Unit 8 Motivation and Emotion

- **Motivation**- a need or desire that energizes and directs behavior
  - Power of motivation- could be thirst, hunger, exhaustion, social connectedness, desires.
  - **Four Sources of Motivation**-
    1. **Instinct**- inherited tendency to produce responses to stimuli. Complex behavior that is rigidly patterned throughout a species and is unlearned.
    2. **Drives and Incentives- Drive Reduction Theory**: - the idea that a physiological need creates an aroused tension state (a drive) that motivates an organism to satisfy the need.

       Psychological Needs→drive us or gives motivation to meet those needs. The psychological aim of drive reduction is **Homeostasis**- the maintenance of a steady internal state.
       Incentive: Positive or negative external stimuli that motivates behavior.

    3. **Optimum Arousal**- desire to avoid stimuli that are too boring or too arousing. Best performance in a person is at intermediate level of arousal aka. Yerkes-Dodson law
    4. **Maslow's Hierarchy of Needs**:

Self-Actualization Needs to live up one's fullest and unique potential
Esteem Needs - Need for self-esteem, achievement, competence, and independence; need for recognition and respect from others
Belongingness and Love Needs - Need to love and be loved, to belong and be accepted; need to avoid loneliness and alienation
Safety Needs - Need to feel that the world is organized and predictable; need to feel safe, secure, and stable
Physiological Needs – Need to satisfy hunger and thirst. **B**egins with physiological needs that must be satisfied. The higher-level safety needs become active, then psychological needs become active

Motivation-Hunger
How do we know your hungry?

- Feedback from our stomach causes **Stomach contractions** accompany our feelings of hunger.
- **Glucose** the form of sugar that circulates in the blood provides the major source of energy for body tissues when its level is low, we feel hungry.
- **Set Point** the point at which an individual's "weight thermostat" is supposedly set when the body falls below this weight, an increase in hunger and a lowered metabolic rate may act to restore the lost weight.
- **Metabolic Rate**- body's base rate of energy expenditure
- **The Hypothalamus** controls eating and other body maintenance functions. Two places in the hypothalamus, one is the side **Lateral** which initiates hunger. Lesion=no interest in food. **Ventromedial**- suppresses hunger by causing stimulations to stop eating.

The Psychology of Hunger

- Memory of last meal=part of knowledge about when to eat.
- Eating Problems- **Overeating**- eating when the body does not need the additional energy. Can lead to obesity, as defined by a body index of greater than 30. BMI>30
- Can lead to type 2 diabetes, cardiovascular disease, and cancer.
- **Eating Disorders**
  - **Anorexia Nervosa-**When a normal weight person diets and becomes significantly underweight, yet, still have thoughts of feeling fat and continues to starve the body.
  - Usually in adolescent female, but can happen to men.
  - When a person weighs less than 85% of their normal body weight
  - 95% of sufferers are female
  - most are between the ages of 18-30

- 30% of persons diagnosed with anorexia nervosa die
- **Bulimia Nervosa-** Disorder characterized by private "binge-purge" episodes of overeating, usually of high caloric foods, followed by vomiting or laxative use to purge the body of the recent calorie intake.
- Non purging type: fasting or excessive excerise.
- High levels of serotonin associated with anorexia, and low level with bulimia.
- Cultural and family influence seem to take affect more in cultures where a thinner body size is desired.

Sexual Motivation

- Sex is a physiologically based motive, like hunger, but it is more affected by learning and values.
- Important roles of hormones. **Androgens** are male hormones, including testosterone, which cause secondary male sex characteristics. **Estrogen** is female hormone which causes female characteristics. Everyone has both just for each sex different amounts.

Sexual Response Cycle

- The four stages of sexual responding described by Masters and Johnson
- Excitement
- Plateau
- Orgasm
- Resolution

Refractory Period- resting period after orgasm, during which a man cannot achieve another orgasm
Sexual Disorders- problems that consistently impair sexual arousal or functioning
In Men
Premature Ejaculation- ejaculation before them or their partners wish
Impotence- inability to have or maintain erection
In Women
Orgasmic Disorder- infrequent or absent orgasms
Sexual Orientation- an enduring sexual attraction toward members of wither one's own gender (homosexual orientation) or the other gender (heterosexual orientation)

- Homosexuality known in many cultures. Could there be an inability to change orientation?
- A study shows that portions of hypothalamus are twice as small in homosexuals than heterosexuals.

Achievement Motivation- a desire for significant accomplishment for mastery of things, people, or ideas for attaining a high standard
Intrinsic Motivation- desire to perform a behavior for its own sake or to be effective
Extrinsic Motivation- desire to perform a behavior due to promised rewards or threats of punishment rewards Affect Motivation

The Need to Belong

- The need to belong is a deep seated motive to feel social connectedness. There is an almost homeostatic balance of social and alone time.
- Loneliness- is a sad emotional reaction to feeling deprived about existing social relations.
- Chronic loneliness is associated with: cancer, strokes, poor sleep, depression, substance abuse. It is often the result of shyness, which is the feeling of being socially awkward or inhibited.
- Social exclusion- being shunned, avoided, or receiving the silent treatment.
- Social exclusion and aggression usually go hand in hand. Where excluded people are usually more aggressive towards others.

Emotion- a response of the whole organism. A subjective positive and negative reaction to a perceived or remembered object, event, or circumstances, which includes:
Physiological Arousal- such as heart pounding
Expressive Behaviors- such as quickened pace
Conscious experience- such as thoughts, and feelings (a sense of joy or fear)
Arousal and Performance- Performance peaks at lower levels of arousal for difficult tasks, and at higher levels for easy or well-learned tasks.

Theories of Emotion

Does your heart pound because you are afraid…or are you afraid because you feel your heart pounding?
James-Lange Theory of Emotion- Experience of emotion is awareness of physiological responses to emotion-arousing stimuli.
Cannon-Bard Theory of Emotion-Emotion-arousing stimuli simultaneously trigger: physiological responses and subjective experience of emotion
Schachter's Two Factor Theory of Emotion -To experience emotion one must: be physically aroused and cognitively label the arousal.

Experiencing Emotion
Fear

- The amygdala is a neural key to fear learning. Cannot condition fear with damage to amygdala. Hippocampus damage=fear response but will not know why. Amygdala damage=no surprise or fear response.

Subjective Well-Being- self perceived happiness or satisfaction with life; used along with measures of objective well-being (physical and economic indicators to evaluate people's quality of life.
Adaptation-Level Phenomenon- tendency to from judgements relative to a "neutral" level (i.e. brightness of lights, volume of sound, level of income); defined by our prior experience
Relative Deprivation- perception that one is worse off relative to those with whom one compares oneself.

Anger

- How often do you get angry? Most get mildly angry several times a day or week.
- **Catharsis-** emotional release; catharsis hypothesis- "releasing" aggressive energy (through action or fantasy) relieves aggressive urges feel-good, do-good phenomenon- people's tendency to be helpful when already in a good mood.
- Anger may feel good but it will often lead to more anger, if not calmed. Aggression breeds aggression.
- Problem with catharsis- retaliation, escalation of conflict. Acting angry makes us angrier.
- **Handling anger**
    1. Wait it out because psychological arousal decreases with time.
    2. Distract yourself- calm yourself through distractions. Often rumination increases anger.
    3. Practice forgiveness- mentally rehearses it.

Emotion-Lie Detectors

Polygraph- machine that is commonly used in attempt to detect lies; measures several of the physiological responses accompanying emotion (i.e. perspiration, heart rate, blood pressure, breathing changes)

- Ways to detects lie, can be: Control question test (CQT, Reid 1947), two types of question
- **Control Question- generally address questionable behavior**
- Up to age 18, did you ever physically harm anyone?
- **Relevant Question-address specific behavior under investigation**
- Did the deceased threaten to harm you in any way?

CQT Theory- if innocent then will have strong reaction to control question. The guilty will have a stronger emotion to relevant questions. Compare the magnitude of control and relevant responses.
Relevant>Control, Lie
Guilty Knowledge Test- this test uses test and info about events of a crime or something that is available to only the real culprit would know. So it would ask questions that are relevant to the events that occurred that only the real person would know.

- This test is usually better than the CQT test, mostly in protecting the innocent, because it utilizes recognition.

Predicting Happiness

- Impact bias: tendency to overestimate long-term impact of emotional events, the person will underestimate the ability to adapt.
- How to be happier: take control of your time, act happy, exercise, seek work or leisure that engage your skills, healthy sleep habits, be grateful, focus on helping others, prioritize close relationships, and realize that enduring happiness doesn't come from financial success.
  BE HAPPY!

Intelligence

Intelligence: the ability to learn from experience, solve problems, and use knowledge to adapt to new situations.

- Not a concrete "thing", but a social construct/ concept that we have created to explain people's use of knowledge.

A. The Traditional View of Intelligence

- **Charles Spearman and General Intelligence (g)**
  1. Spearman originally developed factor analysis to break down intelligence tests into measurable clusters.
  2. Came up with general intelligence as a factor that underlies all mental ability
     - All tasks we can perform require that a person draws on "g" and "s" or specific intelligence, such as spatial, verbal, and mechanical.
- General intelligence is highly correlated with the ability to solve new problems, ones that specific intelligence cannot deal with alone.
- …but having general intelligence doesn't help in "evolutionary familiar" situations such as raising children.

B. The Contemporary View of Intelligence

- **Howard Gardner an Multiple Intelligences**
  1. Howard believed that there must be multiple intelligences, because:
     - brain trauma patients only lose some abilities, don't become less smart overall
     - savants and islands of excellence
       1. low IQ overall, but amazing abilities in one area
- Howard's intelligences and Exemplars (best examples of each):
  1. linguistic: language crafting (Hemingway)
  2. logical-mathematical: higher ability in logic and math (Einstein)
  3. naturalist: better understanding of how nature works (Darwin)
  4. spatial: manipulation of objects in 3-D space (Raphael)
  5. bodily-kinesthetic: athletic, good w/ balance and movement (Martha Graham)
  6. musical: musical talent (Beethoven)
  7. Interpersonal: good at dealing and relating w/ other people (Gandhi)
  8. Intrapersonal: understanding one's own workings (Freud)
- Can we really call all of this intelligence?
- If a person doesn't know something from one, are they less intelligent?

- **Robert Sternberg's Triarchic Theory**
  1. analytical intelligence: factual, convergent intelligence
  2. creative intelligence: generation of new ideas and adaptability
  3. practical intelligence: "street smarts"-- everyday tasks w/ many answers

C. Emotional Intelligence

- **Emotional Intelligence:** ability to perceive, understand, manage, and use emotions
- Emotional Intelligence Test Mayer, Salovey, & Caruso (2002)
  assesses 4 components
  1. ability to perceive emotion
     recognize in faces, music, & stories
  2. ability to understand emotion
     predict how they change & blend
  3. ability to manage emotions
     how to express them in various situations
  4. ability to use emotions for adaptive creative thinking

- **Relevance of Emotional Intelligence**
  Lopes et al. (2004): Us and German college students
  score high on managing emotions --> higher quality interactions with friends of both sexes
  Van Rooy & Viswesvaran (2004): meta-analysis across 69 studies
  score high on emotional intelligence --> better job performance

D. Intelligence and Creativity

- **Creativity:** the ability to produce new, valuable ideas.
- Positively correlated with intelligence but…
  1. creativity is not higher intelligence, but a different way of thinking
     - **Divergent (Creative) Thinking:** imagining multiple answers
       vs.
     - **Convergent (Analytical) Thinking:** closing in on one answer

- **5 components of a Creative Person**
  1. Expertise: "Chance only favors the prepared mind."
  2. Imaginative Thinking Skills: detect patterns, make connections, see different perspectives
  3. Venturesome Personality: tolerate risk, and are highly open and perseverant
  4. Intrinsic Motivation: motivated by the challenge, not the payoff
  5. Creative Environment: surrounded by people who support and challenge each other and free of evaluation concerns

E. Brain Size

- +.40 correlation betw. brain size and intelligence
  1. kinda low…
  2. other potential causes= genes, nutrition, pollution
  3. 17% more synapses in the highly educated
  4. more gray matter in memory areas of brain

- Speed?
  1. processing speed correlated w/ IQ
  2. high intellect = quicker brain waves
     - core information processing ability
     - The faster something is processed, the more stuff is processed overall?

F. Assessing Intelligence

- An 20th century law in France required all children to attend school, but how to discern them from wide range of abilities?
- Assumption: intellectual development is the same for all children, but some develop faster than others
  - Bright: Performance typical of an older child
  - Dull: Performance typical of a younger child
- Birth of IQ
  - **IQ:** Intelligence Quotient developed by German psychologist William Stern (1912)
  - By definition average IQ score is 100
  - **Lewis Terman:** at Stanford, used Binet's test as a measure of intelligence
  - **Stanford Binet Intelligence Test**
- The Dark Side of the IQ Concept
  - ♣ US govt., with Terman's help, began evaluating immigrant's IQ
    - biased towards Anglo-Saxons; fueled racism against certain groups
    - e.g. 1924 immigration law: reduced immigration quotas for Southern & Eastern Europe to less than 1/5 of those for Northern & Western Europe
  - ♣ IQ determining method works ok for kids, but not so much for adults...
    - e.g. If a 40 year old scores as well as average 20 year old, is his/her IQ really 50?
      - Turn 50 with same intelligence: IQ now 40?
  - ♣ today's IQ score: specify how test taker performs compared to performance of other people at same age
    - average still 100

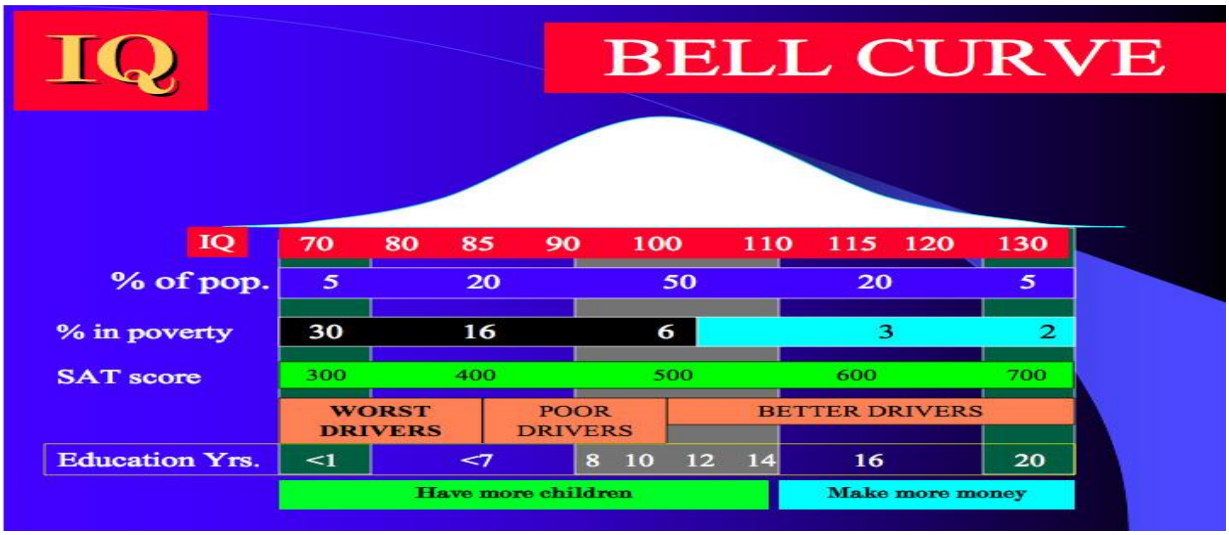
- **Modern Intelligence Testing: The WAIS**
  - **Wechsler Adult Intelligence Scale (WAIS):** most commonly used intelligence test today
    - also the **Wechsler Intelligence Scale for Children**
    - 14 subtests: "verbal" and "performance"
      - noticeable differences between scores may indicate learning disabilities, brain disorders
- **Test Construction**
  - 3 criteria for psychological tests to be widely accepted:
    - **1. Standardized**
      - score alone doesn't tell you much
        - **Standardization:** defining meaningful scores relative to pretested group
      - typically creates a **normal distribution/normal curve/ bell curve**
      - Stanford-Binet, WAIS, WISC, periodically **restandardized**
      - How do these samples compare to one another?
        - **Flynn Effect:** global improvements on intelligence scores over past 100 years
        - documented n 20 countries
      - **The Flynn Effect**
        - avg. +3 IQ points per decade
        - greatest gains in "general intelligence loaded" tests (e.g. Raven's Progressive Matrices)
          - small gains, or even decreases, in math, vocabulary, etc.
          - greatest gains at lower end of distribution
      - So why is the Flynn Effect Happening?
        - Short answer (so far): Who Knows?
          - Better education?
            - but why only modest gains in school topics
          - Familiarity with intelligence tests?
            - trend started before widespread testing
          - More stimulating environments, less childhood disease, smaller families (parental investment), modernization?
          - Better nutrition?

            Improvements most likely to affect lower SES, lower end of IQ curve
    - **2. Reliability**
      - How consistent are the results of the test?
        - **Test-Retest:** Does the person score about the same when repeating the test
        - **Split-Half:** When the test is split in two (e.g. odds & evens), does the person score about the same on both halves?
      - higher correlation between test-retest or split-half = higher reliability
      - Stanford-Binet, WAIS, WISC = high reliability
    - **3. validity**
      - Does the test measure what it's supposed to measure
        - Criterion validity: Does the test agree with some other criterion (independent measure) of performance?

❖ **What Does IQ Predict about Life?**

1. **High IQ positively correlated with:**
   - high GPA
   - high prestige jobs
   - less likely to be jailed
2. **Does not mean high IQ guarantees success, or that low IQ prevents it**
   1. Jobs
      - ❖ only 25% variation in success from IQ
      - ❖ motivation, education and other factors

❖ **Extremes in Intelligence**



1. **Mentally Disabled**
   i. IQ below 70
   ii. significant limitations in everyday life
   iii. must be present since childhood
   iv. **Retardation** is **not** the inability to learn and perform well…
      - ❖ Islands of Excellence: areas of cognition and functionality which excel above all others
        1. example: savants
      - ❖ Williams Syndrome: combination of mental disability and islands of excellence
        - o usually have extensive vocabulary
        - o lots of facts known
        - o cortical areas involving language thicker
        - o difficulty understanding the concepts of the facts they know

   v. Causes
      - o Genetics:
        - extra chromosome (Down Syndrome)
        - fragile X chromosome (repeating DNA over and over in X area)
      - o Environmental:
        - teratogens
        - premature birth
        - disease, lead/mercury poisoning

2. **The Gifted**

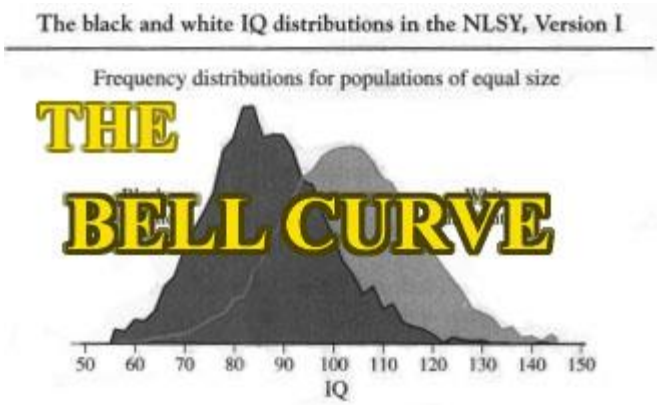
I. IQ above 130
II. Problems:
   a. social awkwardness
   b. solitary (usu. in area w/ fewer gifted students)
   c. perfectionism
   d. underachievement to "fit in" or create a challenge
III. Good News
   a. high reasoning, creative, memory ability

b. healthy and well adjusted
c. academically successful (mostly)

IV. Causes
a. Genetics
i. Gifted Boys: low levels of testosterone (compared to non)
ii. Gifted Girls: high levels of testosterone (compared to non)
iii. adoption studies: adopted child's IQ scores closer to real parent than adopted one
1. twins raised apart have identical scores too.
b. Environment
i. attention/touching/verbal games when young speeds up development
ii. malnutrition, sensory deprivation, social isolation slows development

❖ **Group Differences in Intelligence**

a. Why is there an IQ difference between races?
i. **The Bell Curve** by Richard Hernstien and Charles Murray
1. claims best predictor of income, job performance, wedlock pregnancy, and crime is IQ score.
2. fuels racism
a. see IQ as genetic difference between races



b. Environmental, not genetic
i. besides skin color, races remarkably similar genetically
ii. race isn't a neatly defined biological category
1. race seen as social construction or physical boundaries
a. Russia/Austria/Iceland= white?
b. mixed races
iii. Asian phenomenon
1. seen as best at math, but this is a recent finding
2. go to school 30% more days a year and study more
iv. Flynn Effect
1. IQ gap between 1930s to now same as black vs. white gap
a. suggests that environment a factor (better nutrition, education)
v. Black and White infants score equally well on infant IQ tests
vi. Different races had different high points in history
1. genes don't change as quickly as empires
c. Which Environmental Factors Matter?
i. socioeconomic status (SES): family income, parental education level and occupation etc.

❖ **Gender & Intelligence**

♣ like race, gender similarities far outnumber gender differences
• ...but typically we are more intrigued by differences
♣ average IQ equal across gender, but variability is different...

❖ **Gender Differences: The Female Advantage**

♣ better spellers
• by end of high school, 3-% of males spell better than average female
♣ better verbal fluency, memory for verbal info
• Germany's Test for Medical Studies: women consistently remember more facts from medical cases than men

- ♣ better nonverbal memory too
  - better at locating objects
  - superior memory for picture associations
- ♣ less likely to underachieve
  - less likely to be represented in special ed. classes
    - remedial reading classes: Boy: Girl ratio = 3:1
  - talk earlier, stutter less
- ♣ slightly better at rapid mathematical computation

❖ **Gender Differences: The Male Advantage**

- ♣ better at mathematical problem solving
  - average 45 points higher than females on SAT math
  - among those scoring extremely high on math SAT: male;female ratio = 13:1
    - boys in this group more likely to earn degrees in sciences, engineering
    - biggest advantage: spatial tasks

2. Bias in Intelligence Testing

- ♣ 2 types of bias in IQ test construction: 1. Do IQ tests rely on cultural knowledge? IS this where group differences come from?
- ♣ 2. Is the test less valid for some groups than others? (scientific/ statistical bias)
  - predictive validity for SAT, WAIS, etc.:
    - women = men
    - black = white
    - rich = poor
- ♣ Is it possible that IQ tests are based in their administration rather than their construction?
  - e.g. stereotype threat
    - What happens when we know that our group isn't supposed to be good at something?

G. Stereotype Threat

❖ **Stereotype Threat**

- ♣ Steele & Aronson (1995): cultural stereotypes "in the air", may affect performance of stigmatized
  - even without interacting with a biased person...
- ♣ **Steps from stereotypes to performance:**
  - 1. awareness of stereotype causes self-threat
  - 2. self-threat causes increased concern (anxiety) about confirming the stereotype
  - 3. concern causes poorer performance in domain
- ♣ Steele and Aronson (1995)
  - IVs: Black/White participants completed items from the verbal GRE
    - test framed as diagnostic/not diagnostic of innate IQ
  - DV: # of items correct on test
  - Results: Test Frame as not diagnostic, performance of both groups nearly identical. With the opposite, score gap is bigger.
- ♣ Not just IQ...other stereotypes too
- ♣ Spencer, Steele, & Quinn (1999): women and math
  - IVs: man/women complete math test that produces/does not produce gender differences
  - DV: performance on math test
  - Results: Same as IQ test, when stereotype is present, big gaps in performance

- **Summary of Stereotype Threat Effects**
  - Educational performances
    - African American college students
    - female math majors
    - SES and test performance
  - Non-Educational performances
    - Black & White Athletes
    - female MBAs during negotiation
    - males' ability to express emotion
  - Bottom line: Stereotype threat is a general psychological process that can affect ANY croup for whom negative stereotypes exist

- **What Can We Do About Stereotype Threat?**
  - Positive role models, limited testing environments, limited testing instructions, etc.
  - Or....know about it!
    - Johns, Schmader, & Martens (2005): Does knowing about sterotype threat make a difference?
      - IVs: men/women took a math test: problem solving (control)/ math test (gender differences, ST)/ teaching intervention
      - DV: math test performance