Motivation and Emotion
Chapter 10

Aims
- Discuss categories of human motives & Emotions
- Motivation of hunger & eating
- Sexual motivation & behaviour
- Individual differences in both motivation & Emotion
- A human being is inherently
  - biological.
  - conditioned by the environment.
  - gathering data about the world through the
    senses and organizing that data

General Theories of Motivation
- **Instinct** refers to fixed behavioral patterns
  - Instincts are unlearned, are always expressed in the
    same way, and are universal within a species
- **Drive Reduction**: a biological need produces arousal
  that is aversive, satisfying the need is reinforcing
- **Psychosocial** theories point to incentives and cognitions
  - Achievement
  - Need for Success
  - Affiliation
  - Aggression (Competition)
- **Interactionism**: incorporates both biological and
  psychosocial theories

Interactionist Model

Psychosocial Model

Maslows Hierarchy of needs
- Need: Physiological
- Need: Safety and security
- Need: love and belonging
- Need: esteem needs
- Need: self-actualization

Examples of Biological Needs in Humans
- Hunger
- Thirst
- Sex
- Sleep
- Renewal
- Reward

Examples of Social Needs in Humans
- Affection
- Memory
- Cognition
- Learning
- Communication

Examples of Aesthetic Needs in Humans
- Art
- Music
- Dance
- Literature
- Theatre
Let’s look at something as “simple” as hunger

- Physical Needs and Drives:
  - Hypothalamus
  - Lateral Hypothalamus
  - Ventromedial Hypothalamus
  - Paraventricular nucleus
  - Glucostats (neurons) measure glucose levels & then cause the release of various hormones based on the body's needs
  - Set Point (sorry)
  - Metabolic Rate: higher is better (to a point)
  - Hormones:
    - orexin: hunger triggering hormone
    - Insulin: allows for the extraction of glucose (sugar/energy) from the bloodstream.
    - Leptin: produced by fat cells, high levels reduce hunger by inhibiting the release of Neuropeptide Y by the PVN.
    - Neuropeptide Y, GABA and norepinephrine all increase desire for carbohydrates (fattening)

Let’s look at something as “simple” as hunger

- Psychological Needs and Drives:
  - Learned preferences and habits
  - Food-related cues
  - Stress and arousal
  - Social “norms”

The Brain
The Hypothalamus

- The Lateral Hypothalamus
  - (brings on hunger)
  - Destroy it & the animal will stop eating.
  - Stimulation this area by depriving it of food and blood sugar is low, the LH churns out orexin, a hunger-triggering hormone.

- The Ventromedial Hypothalamus
  - (depresses hunger)
  - Destroy this area and an animal will stop eating.
  - Stimulate this area by presenting it with food and blood sugar is high, the LH releases leptin, a hunger-depressing hormone.

Hunger and Obesity
Biological Basis of Hunger

The Hypothalamus

- Ventromedial hypothalamus lesions (destruction) produce hyperphagia

How Do these Complementary Areas in the Hypothalamus Work?

1- They influence how much glucose is converted to fat and how much is left available to fuel immediate activity (and minimize hunger).

2- Distributed brain systems monitors the body’s state and reports to the hypothalamus, which sends the information to the frontal lobes, which decide behavior.
How Do these Complementary Areas in the Hypothalamus Work?

3- The lateral and ventromedial hypothalamus work in opposition to alter the body's weight thermostat, which predisposes us to keep our body at a particular weight level called "set point." # of cells born with. NOT size.

paraventricular nucleus (PVN)

For satiety and for diet selection (i.e. amount of carbohydrates).

damage=overeat and eat large meals.

PVN neurons secrete norepinephrine at the start of a meal and serotonin at the end of a meal. The serotonin takes 20 minutes to activate the Ventromedial Hypothalamus

Maintaining the Body’s Set-Point Weight

1- The body adjusts to food intake.
2- The body adjusts to energy output
3- The body adjusts to its basal metabolic rate

Hunger and Obesity

Obesity – genes

The mouse on the right is:
- lacking the gene that encodes leptin
- Leptin is found only in fat cells

Role for leptin in reducing food intake?
- higher leptin is associated with higher fat deposits
- As fat cells increase leptin production SHOULD increase
- injections of leptin reduce food intake and reduce weight
- leptin receptors are located in the paraventricular nucleus
- leptin inhibits eating

Blocks Lipase so you CAN’T Absorb fat!!! Sound good????

From their own web page

4. what shouldn’t be in a treatment program?
- The most common treatment often comes from eating meals with too much fat and using all capsaicin.
- Underfat or underfed cannot be absorbed and pass through the body normally. The correct balance is between.

The treatment often includes an exercise program that includes weekly walking. The walking target is 30 minutes a day with 20 grams of fat per week. On average can treat this through a combination of these treatment effects.

In Other Words you will most likely SH!% yourself
In wealthy countries, food is NOT just about HUNGER!!!

- Learned preferences and habits
  - Exposure
  - When, as well as what
- Food-related cues
  - Appearance, odor, effort required
- Stress and arousal
  - Link between heightened arousal and overeating

Eating and Weight: The Roots of Obesity

- Genetic Predisposition
  - Body Mass Index and adoption study
- The Concept of Set Point
  - Number, not size of fat cells (change on your handout)
- Dietary restraint (restrained eaters)
  - Under-eat for days, then cheat:
    - Disinhibition: gorge out of failure and guilt

Hunger: So Complex. It fits ALL 4 theories of Motivation

- Obesity is a disease that affects nearly one-third of the adult American population (approximately 60 million).
- The number of overweight and obese Americans has continued to increase since 1960.
- Today, 64.5 percent of adult Americans (about 127 million) are categorized as being overweight or obese.
- Each year, obesity causes at least 300,000 excess deaths in the U.S., and healthcare costs of American adults with obesity amount to approximately $100 billion.

\[ \text{BMI} = \frac{\text{weight}}{\text{height}^2} \times 703.5 \]

A BMI of 30 or more is considered obese and a BMI between 25 to 29.9 is considered overweight.

Genetic basis of Weight

- Genes affect obesity.
- Change the message or the gene = lose weight.
- There is a relationship between infant weight and adult weight = the # of fat cells.
  - Obese = an increase in the size of the cells, not in the number.
Eating Disorders

- Anorexia
- Bulimia
- Multiple causes

Sexual Motivation and Behavior: Determining Desire

- Hormonal regulation
  - Estrogens
  - Androgens
  - Testosterone
- Pheromones
  - Synchronized menstrual cycles
  - Aphrodisiacs
- Erotic materials
- Attraction to a Partner
- The Coolidge effect
- Evolutionary factors

Parental investment theory and mating preferences. Parental investment theory suggests that basic differences between males and females in parental investment have great adaptive significance and lead to gender differences in mating propensities and preferences, as outlined here.
The gender gap in desire for a variety of sexual partners. Buss and Schmitt (1993) asked college students about how many sexual partners they ideally would like to have for various time intervals ranging up to one’s entire lifetime. As evolutionary theorists would predict, males are interested in having considerably more partners than females.

Gender and potential mates’ financial prospects. Consistent with evolutionary theory, Buss (1989) found that females place more emphasis on potential partners’ financial prospects than males do. Moreover, he found that this trend transcended culture. The specific results for 6 of the 37 cultures studied by Buss are shown here.

Gender and potential mates’ physical attractiveness. Consistent with evolutionary theory, Buss (1989) found that all over the world, males place more emphasis on potential partners’ good looks than do females. The specific results for 6 of the 37 cultures studied by Buss are shown here.

The Nuclear Family—Women have evolved to be sexually receptive as a way of keeping the men around.

Which of these women do you find most attractive in each row (I,II,III)?

Dr. Dev Singh of the University of Texas manipulated the waist/hip ratios of these 7 Barbies.
Basic symmetry is associated with general health. Health is a strong determinant of BEAUTY.

Figure 10.13
Evolutionary hypotheses about gender differences in relationship jealousy. Evolutionary theory suggests that the issue of paternity uncertainty creates basic differences between males and females in the types of infidelity that will elicit the strongest feelings of jealousy, as outlined here.

Figure 10.14
The gender gap in jealousy. Buss et al. (1992) asked subjects to vividly imagine scenarios involving either sexual or emotional infidelity by their partner. Subjects’ distress while imagining these scenarios was assessed by monitoring various indexes of emotional and physiological arousal. As these results show, sexual infidelity generated the most distress in males, whereas emotional infidelity elicited the most arousal in females.

What is normal sexual behavior?
- How does the textbook define what normal sexual behavior is?
  - Does it do this explicitly? Or implicitly?
  - Does normal mean: Average behavior?
  - Or does it mean: What ought to be?
  - Or does it mean: Appropriate to our nature?

The Mystery of Sexual Orientation
- Heterosexual – Bisexual – Homosexual
  - A continuum
- Theories explaining homosexuality
  - Environmental
  - Biological
  - Interactionist

Attitudes toward homosexuality
A few questions
1. How did the book handle it?
2. What should our response be?
3. What if homosexuality is caused by a genetic factor?
4. Why do we have such strong attitudes toward homosexuality?
5. Why are women more tolerant than men?
6. Why are seniors more tolerant than freshmen?
7. Why are people who know someone who is homosexual more tolerant?
Incidence of homosexuality

1. Studies show not change in incidence in last 50 years
2. 2% to 4% in males
3. .5% to 1% in females
4. Doesn’t approach the 10% often quoted
5. Incidental contact:
   10% to 25% in males
   15% in females

Determinants of Gender Identity

- Gender identity refers to the personal view of oneself as male or as female
- Environmental factors were assumed to be central determinants of gender identity
  - Notion was that social-cultural influences shaped gender identity
  - The case of the castrated identical twin whose gender identity was reassigned following a botched circumcision was taken as important evidence for the role of environmental factors
  - Problem: he later rejected the reassignment and took on a male gender identity (now this case supports a biological view of gender identity)

Gender Role Development

- Gender roles are societal expectations for normal and appropriate female and male behavior
  - Social-learning theory argues that gender roles develop as children:
    - receive rewards/punishments for gender role behaviors
    - watch and imitate the behaviors of others
  - Cognitive-developmental theory argues that children develop gender schemas

Gender Differences

- Cognitive abilities
  - Females score higher on verbal skills
  - Males score higher on math, visual-spatial skills
- Aggression
  - Males exhibit greater physical aggressiveness
  - Females are higher on relational aggression
    - E.g. spreading rumors about others, ignoring or excluding others

Androgyny

- Androgyny – combining characteristics considered typically male with characteristics considered typically female
- Masculine and androgynous individuals generally have higher self-esteem and creativity, are more socially competent and motivated to achieve, and exhibit better overall mental health.

Figure 10.15
Homosexuality and heterosexuality as endpoints on a continuum. Sex researchers view heterosexuality and homosexuality as falling on a continuum rather than make an all-or-none distinction. Kinsey and his associates (1948, 1953) created this seven-point scale (from 0 to 6) to describe people’s sexual orientation. They used the term ambisexual to describe those who fall in the middle of the scale, but such people are commonly called bisexual today.
Figure 10.17
Genetics and sexual orientation. A concordance rate indicates the percentage of twin pairs or other pairs of relatives who exhibit the same characteristic. If relatives who share more genetic relatedness show higher concordance rates than relatives who share less genetic overlap, this evidence suggests a genetic predisposition to the characteristic. Recent studies of both gay men and lesbian women have found higher concordance rates among identical twins than fraternal twins, who, in turn, exhibit more concordance than adoptive siblings. These findings are consistent with the hypothesis that genetic factors influence sexual orientation. (Data from Bailey & Pillard, 1991; Bailey et al., 1993)

Figure 10.18
An interactionist theory regarding the development of sexual orientation. As the text explains, Daryl Bem (1996, 1998) has recently proposed a radically different theoretical overview of how sexual orientation develops. His model proposes a developmental sequence in which biological predispositions shape youngsters’ temperament, which in turn shapes learning experiences. Critics have argued that Bem’s model underestimates the importance of biology, overestimates the similarity of males’ and females’ experiences, and posts a rather implausible final step. Nonetheless, it is a thought-provoking theory that is worthy of empirical research.

Sexual Orientation
- Homosexuality may reflect the impact of biological factors on sexual orientation
  - Biological factors are supported by twin studies that suggest genetic influence on sexual orientation
- Homosexuality does NOT reflect
  - Poor parenting: smothering mother, detached father
  - Arrested development or an immature personality
  - Childhood seduction by adults
  - Modeling of gay behaviors and views from others

The Human Sexual Response
- Masters and Johnson – 1966
  - Stages:
    - Excitement
    - Plateau
    - Orgasm
    - Resolution

Sexual Response Cycle

Affiliation and Achievement Motivation
- Affiliation motive = need for social bonds
  - Devote more time to interpersonal activities
  - Worry more about acceptance
- Achievement motive = need to excel
  - Work harder and more persistently
  - Delay gratification
  - Pursue competitive careers
- Situational influences on achievement motives
- Thematic Apperception Test (TAT)
Assessing the Unconscious--TAT
Thematic Apperception Test (TAT)
people express their inner motives through the stories they make up about ambiguous scenes.

Figure 10.22
Determinants of achievement behavior. According to John Atkinson, a person’s pursuit of achievement in a particular situation depends on several factors. Some of these factors, such as need for achievement or fear of failure, are relatively stable motives that are part of the person’s personality. Many other factors, such as the likelihood and value of success or failure, vary from one situation to another, depending on the circumstances.

And Now for Emotion

(Time to Get Emotional

But what is it that finally Gets you OFF YOUR BUTT!!!

- Achievement
  - Fear of Failure
  - Need for Success.
- Affiliation
- Aggression (Competition)

Emotions

What are they?
- Looking at one theory and two hypotheses
  - Theory: Two Factor Theory
    - Hypothesis: Cognition drives emotions
    - Hypothesis: Behavior drives emotions

Cut a piece of paper into 10 parts
On each new piece (10 of them) write down an emotion

Looking at one theory and two hypotheses

- Theory: Two Factor Theory
  - Hypothesis: Cognition drives emotions
  - Hypothesis: Behavior drives emotions
Emotions

- Emotions are stirred up states
- Components of emotion include:
  - Cognitive: thoughts, beliefs and expectations
  - Behavioral: outward signs of an emotional state
  - Physiological: internal physical changes related to arousal

Physically 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 contract</td>
</tr>
<tr>
<td>Decreases SALIVATION Increases</td>
<td></td>
</tr>
<tr>
<td>Perspires SKIN Decreases</td>
<td></td>
</tr>
<tr>
<td>Increases RESPIRATION Decreases</td>
<td></td>
</tr>
<tr>
<td>Accelerates HEART Slows</td>
<td></td>
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<tr>
<td>Inhibits DIGESTION Activates</td>
<td></td>
</tr>
<tr>
<td>Secrete stress hormones</td>
<td>Decreases secretion of stress hormones</td>
</tr>
</tbody>
</table>

What is the Value of Emotion?

- determine personal viability
- prepare us for action
- shape our behavior (emotions are reinforcing)
- regulate social interaction
- facilitate communication nonverbally
- facilitate adult-child relations and thus development
- make life worth living by adding value to experience
- allow us to respond flexibly to our environment (approaching good, avoiding bad)

FOUR (4) Theories of Emotion

1. Common-Sense Theory

- Common sense might suggest that the perception of a stimulus elicits emotion which then causes bodily arousal

- largely a conscious phenomena
- involve more bodily manifestations than other conscious states
- vary along a number of dimensions: intensity, type, origin, arousal, value, self-regulation, etc.
- are reputed to be “antagonists of rationality.”
- have a central place in moral education and moral life through conscience, empathy, and many specific moral emotions such as shame, guilt, and remorse; inextricably linked to moral virtues
Theories of Emotions

2. James-Lange theory of emotion
   - The theory that emotional feelings result when an individual becomes aware of a physiological response to an emotion-provoking stimulus.

3. Cannon-Bard theory of emotion
   - The theory that an emotion-provoking stimulus is transmitted simultaneously to the cortex, providing the feeling of emotion, and to the sympathetic nervous system, causing the physiological arousal.
   - Cognitive labeling and action would follow consciousness of feeling and physiological arousal.
Theories of Emotions

4. Schachter-Singer theory of emotion
   - A two-stage theory stating that for an emotion to occur, there must be (1) physiological arousal and (2) an explanation for the arousal

Schachter’s Two-Factor Theory of Emotion

- Sight of oncoming car (perception of stimulus)
- Pounding heart (arousal)
- Cognitive label “I’m afraid”
- Fear (emotion)

Theories of Emotions

- Schachter-Singer theory of emotion
  - A two-stage theory stating that for an emotion to occur, there must be (1) physiological arousal and (2) an explanation for the arousal
  - Accounts for subjective interpretation
  - Does not account for specific physiological states associated with some emotions

Three Ways to Measure Emotion

- Body/Physical
  - blood pressure
  - heart rate
  - adrenaline levels
  - muscle activity when smiling, frowning, etc.
  - neural images
  - posture
  - tears
  - perspiration
  - lie detector readings
Three Ways to Measure Emotion

- Thoughts (observed indirectly through)
  - spoken and written words on rating scales
  - answers to open-ended questions on surveys and during interviews
  - responses to projective instruments, sentence stems, etc.
  - self-assessments or perceptions regarding the behavior and intentions of others
  - other cognitive operations such as rational/logical thinking

Emotion and the Brain

- Emotion associated with the limbic system
- The brain structure most closely associated with fear is the amygdala
- When the emotion of fear first materializes, much of the brain’s processing is nonconscious

Basic Emotions

- Paul Ekman and Carroll Izard
  - Insist that there are a limited number of basic emotions
- Basic emotions
  - Emotions that are found in all cultures, that are reflected in the same facial expressions across cultures, and that emerge in children according to their biological timetable
- Ekman
  - Suggested considering emotions as families
  - The anger family might range from annoyed to irritated, angry, livid, and, finally, enraged
  - If perceived as a family, anger should also include various forms of its expression

Culturally universal expressions

Plutchik

Three-dimensional Circumplex Model
Triangular Theory of Love

- Robert Sternberg’s theory that three components – **INTIMACY**, **PASSION**, and **COMMITMENT** – singly and in various combinations produce seven different kinds of love:
  1. Liking (I)
  2. Infatuated love (P)
  3. Empty love (C)
  4. Romantic love (I, P)
  5. Fatuous love (C, P)
  6. Companionate love (C, I)
  7. Consummate love (I, C, P)