eats much less than the other does?
The Need to Belong

- The benefits of belonging
- The pain of being shut out
- Connecting and social networking
Benefits of Belonging

- Social bonds and cooperation support survival.
- Group membership is a worldwide phenomenon.
  - Helps enhance self-esteem, which is a measure of how valued and accepted an individual feels
- A deep sense of well-being results from the satisfaction of the need for relatedness in balance with:
  - Autonomy
  - Competence
Effects of Dissolving Social Ties

- When an event or an individual threatens to dissolve social ties, people experience:
  - Anxiety
  - Loneliness
  - Jealousy
  - Guilt
The Need to Connect

- Six days a week, thousands of women from the Philippines work as domestic helpers in Hong Kong households.
  - On Sundays, they throng to the central business district to picnic, dance, sing, talk, and laugh.
  - “Humanity could stage no greater display of happiness,” reported one observer.
Pain of Being Shut Out: Ostracism

- Deliberate social exclusion of individuals or groups
  - Many forms are used around the world.
- Ostracism is a real pain.
  - Brain scans depict increased activity in areas that activate response to physical pain.
  - Acetaminophen, a pain reliever, helps lessen social pain.
Effects of Ostracism

- Fosters depressed moods or emotional numbness
- Triggers aggression
- Increases risk of mental decline and ill health
Enduring the Pain of Ostracism

- White cadets at the United States Military Academy at West Point ostracized Henry Flipper for years, hoping he would drop out.
  - He somehow resisted their cruelty and in 1877 became the first African-American West Point graduate.
How have students reacted in studies where they were made to feel rejected and unwanted?

What helps explain these results?
At the end of 2015, the world had 7.4 billion people and 7 billion mobile cell-phone subscriptions.

- But phone talking now accounts for less than half of U.S. mobile network traffic.

- The typical U.S. teen with a cell phone sends 30 texts a day.

- Among 2014’s entering American collegians, 94 percent reported using social networking sites.
Social Effects of Social Networking

- Social networking strengthens connections with people that one already knows.
  - Has become a gigantic time- and attention-sucking distraction
- Self-disclosure is sharing the self with others.
  - Online communicators are less focused on others’ reactions, less self-conscious, and thus less inhibited.
- Social networking sites are a feeding place for narcissists.
## Maintaining Balance and Focus: Suggestions

- Monitor time and feelings.
- Hide from more distracting online friends when necessary.
- Check the phone only once per hour while studying.
- Try a social networking fast or a time controlled social media diet.
- Refocus by taking a nature walk.
Social networking tends to ______ (strengthen/weaken) your relationships with people you already know, and ______ (increase/decrease) your self-disclosure.
Emotion: Arousal, Behavior, and Cognition

- Historic emotion theories
- Schacter-Singer two-factor theory: Arousal + Label = Emotion
- Zajonc, LeDoux, and Lazarus: Emotion and the two-track brain
Emotion

- Response of the whole organism, including:
  - Bodily arousal
  - Expressive behaviors
  - Conscious experiences

- Two big questions:
  - Does bodily arousal come before or after emotional feelings?
  - How do thinking and feeling interact?
    - Does cognition always come before emotion?
**Historical Emotion Theories**

- **James-Lange theory**
  - Emotional experience is the awareness of one’s physiological responses to an emotion-arousing stimulus.

- **Cannon-Bard theory**
  - An emotion-arousing stimulus simultaneously triggers:
    - Physiological responses
    - Subjective experience of emotion
Joy Expressed Is Joy Felt

- According to the James-Lange theory, we do not just smile because we share our teammates’ joy.
- We also share the joy because we are smiling with them.
Schachter and Singer’s Two-Factor Theory

- To experience emotion, individuals must:
  - Be physically aroused
  - Cognitively label the arousal
- Emotional experiences require the conscious interpretation of arousal.
- Spillover effect - Arousal spills over from one event to the next, thereby influencing a response.
- Arousal fuels emotion and cognition channels it.
Stanley Schachter and Jerome Singer performed an experiment in 1962 to test how bodily changes and thinking work together to produce emotions.

Subjects were told that they were going to be injected with vitamin C to study its effects on eyesight.

The subjects were actually injected with adrenalin.
Schachter-Singer Experiment

- Group 1 – Adrenalin shot – told the “vitamin” would make their hearts race.
- Group 2 – Adrenalin shot – told it would make them numb
- Group 3 – Adrenalin shot, no info about side effects
- Group 4 - Shot that had no effect, no info about side effects
Subjects who were given the shot were put into a waiting room, anticipating that they would be given a vision test in a few minutes. In the waiting room, there was a confederate whom the subject assumed had been given the same injection they had.
Some confederates acted wild, happy, dancing around, making paper airplanes out of a questionnaire they were given.

Other confederates became increasing angry as they answered a very offensive questionnaire.
• If the subjects were told what reaction to expect, they reacted in mild amusement to the confederates' behavior.

• If they were not told of side effects or given false information about side effects, they took their cues from the behavior of the confederate.
Arousal from a soccer match can fuel anger, which can descend into rioting or other violent confrontations.
Emotion and the Two-Track Brain

- Robert Zajonc argued that:
  - Some emotions, especially more complex feelings, travel the high road via the thalamus to the brain’s cortex
  - Sometimes, emotional responses take a neural shortcut that bypasses the cortex and goes directly to the amygdala
The Brain’s Pathways for Emotions

- The two-track brain processes sensory input on two different pathways.
  - Some travels to the cortex and then to the amygdala.
  - Some travels directly to the amygdala.
Lazarus agreed that the brain processes a lot of information without conscious awareness.

- Some emotional responses do not require conscious thinking.

- He posited that emotions arise when an event is appraised as harmless or dangerous.
<table>
<thead>
<tr>
<th>Theory</th>
<th>Explanation of Emotions</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>James-Lange</em></td>
<td>Our awareness of our specific bodily responses to emotion-arousing stimuli</td>
<td>We observe our heart racing after a threat and then feel afraid.</td>
</tr>
<tr>
<td><em>Cannon-Bard</em></td>
<td>Bodily responses + simultaneous subjective experience</td>
<td>Our heart races at the same time that we feel afraid.</td>
</tr>
<tr>
<td><em>Schachter-Singer</em></td>
<td>Two factors: general arousal + a conscious cognitive label</td>
<td>We may label our arousal as fear or excitement, depending on context.</td>
</tr>
<tr>
<td><em>Zajonc; LeDoux</em></td>
<td>Instant, before cognitive appraisal</td>
<td>We automatically feel startled by a sound in the forest before labeling it as a threat.</td>
</tr>
<tr>
<td><em>Lazarus</em></td>
<td>Appraisal (&quot;Is it dangerous or not?&quot;)—sometimes without our awareness—defines emotion</td>
<td>The sound is &quot;just the wind.&quot;</td>
</tr>
</tbody>
</table>
According to the Cannon-Bard theory, our physiological response to a stimulus (for example, a pounding heart) and the emotion we experience (for example, fear) occur ______ (simultaneously/sequentially).

According to the James-Lange theory, our physiological response to a stimulus (for example, a pounding heart) and the emotion we experience (for example, fear) occur ______ (simultaneously/sequentially).
According to Schachter and Singer, two factors lead to our experience of an emotion: (1) physiological arousal and (2) _____ appraisals.

Emotion researchers have disagreed about whether emotional responses occur in the absence of cognitive processing.

How would you characterize the approach of each of the following researchers: Zajonc, LeDoux, Lazarus, Schachter, and Singer?
Embodied Emotion

- The basic emotions
- Emotions and the autonomic nervous system
- The physiology of emotions
- Thinking critically about: Lie detection
Basic Emotions

- Joy
- Interest-excitement
- Surprise
- Sadness
- Anger
- Disgust
- Contempt
- Fear
- Shame
- Guilt
Figure 9.11 - Some Naturally Occurring Infant Emotions

(a) Joy (mouth forming smile, cheeks lifted, twinkle in eye)
(b) Anger (brows drawn together and downward, eyes fixed, mouth squarish)
(c) Interest (brows raised or knitted, mouth softly rounded, lips may be pursed)
(d) Disgust (nose wrinkled, upper lip raised, tongue pushed outward)
(e) Surprise (brows raised, eyes widened, mouth rounded in oval shape)
(f) Sadness (brows’ inner corners raised, mouth corners drawn down)
(g) Fear (brows level, drawn in and up, eyelids lifted, mouth corners retracted)
Emotions and the Autonomic Nervous System (ANS)

Sympathetic division of the ANS mobilizes body for action.

The adrenal glands are triggered to release stress hormones.

Sugar is released from the liver into the bloodstream to provide energy.

Breathing rate, heart rate, and blood pressure increase.

Digestion slows to permit movement of blood toward the muscles.

Hormones gradually leave the bloodstream when crisis passes.
### Figure 9.12 - Emotional Arousal

#### Autonomic Nervous System Controls Physiological Arousal

<table>
<thead>
<tr>
<th>Sympathetic division (arousing)</th>
<th>Parasympathetic division (calming)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupils dilate</td>
<td>Pupils get smaller</td>
</tr>
<tr>
<td>Decreases</td>
<td>Increases</td>
</tr>
<tr>
<td>Perspires</td>
<td>Dries</td>
</tr>
<tr>
<td>Increases</td>
<td>Decreases</td>
</tr>
<tr>
<td>Speeds up</td>
<td>Slows</td>
</tr>
<tr>
<td>Slows</td>
<td>Speeds up</td>
</tr>
<tr>
<td>Increased stress hormones</td>
<td>Decreased stress hormones</td>
</tr>
<tr>
<td>Reduced</td>
<td>Enhanced</td>
</tr>
</tbody>
</table>

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*Figure 9.12*
Physiology of Emotions

- Different emotions can share common biological signatures.
- Subtle indicators depict the physiology of different emotions.
  - Fear versus rage - Finger temperature and hormone secretions display the difference.
  - Fear versus joy - Different facial muscles are stimulated.
Physiology of Emotions: Brain Scans

- Brain scans and electroencephalograms (EEGs) reveal that some emotions differ in their brain circuits.
  - The right frontal lobe is active when an individual is depressed and experiences negative emotions.
  - The left frontal lobe is active when an individual experiences positive moods.
Think Critically, Part 1

- Lie detection
  - **Polygraph**: Measures emotion-linked changes in breathing, heart rate, and perspiration
  - There is considerable skepticism on the effectiveness of polygraphs.
    - Humans have similar bodily arousal in response to anxiety, irritation, and guilt.
    - Many innocent people do get tense and nervous when accused of a bad act.
Think Critically, Part 2

- Lie detection
  - The guilty knowledge test is more effective.
    - Innocent people are seldom wrongly judged to be lying.
    - Questions focus on specific crime-scene details known only to the police and the guilty person.
Expressed and Experienced Emotion

- Detecting emotion in others
- Culture and emotion
- The effects of facial expressions
Detecting Emotion in Others

- Humans communicate without words.
  - Glances can communicate intimacy.
  - Darting eyes may signal anxiety.
  - Humans have the ability to detect nonverbal threats.
- It is difficult to detect deceiving emotions, despite the brain’s emotion-detecting abilities.
Detecting Emotion in Others: Women versus Men

- Women detect emotions better than men do.
  - Tend to respond with and express greater emotion
  - More likely to express empathy
  - Experience emotional events deeply and tend to remember scenarios better than men
- Anger is considered to be a more masculine emotion.
Male or Female?

- Researchers manipulated a gender-neutral face.
  - People were more likely to see it as a male when it wore an angry expression, and as a female when it wore a smile.
Gender and Expressiveness

- Male and female film viewers did not differ dramatically in self-reported emotions or physiological responses.
  - But the women’s faces showed much more emotion.
Figure 9.14

“Now, that wasn’t so hard, was it?”

Figure 9.14
Myers/DeWall. *Psychology in Everyday Life*, 4e, © 2017 Worth Publishers
David Sipress
Retrieval and Remember 10

- _______ (Women/Men) report experiencing emotions more deeply, and they tend to be more adept at reading nonverbal behavior.
Culture and Emotion

- The meanings of gestures vary among cultures.
  - Outward signs of emotion are generally the same.
- Shared emotional categories do not reflect shared cultural experiences.
- Humans share a universal facial language.
  - Adapt to interpret faces in particular contexts
- Cultural differences shape facial expressiveness.
Culture-Specific or Culturally Universal Expressions?

- As people of differing cultures, do our faces speak differing languages?

Figure 9.15
Ekman & Matsumoto, Japanese and Caucasian Facial Expressions of Emotions
Universal Emotions

- No matter where on Earth you live, you have no trouble knowing which photo depicts English soccer player Michael Owen and his fans feeling crushing disappointment, after he missed a goal, and triumphant celebration, after he scored one.

Phil Noble/AP Photo (left); Tom Purslow/Manchester United/Getty Images (right)
Are people more likely to differ culturally in their interpretations of facial expressions, or of gestures?
Effects of Facial Expressions, Part 1

- Outward expressions and movements trigger inner feelings and emotions.

- **Facial feedback effect**: The tendency of facial muscle states to trigger corresponding feelings
  - Fear, anger, or happiness

- The face displays and feeds an individual’s feelings.

- Behavior feedback effect - Going through the motions awakens the emotions.
Effects of Facial Expressions, Part 2

- Understanding feedback effects helps an individual become more empathic.
- Emotions are contagious.
  - Illustrated by one’s natural imitation of another’s emotions
- Psychological emotions come equipped with physical reactions.
  - Negative emotions and prolonged high arousal can harm an individual’s health.
How to Make People Smile without Telling Them to Smile

- Do as Kazuo Mori and Hideko Mori (2009) did with students in Japan.
  - Attach rubber bands to the sides of the face with adhesive bandages, and then run them either over the head or under the chin.

![Diagram showing rubber bands and adhesive bandages on the face.](image-url)
Based on the facial feedback effect, how might students in this experiment report feeling when the rubber bands raise their cheeks as though in a smile?

How might they report feeling when the rubber bands pull their cheeks downward?