Chapter 10

Motivation and Emotion
Overview

Motivation:
- Theories of Motivation: Drives, Arousal, Heirarchy of Motives
- Some Motivations in Depth:
  - Hunger
  - Belonging
  - Achievement

Emotion:
- The roles of Arousal, Behavior, and Cognition
- Embodied Emotion: What’s going on in the body during emotions
- Expressed and Experienced Emotion
- The influence of culture and gender
Basic Motivation Concepts, Hunger, and Belonging

Topics you might be driven to learn about

Models of Motivation:

- Instincts and Evolutionary Psychology
- Drives and Incentives
- Seeking Optimum Arousal levels
- A Hierarchy of Motives
Motivation

Motivation: a need or desire that energizes behavior and directs it towards a goal.

For example, Aron Ralston found the motivation to cut off his own arm when trapped on a cliff in Utah in 2003.

What motivated him to do this? Hunger? The drive to survive? The drive to reproduce?
There are different ways of thinking of the way motivation works, all of which relate to the “push” of biological processes and the “pull” of culture, social forces, and ideals.

- Instinct Theory → Evolutionary Perspective
- Hierarchy of Needs/Motives
- Drive-Reduction Theory
- Arousal [Optimization] Theory
An **instinct** is a fixed (rigid and predictable) pattern of behavior that is not acquired by learning and is likely to be rooted in genes and the body.
Other species have genetically programmed **instincts** “motivating” their actions.

Do humans?

- Human babies show certain reflexes, but in general, our behavior is less prescribed by genetics than other animals.
- We may, however, have general patterns of behavior which can be explained as emerging through natural selection.
- Instinct theory has given way to evolutionary theory in explaining human behavior.
Drive Reduction

- A drive is an aroused/tense state related to a physical need such as hunger or thirst.
- Drive-reduction theory refers to the idea that humans are motivated to reduce these drives, such as eating to reduce the feeling of hunger. This restores homeostasis, a steady internal state.
Seeking Optimum Arousal

- Some behavior seems driven by a need to either increase or decrease our physiological arousal level.
- Curiosity, as with kids and these monkeys, may seek stimulation to reach an optimum arousal level.
- A hunger for stimulation, novelty, makes humans infovores, seekers of knowledge.
What happen when we succeed at raising our arousal levels?

Yerkes-Dodson Law: Arousal levels can help performance but too much arousal can interfere with performance.

For taking an exam, moderate arousal might be best.
Hierarchy of Needs/Motives

Abraham Maslow proposed that humans strive to ensure that basic needs are satisfied; then, they find motivation to pursue goals that are higher on this hierarchy.
Violating the Hierarchy?

- Do hunger strikers and mystics feel secure enough in meeting their needs that they can do without food temporarily to pursue a higher goal?

Soldiers sacrifice safety, but could they be seen as fighting for safety, both indirectly (protecting the country) and directly (defeating the people shooting at them)?
A closer look at one need/motive: Hunger

Research on hunger is consistent with Abraham Maslow’s hierarchy:

- In one study, men whose food intake had been cut in half became obsessed with food.
- Hunger even changes our motivations as we plan for the future.
Physiology of Hunger

- Experiments and other investigations show a complex relationship among the stomach, hormones, and different parts of the brain.
- Feeling hungry can include stomach contractions; the feeling can happen even if the stomach is removed or filled with a balloon.

Washburn swallows balloon, which measures stomach contractions.

Washburn presses key each time he feels hungry.

Graph showing stomach contractions and hunger pangs over time.
The Hypothalamus and Hunger

Receptors in the digestive system monitor levels of glucose and send signals to the hypothalamus in the brain.

The hypothalamus then can send out appetite-stimulating hormones to tell the body: time to eat!
The hypothalamus sends appetite-stimulating hormones, and later, after eating, sends appetite-suppressing hormones. Hormones travel from various organs of the body back to the brain to convey messages that increase or decrease appetite.
Regulating Weight

- When a person’s weight drops or increases, the body responds by adjusting hunger and energy use to bring weight back to its initial stable amount.
- Most mammals, without consciously regulating, have a stable weight to which they keep returning. This is also known as their set point.
- A person’s set point might rise with age, or change with economic or cultural conditions. Therefore, this “set point” of stable weight is more of a current but temporary “settling point.”
Which foods to eat?

Taste Preferences

- Some taste preferences are universal. Carbohydrates temporarily raise levels of serotonin, reducing stress and depression.
- Other tastes are acquired and become favorites through exposure, culture, and conditioning.
- Different cultures encourage different tastes.

Some cultures find these foods to be delicious: reindeer fat and berries, or roasted guinea pig.
Influences on Eating Behavior

**Biological influences:**
- hypothalamic centers in the brain monitoring appetite
- appetite hormones
- stomach pangs
- weight set/settling point
- attraction to sweet and salty tastes
- adaptive wariness toward novel foods

**Psychological influences:**
- sight and smell of food
- variety of foods available
- memory of time elapsed since last meal
- stress and mood
- food unit size

**Social-cultural influences:**
- culturally learned taste preferences
- responses to cultural preferences for appearance
Set Point and Metabolism

- For a variety of reasons, a person’s **set point**, the **stable weight the body keeps returning to**, drifts from a healthy weight.
- Those who becomes overweight develop a new set point that is now hard to shift. Why?
- Once the set point has shifted, metabolism shifts to maintain it; resting metabolism slows.
- Starving to lose weight slows metabolism further.
- Hunger kicks in when weight goes below the new set point.
- Because the body works this way: **It is thus easier to stay lean than become lean.**
The Genetics of Obesity

- Adopted siblings eating the same meals end up with a BMI/weight resembling biological parents, not people in the same household.
- Identical twins have similar weights, even when raised apart with different food.
- There seem to be many genes with effects on weight.

Lifestyle Factors and Obesity

- People who are restless and fidgeting burn off more calories and gain less weight than others.
- Inadequate sleep causes weight gain, despite increased active time, because of appetite hormones.
- Having an obese friend correlates with becoming obese.
- Sedentary lifestyles and fast food may be leading to increased body fat worldwide.
Another Motivation: “To Belong”

What do people need besides food and sex?
- Aristotle: social life
- Alfred Adler: community
- In Middle English, to be *wretched* [*wrecche*] means to “be without kin nearby”
- Roy Baumeister, Mark Leary, and Abraham Maslow say we need: “To Belong.”
Why do we have a need to belong?

Evolutionary psychology perspective: seeking bonds with others aids survival in many ways

- Keeping children close to caregivers
- Emotional support to get through crises
- Mutual protection in a group
- Division of labor to allow growing food
- Cooperation in hunting and sharing food
- Why do we have a need to belong?
Balancing Bonding with Other Needs

- The need to bond with others is so strong that we can feel lost without close relationships.
- However, we also seem to need **autonomy** and a sense of personal **competence/efficacy**.

There a tension between “me” and “us,” but these goals can work together.

→ Belonging builds self-esteem, and prepares us for confident autonomy.
The Need to Belong Leads to:

- loyalty to friends, teams, groups, and families.

However, the need to belong also leads to:

- changing our appearance to win acceptance.
- staying in abusive relationships.
- joining gangs, nationalist groups, and violent organizations.
Disrupted Bonds, New Beginnings

- Children repeatedly moved away from primary caretakers in childhood may have difficulty forming deep **attachments** in adulthood.
- People losing a loved one or moving away from a hometown can feel grief.
- Being **ostracized**, cut off from social contact or excluded, can lead to real physical pain.

→ And yet people can find resilience and relief from pain by building social connections.
Social Networking = Social Connection?

Do updates and tweets build connection?

Use of social networking can become a compulsion, sacrificing face-to-face interaction and in-depth conversation.

Research shows: Portrayal of one’s self online is often close to one’s actual sense of self.

Research shows: Online social networking is associated with

- Narcissism/self-centeredness
- less connection to neighbors
- more connection to people who share our narrow interests and viewpoints

Is our online self-disclosure honest, and healthy?

Is social networking making us more connected, or less?
Introduction to Emotion

Physiological Arousal:
- Comes before emotion (James-Lange theory)
- Comes with emotion (Cannon-Bard theory)
- Becomes an emotion when cognitive appraisal/label is added (Shacter-Singer two-factor theory)

Emotions and the brain: Sometimes cognition is bypassed in emotional reactions

Emotions and the body: The Autonomic Nervous system

Emotions with different brain and body response patterns
Emotion: Arousal, Behavior, and Cognition

Someone cuts you off on the road. You may feel the emotion of anger. Emotions are a mix of:

Expressive behavior: yelling, accelerating

Bodily arousal: sweat, pounding heart

Conscious experience: (thoughts, especially the labeling of the emotion)
What a bad driver! I am angry, even scared; better calm down.

How do these components of emotion interact and relate to each other?

- Do our thoughts trigger our emotions, or are they a product of our emotions?
- How are the bodily signs triggered?
- How do we decide which emotion we’re feeling?

An emotion is a full body/mind/behavior response to a situation.
Theories of Emotion: The Arousal and Cognition “Chicken and Egg” Debates

- Which came first, the chicken or the egg? Or did they evolve together?
- Which happens first, the body changes that go with an emotion, or the thoughts (conscious awareness and labeling of an emotion), or do they happen together?

James-Lange Theory:
- body before thoughts

Cannon-Bard Theory:
- body with thoughts

Singer-Schachter/Two-factor theory:
- body plus thoughts/label

Zajonc, LeDoux, Lazarus:
- body/brain without conscious thoughts
James-Lange Theory: Body Before Thoughts

William James (1842-1910): “We feel afraid because we tremble, sorry because we cry.”

The James-Lange theory states that emotion is our conscious awareness of our physiological responses to stimuli.

- Our body arousal happens first, and then the cognitive awareness and label for the feeling: “I’m angry.”
- According to this theory, if something makes us smile, we may [then] feel happy.
Cannon-Bard Theory: Simultaneous Body Response and Cognitive Experience

The Cannon-Bard theory asserts that we have a conscious/cognitive experience of an emotion at the same time as our body is responding, not afterward.

- Human body responses run parallel to the cognitive responses rather than causing them.

Adjusting the Cannon-Bard Theory

- Emotions are not just a separate mental experience. When our body responses are blocked, emotions do not feel as intense.
- Our cognitions influence our emotions in many ways, including our interpretations of stimuli: “Is that a threat? Then I’m afraid.”
I face a stranger, and my heart is pounding. Is it fear? Excitement? Anger? Lust? Or did I have too much caffeine? The label completes the emotion.

The Schachter-Singer “two-factor” theory suggests that emotions do not exist until we add a label to whatever body sensations we are feeling.

In a study by Stanley Schachter and Jerome Singer in 1962, subjects experienced a spillover effect when arousal was caused by injections of what turned out to be adrenaline. The subjects interpreted their agitation to whatever emotion the others in the room appeared to be feeling; the emotional label “spilled over” from others.
Robert Zajonc, Joseph LeDoux, and Richard Lazarus: Emotions without Awareness/Cognition

Theory: some emotional reactions, especially fears, likes, and dislikes, develop in a “low road” through the brain, skipping conscious thought.

In one study, people showed an amygdala response to certain images (above, left) without being aware of the image or their reaction.

(a) The speedy low road
(b) The thinking high road
When Appraisal Affects Emotion

Schachter and Singer highlighted the role of **appraisal** in **labeling emotions**: “this agitation is fear.”

Richard Lazarus noted “top-down” cognitive **appraisal** of stimuli (is that a threat, or something I would enjoy?) influences emotion.
## Summary: Theories of Emotion

<table>
<thead>
<tr>
<th>Theory</th>
<th>Explanation of Emotions</th>
<th>Example</th>
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<tbody>
<tr>
<td>James-Lange</td>
<td>Our awareness of our specific bodily response to emotion-arousing stimuli</td>
<td>We observe our heart racing after a threat and then feel afraid.</td>
</tr>
<tr>
<td>Cannon-Bard</td>
<td>Bodily response + simultaneous subjective experience</td>
<td>Our heart races as we experience fear.</td>
</tr>
<tr>
<td>Schachter-Singer</td>
<td>Two factors: General arousal + a conscious cognitive label</td>
<td>Arousal could be labeled as fear or excitement, depending on context.</td>
</tr>
<tr>
<td>Zajonc; LeDoux</td>
<td>Instant, before cognitive appraisal</td>
<td>We automatically react to a sound in the forest before appraising it.</td>
</tr>
<tr>
<td>Lazarus</td>
<td>Appraisal (“Is it dangerous or not?”)—sometimes without our awareness—defines emotion</td>
<td>The sound is “just the wind.”</td>
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</table>
Theories of Emotion

Emotion can include the appraisal of the stimulus such as, is it a threat or not?

James-Lange Theory
- Pounding heart (arousal)
- Fear (emotion)

Cannon-Bard Theory
- Pounding heart (arousal)

Schachter-Singer Two-Factor Theory
- Pounding heart (arousal)
- Cognitive label
  - “I'm afraid”

Avoiding the highway today without identifying or explaining any fear is an example of the “low road” of emotion.
Carroll Izzard suggested that there are ten basic emotions: those evident at birth (seen here) plus contempt, shame, and guilt.

Is Experienced Emotion as Universal as Expressed Emotion?

(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 (brow’s inner corner raised, mouth corners drawn down)
(g) Fear (brows level, drawn in and up, eyelids lifted, mouth corners retracted)
Embodied Emotion: The role of the autonomic nervous system

- The **physiological arousal** felt during various emotions is orchestrated by the **sympathetic nervous system**, which triggers activity and changes in various organs.
- Later, the parasympathetic division calms down the body.

<table>
<thead>
<tr>
<th>Pupils dilate</th>
<th>EYES</th>
<th>Pupils contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreases</td>
<td>SALIVATION</td>
<td>Increases</td>
</tr>
<tr>
<td>Perspires</td>
<td>SKIN</td>
<td>Dries</td>
</tr>
<tr>
<td>Increases</td>
<td>RESPIRATION</td>
<td>Decreases</td>
</tr>
<tr>
<td>Accelerates</td>
<td>HEART</td>
<td>Slows</td>
</tr>
<tr>
<td>Inhibits</td>
<td>DIGESTION</td>
<td>Activates</td>
</tr>
<tr>
<td>Secrete stress hormones</td>
<td>ADRENAL GLANDS</td>
<td>Decrease secretion of stress hormones</td>
</tr>
<tr>
<td>Reduced</td>
<td>IMMUNE SYSTEM FUNCTIONING</td>
<td>Enhanced</td>
</tr>
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</table>
It is difficult to see differences in emotions from tracking heart rate, breathing, and perspiration.

There is also a large overlap in the patterns of brain activity across emotions.

There are some small differences; for example, fear triggers more amygdala activity than anger.

A general brain pattern: hemispheric differences

Positive “approach” emotions (joy, love, goal-seeking) correlate with left frontal lobe activity.

Negative “withdrawal” emotions (disgust, fear, anger, depression) correlate with right hemisphere activity.
Expressed and Experienced Emotion

See if you can tell what emotions others are feeling, showing, and expressing about these topics:

- Detecting emotions in others
- Gender, emotion, nonverbal behavior
- Culture and expressed emotions
- Using context to read emotions
- Are there universally recognized emotions?
- Do facial expressions affect feelings?
Emotional Expression

- Are there universal forms of emotional expression seen on human faces across all cultures?
- Are there differences by individual, culture, or gender in how emotions are expressed?
- What is the relationship between emotional expression and the inner experience of emotion?
- What emotion do we see in these faces and body positions?
- If these emotions are hard to read, is it because it’s a different culture from your own, or because it’s a performance?
Detecting Emotion in Others

- People read a great deal of emotional content in the eyes ("the window to the soul") and the faces.
- Introverts are better at detecting emotions; extroverts have emotions that are easier to read.
- We are primed to quickly detect negative emotions, and even negative emotion words.
- Those who have been abused are biased toward seeing fearful faces as angry, as in the test below.

These faces morph from fear to anger.
Raise your hand when you first see anger under the red box.
Detecting Lies and Fakes

- Polygraphs (detecting physiological arousal) fail sometimes at correctly identifying when people are lying.
- Visible signs of lying: eye blinks decrease, and other facial movements change.

In which image is Paul Ekman “lying” with a fake smile?

→ A real smile uses involuntary muscles around the eyes.
Gender and Emotional Expression and Detection

- Women seem to have greater and more complex emotional expression.
- Women are also more skilled at detecting emotions in others.
- However, this is an overgeneralization. People tend to attribute women’s emotionality to their dispositions, and attribute men’s emotions to their circumstances.

We also see some emotions as being more “male,” changing our perception of a gender-neutral face based on the emotion (below):

Male or female? How about now?
Culture and Emotional Expression: Are There Universally Recognized Emotions?

- There seem to be some universally understood *facial expressions*.
- People of various cultures agree on the emotional labels for the expressions on the faces on the right.
- People in other studies did have more accuracy judging emotions from their own own culture.
Emotion Detection and Context Cues

- What emotions do you see below?
  How can you tell what emotions he is feeling?
- Because the faces are exactly the same, our detection of emotion must be based on context: the situation, gestures, and the tears.
Linking Emotions and Expressive Behaviors: Facial Feedback

- The **facial feedback effect**: facial position and muscle changes can alter which emotion we feel.
- In one study, people whose faces were moved into smiling or frowning positions experienced a change in mood.
- Fake a relaxed smile, and you might feel better!
- It’s not just about faces. In one experiment, extending a 1) middle finger or 2) thumb while reading led to seeing characters with 1) hostility or 2) positive attitude.

The guy at the top, though forced into a smiling position, ended up feeling happier than the other guy.