PSYCH MARCH EXAM 9-13 2015

CHAPTER 9— Language

LANGUAGE

language— system of symbols and rules to generate infinite possible meanings
- symbolic
- structure
- generativity

Psycholinguistics— study of psychological aspects of language

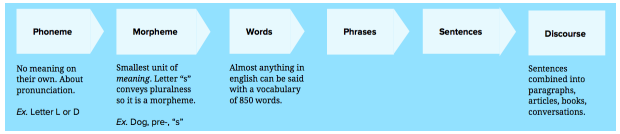
Components of Language
Grammar— rules of how **symbols** can be **combined**
Syntax— rules that govern **order** of words
Semanticity (semantics)— conveys meaning of
Generativity— finite symbols can be combined to an infinite number of messages
Displacement— Allows us to communicate things that aren't physically present (imaginary, past future)

Noam Chomsky's Transformation Grammar
- **Surface structure**— symbols used and their order (**syntax**—govern order of words)
- **Deep structure**— underlying meaning (**semantics—** meaning of words and sentences)

"The police must stop drinking after midnight"
- Has two deep structure meanings (ambiguous sentences)

Garden Path sentences—gramatically correct sentence that makes no sense

Human language hierarchy



- **Phoneme**— smallest unit of **speech sound** in a language that can signal a difference in meaning (dog vs log)
- **Morphemes—** smallest units of **meaning** in a language (combined phonemes), of which words are formed
- **Discourse—** sentences combined into paragraphs, articles, books, and conversations

Bottom-up processing— patterns (recognition) → symbols → meaning
- individual elements of a stimulus are analyzed and then combined to forma unified perception

Top-down processing— interpreting things based on expectations ("The bead Store" as the "The bread Store")

- sensory information is interpreted in light of existing knowledge, concepts, ideas, and expectations

Speech segmentation
- How do we learn when words end?
  - We learn **certain sequences** are more likely to be at the end of a words
  - **Context** also makes it easier to tell when words end

Pragmatics (Top-down)
- Knowledge of the **practical aspects** of using language
  - Using language requires more than vocabulary and grammar
  - You must know not only what people are saying but what they mean and want you to do (**social context**)
  - (Do you have the time?, Is Bill there?)
  - Sending an inappropriate email to a teacher using language you would intend for your friends

Humour

- **Phonological ambiguity:** confusion of sounds (knock knock jokes)
- **Lexical ambiguity:** double meaning (a kneads the dough)
- **Syntactic ambiguity:** confusion in structure (mean eating salmon vs man-eating salmon)
- **Semantic ambiguity:** meaning (call me a cab. Okay your a cab)

The Brain

- **Broca's Area—** Speech (word pronunciation and articulation)
- **Wernicke's Area—** Comprehension

* damage in one or more the areas results in **aphasia** (impairment in speech comprehension production)

- **Woman** have language in **both** hemispheres, men have it in the left
- Acquiring a first language: influences of **biology** (nature) and **environment** (nurture)
    - Some believe humans are born linguists, inheriting a biological readiness to recognize and produce sounds and structures of the language they are exposed to **(Chomsky)**

Biological Foundations

- If you acquire a language earlier in life, both languages use the **same** neural network
- If you learn a language later in life, it get its own neural network and you use a different part of the brain when you use that language
- Even if you learn early and fluently, the **inferior frontal gyrus** goes off when you use a second language, indicating it requires more effort

Language Learning

- Infants vocalize (cry, babble) from the first moments of life—even deaf infants
- Show **phoneme discrimination** by 2 months (PA vs BA)
- Babies are equally sensitive to phonemes from foreign languages—we're hard wired to acquire languages
- At 6-12 months, they can only discriminate between sounds in their native tongue

- **Language Acquisition Device (LAD)** - humans are born with an innate biological mechanism that contains general grammar rules (nouns, verbs)
    - Universal grammar becomes calibrated to the grammar and syntax of ones native tongue
    - A huge electrical "switchboard" that is calibrated to your language
- Is language learned as a result of imitation and reinforcement (Skinner's idea?)
    - Not really. Parents don't correct kids' grammar but the still learn it. The parents focus not on the surface meaning but look to the deeper meaning to understand children
    - **Language Acquisition Support System (LASS):** social environment that facilitates language learning. **Mutually** supportive with **LAD**

One Word Speaker

- 5-8 months of age—respond to parents words
- 10-20 months— talking begins
    - The early vocabulary is simple. The #1 word is —no
    - Vocab more likely to include objects they can manipulate (ball vs ceiling)
    - Difficult to tell what kids mean when they use single words, they tend to *under generalize*

The Two-Word Speaker

- Around 2 years old — telegraphic speech
- Vocabulary of several hundred words
- Speech shows proper organization:
  - "Throw ball" not "ball throw"
- By **2.5 years** child moves beyond 2 words, and sentences become more complex
- The **4-5** year old makes mistakes in tense (runned not ran, eated or ate)
  - Child now *overgeneralizes* rules
- Formal schooling takes over

Bilingualism

- Children mixing to languages when they lear is *not* an issue, they can discriminate by age 2

Bilingual children have:

- Superior cognitive processing
- Better understanding even before they read
- Better symbolic understanding of the nature of print
- Preform better on attention inhibition tasks (flexibility of tinkling)

Teaching immigrants both english *and* their native language in school causes better english fluency, academic performance and self esteem

Critical Periods

- The **white crowned sparrow** must be exposed to an adult song between day 7 and 60 or it will never be able to sing
- **Humans** must be exposed to language between 3 months to around puberty (Early teens) or they will not be able to learn to speak

Second language critical periods:

- You definitely learn the language better if you learn it earlier, but a biological critical period is debated

Linguistic Influences on Thinking

- **Linguistic relatively hypothesis—** language determines what we are **capable of thinking**
  - For examples: would a culture with fewer worlds for colours actually be less able to tell colours apart? Studies testing this theory are inconsistent.
- Language doesn't determine what you think, it influences it
- Chinese language uses ten-one, ten-two instead of eleven and twelve so children learn math easier in Asian countries

THINKING

- Thought and language are closely related. Telling people to talk out loud can be used to study thinking patterns (called **directed thinking**)

Imaginal Thought— **images** we hear, see or feel in our mind
Motoric Thought— mental representations of motor movements (i.e. throwing a ball)

Propositional thought —inner speech

- **Concepts**—basic units of **semantic** memory (categories in which we place: objects, abstractions, activities)
  - some concepts are **defined by prototypes** (most typical members of the class)
- **Propositions** are statements about concepts that may be true or false

Reasoning

Deductive reasoning— reasoning from the **top down** based on logic and premises, general principles to a conclusion

- If X, then Y
- Syllogism— Classical deductive argument
- Basis of formal mathematics and logic
- Conclusions are certain to be true *if* the premises are true

Inductive reasoning— reasoning from the **bottom up**

- Evaluating facts to **form general principles**
- Inductions are less certain - They form likelihoods, not certainties
- General principles or laws
- Leads to likelihood rather than certainty

Obstacles to Reasoning:

- Distraction from **irrelevant info**
- **Belief bias**— abandoning logical rules to **favour your opinions**
- **Emotions and framing**— same info presented (structured) in a different way (*50% success rate vs 50% failure rate*)

Problem Solving

- **Framing the problem**— looking at it the right way can make the answer seem obvious
- Testing solutions— **metal sets** are tendencies to stick with solutions that worked in the past and can cause inefficiencies

Problem Solving Schemas— Mental blueprints

Algorithms— procedures that auto generate correct solutions (mathematical and chemical formulas are algorithms)

Heuristics — **general problem solving** strategies that apply to certain classes of situations (shortcuts)

Means-ends analysis— identify difference between present state and goal and make chances to get to goal

Subgoal analysis— formulate i**ntermediate steps** to the solution, formulating **goals** (writing a 30 pg paper/ ring game)

Representativeness heuristic— infer how closely something fits into our prototype of a concept

- ex. Which coin toss sequence is more likely, HHHTTT or HTHTTH? They are equally likely, HTHTTH is just more representative if our heuristic of randomness

Availability heuristic— we think things that are easier to think of are more likely to happen

- This is why we think murder is more likely than suicide (its not)

Confirmation bias— looking for evidence to confirm your beliefs, widespread

- You can be sure you are wrong, but its hard to be sure you are right
- Best to look for evidence to *disprove* your hypothesis

Overconfidence — the tendency to overestimate one's correctness I'm factual knowledge, beliefs, and decisions, is another reason people do not challenge their beliefs

- Widespread

Framing Effect— the phrasing of the situation affects hot you interpret it, even if the information is identical

KNOWLEGE, EXPERTISE AND WISDOM

- **Schema —** mental framework (concepts, categories)

- **Scripts—** type of schema concerning sequence of events (going shopping, going to the movies)

Experts— rely on many schemas and knowing of when to apply them
- Schemas are enhanced by experience
- Once you become an expert you use long term memory instead of working memory, which is much more efficient

Wisdom— system of knowledge about the meaning and conduct of life
1. Rich factual knowledge about life (human nature, relationships, major life events)
2. Rich procedural knowledge about life (strategies, handling, conflict)
3. Understanding of lifespan contexts: life involves many contexts (family, friends, work)
4. Awareness of the relativism of vales and priorities (values and priorities differ against different cultures and societies)
5. The ability to recognize and manage uncertainty

Mental Imagery
- **Mental rotation —** asking people if two shapes are the same
- Mental images invokes spatial representation- if you imagine a map, it takes longer to mentally "go" from two places that are further apart
- Some argue that mental imagery is more like language: when you think of a brick wall it is represented by various linguistic concepts (brick, mortar, spread)
- Is mental imagery a perception?
    - Hemispatial neglect also affects your ability to form mental images
    - There is a lot of brain overlap between visual and mental perception

Metacognition— knowing you own cognitive abilities
- If you have **good** metacomprehension, you are good at knowing what you do and don't understand
- **Metamemory** is your knowledge of what you do and don't remember
- Metacognition is very important for a student
- Writing summaries of chapter helps you find out what you truly know and don't know

PRACTICE QUESTION:
- How many deep and surface structures does the phrase "smoking volcanos can be bad for your health" have?
    - 2 deep, 1 surface meaning

CHAPTER 10— Intelligence

INTELLIGENCE

Intelligence— ability to acquire knowledge, to reason affectively, and to deal adaptively with the environment

- Intelligence is a socially constructed concept. People that live in farming communities un different countries don't solve logical problems the same way was others but it doesn't mean they are less intelligent

Sir Francis Galton

- Believed that **intelligence was inherited** and that smart people were "more fit" for thinking than dumb people
- Measured reaction speed, hand strength, and sensory acuity to test intelligence
- Believed intelligence was **unitary** (based on mental quickness)
- Though skull size was related to intelligence
- Turned out to be totally **wrong** about intelligence but he did create interest in the field
- He also developed to the **correlation coefficient**

Alfred Binet

- French government asked him to find out why certain kids didn't learn in schools well
- Believed that **intelligence was a "collection of higher-order abilities"** meaning there would be no correlation between each of the abilities that make up intelligence
- Assumed that:
  - a) mental abilities develop with age
  - b) rate of development is constant
- Developed a standardized test measuring memory, math, vocabulary etc.
- Also correlated his test with the teachers' ratings of the children to make sure he results were meaningful (**criterion validity)**
- Developed a testing score called **"mental age"**

William Stern

- Built on Binet's idea of mental age and came up with **IQ**
- **IQ = mental age / actual age**
- Today's IQ tests are no longer based on mental age because:
  - it only really works with children
  - mental age of 80 isn't actually 2x better than a mental age of 40
- So Weshler comes up with deviation IQ based on z-score
- IQ's have a **mean of 100** and a **standard deviation of 15**

Binet's Legacy

Stanford-Binet	A prof at Stanford developed an IQ test for american culture. Initially verbal based, now includes Verbal Reasoning, Abstract/Visual Reasoning, Quantitative Reasoning, and Short-Term Memory.
Army Alpha	IQ test for army recruits
Army Beta	IQ test for army recruits that couldn't read
Lorge-Thorndike Intelligence Test & Otis-Lennon School Ability Test	Still used by school districts today
Wechsler Adult Intelligence Scale (WAIS-IV)	Measure verbal and non-verbal abilities, most popular intelligence tests in North America.
Wechsler Intelligence Scale for Children (WISC - IV)	• Separate scores for Verbal Comprehension, Perceptual Organization, Freedom from Distractibility, and Processing Speed • As kids mature, general intelligence remains stable but specific abilities become more differentiated

Correlation between IQ & Academics
- IQ and high school grades: **0.6**
- University grades: **0.3 - 0.5**
- US university entrance examinations: **0.5**
- Correlation high enough to justify using it but not just alone

Correlation between IQ & Other Things
- IQ and socioeconomic status: **0.4 - 0.7**
- IQ and achievement: **0.3 - 0.7**
- People with higher intelligence preform better on their jobs, especially during training
- IQ predicts job performance better than experience, specific abilities, or personality
- People high in intelligence show better recovery from brain injuries
- Higher childhood IQ = significantly greater survival to age 76

Test Concerns

Reliability— consistency of measurement
- **Test-retest reliability—** administer measure to same participants twice and correlate scores
- **Internal consistency—** all of the items of the test should measure the same thing
- **Inter judge reliability**— consistency of measurement when different people score the same test

Standardization— The development of **norms—** test scores from a large sample that represent particular age segments of the population

Validity—does the test measure what it is supposed to? = **accuracy**
- **Construct validity**— to what extent is the test actually measuring the thing of interest
- **Content validity**—do the test questions relate to all aspects of the thing being measured? (can't just test addition if you are testing math)
- **Criterion-related validity** — do scores on the particular test predict some present or future behaviour related to what its supposed to measure? (like what Binet did with the teachers ratings)

Culture fairness—is the test **culture-fair** or does it require knowledge only available to specific cultures? (i.e. asking an urban community farming related IQ questions)
- **Chitterling test** is bias to people in Southern US states

The Nature of Intelligence
Psychometric Approach
- Psychometrics— statistical study of psychological tests
  - What are the mental abilities o the human mind?
  - Is intelligence a general mental capacity, or several specific mental abilities?
  - Uses **factor analysis** to see it there are clusters of abilities that are correlated with each other (Ex. if reading, writing and speaking are correlated maybe there is an underlying skill that makes you good at all of them)

Spearman
- Modern Galton—believed intelligence is a based on one general skill
- Called this general skill the **g-factor**
- The g-factor is what most people call "intelligence" today
- G-factor predicts job success even better than measures of **specific ability tailored** to specific jobs

Thurstone
- Modern Binet— believed intelligence is more complex than just a g-factor

- Believed there are **7 independent primary mental abilities**
  - **Thurstone' 7**
    - Spacial ability
    - Verba; comprehension
    - Word fluency
    - Number facility
    - Perpetual speed
    - Rote memory (habitual reputation)
    - Reasoning
- Believed not all tests are necessarily correlated because they are measuring different primary mental abilities
- These types of measures are much more useful for education, because you can help children success in specific subjects

Cattel & Horn
- Believed there are two subtypes of the g-factor: crystallized and fluid intelligence
- **Crystallized intelligence (gc)—**ability to apply previous knowledge to current problems (use existing knowledge to current problems)
  - Vocab, info tests
  - Based on long term memory
- **Fluid intelligence (gf)**— ability to solve new problems
  - Reasoning, creative problem solving
  - Towers of hanoi, dot problem
  - Based on working
- We use more **fluid intelligence** when we're children and more **crystallized** when we're adults

Carroll
- The **Three Stratum Model:**
  - **Stratum III**— General intelligence (g)
  - **Stratum II**— Eight broad intellectual factors, in order of their correlation with g
    - Fluid, crystallized, memory/learning, visual, auditory, cognitive speediness processing speed
  - **Stratum I**— 70 highly specific cognitive abilities
    - These correlate on avg 0.3 with on another, indicating the influence of g

Cognitive Approach
- Attempt to explain why people vary in mental skill
- Explore specific info-processing that underlies intellect

Sternberg
- **Triarchic theory of intelligence**
  - **Metacomponents**— higher order process used to plan and regulate task performance (smart people spend more time framing problems and developing strategies)
  - **Performance components**— actual mental processes used to perform tasks (perception, memory, schema retrieval)
  - **Knowlege-acquisition components**— learn from experience, store info in memory, combine new insights with old info
- **Sternberg's Classes of Intelligence**
  - **Analytical intelligence—** academic style problem solving
  - **Practical intelligence**—skills to cope with everyday demands, manage oneself and others
  - **Creative intelligence**— skills needed to deal adaptively with novel problems
- * These classes also have an underlying g-factor but sometimes they are completely distinct

Beyond Mental Competencies

Gardner

Gardner's Multiple Intelligences
- Intelligence is made up of independent intelligences that relate to different adaptive demands

- **Linguistic intelligence—** the ability to use language well
- **Logical-mathematic intelligence** — ability to reason mathematically and logically
- **Visuospatial intelligence**— the ability to solve spatial problems
- **Musical intelligence—** the ability to perceive pitch and rhythm
- **Bodily-kinesthetic intelligence**—the ability to control body movements and skillfully manipulate objects
- **Interpersonal intelligence**—the ability to understand and relate well to others
- **Intrapersonal intelligence**— the ability to understand oneself
- **Naturalistic intelligence**—the ability to detect and understand phenomena in the natural world
- **Existential intelligence**—orientated ability to ponder question about the meaning of one's resistance, life, death

*The first three are measured by existing tests, the others are not. Einstein, Tiger Woods and a street-smart gang leader all exhibit adaptive forms of intelligence says Gardner.

Emotional Intelligence

- Percieving emotions
- Using emotions to facilitate thought
- Understanding emotions
- Managing emotions
- Measured by the Mayer-Salovey-Carurso Emotional Intelligence test

Components suggest that **emotionally intelligent people**:

- Form stronger emotional bonds with others
- Enjoy greater success in careers, marriage, childrearing
- Modulate their own emotions to avoid depression, anger anxiety
- Work more effectively toward long-term goals
- More effective coping strategies

NOTE: In class, Mike gave the example of a sea serpent underwater to explain the multifaceted nature of intelligence. You can only see some parts above the water so you can't properly tell if its one serpent? or tow? four?

Aptitude vs Achievement

Achievement testing:

- **Pro:** is usually a good predictor of future performance in a similar situation
- **Con:** it assumes that everyone has had the same opportunity to learn the material being tested

Aptitude testing:

- **Pro:** it is fairer
- **Con:** it is difficult to construct a test that is independent off a prior learning

Static vs Dynamic Testing

Static testing: completely standardizing test environment so everyone is responding to the same stimulus and all that is being tested is their ability

Dynamic testing: standard testing followed up by the examiner giving the subject feedback, and then measuring their ability to improve and respond to feedback

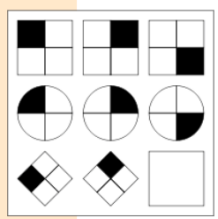
- Dynamic test score correlate more highly with education outcomes
- Very useful when testing people without equal educational opportunities, and people not accustomed to Western-style learning

The Flynn Effect

- The world's population is progressively scoring **higher and higher on intelligence tests**
- The nature of IQ allows its meaning to be preserved even when this happens because the means is always calibrated to be 100—IQ is a relative measure
- IQ's increase 3 points per decade in the west
- Why? Better nutrition? Technology? Complex learning environments?

Intelligence in Other Cultures

- Sternberg's **Theory of Successful Intelligence:** intelligence is what is required to meet adaptive demands of the culture
- **Ravens Progressive Matrices** — Non-verbal task where one must decipher rules of the pattern and pick the next figure
  - Good example of a non culture-specify measure of intelligence
- Other approach is to ***tailor culture specific*** questions for that culture



Raven's Progressive Matrices

Brain Size & Intelligence

- In some ways, **Einstein's brain was smaller** that the average person. His parietal lobes were 15% wider and extremely densely packed
- Netherlands had bigger brains that us
- Women's brains are larger
- Men have 6.5X more grey matter (related to general intelligence)
- Women have 10X more white matter (related to connectivity)
- So, it would appear men have better info processing and woman have better connectivity
- Woman's general intelligence tends to be more centralized (e.g. in frontal lobe)

Galton Revived: Intelligence and Neural Efficiency

- Modest relations have been shown between IQ and brain responses to visual and auditory stimuli
- Intelligent people use less glucose when solving problems, suggesting they work more efficiently
- Some believe differences in **brain plasticity**—brain's ability to change in response to environment- may be key
- There may be a critical period for growth of neural circuits that ends around age 16, the same time crystallized intelligence stabilizes

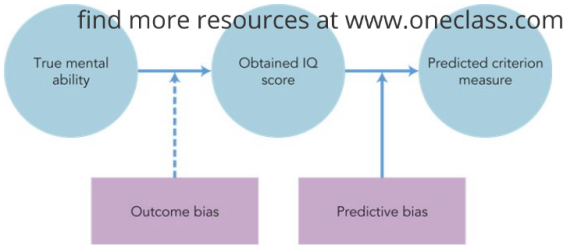
Genes, Environment & Intelligence

- **0.5 - 0.7** heritability coefficient for intelligence
- Genetic factors become even more important as we age
- 30%-50% variation oriented for by environment
- IQ scores correlate **0.4 with socioeconomic status** when a child is raised in:
  - When deprived children are adopted into middle/ upperclass homes, their IQ increases 10-12 points
- Environmental factors explain the **Flynn Effect** (better schooling, parenting, tech, etc.)

Early Childhood Intervention

- Children in early intervention programs have lower crime rates, need less welfare, better grades, and higher incomes

- These programs only work for disadvantaged children, they do little for children in middle/upper class homes who



Outcome bias
Extent that a test underestimates a person's true ability

Predictive bias - if test predicts criterion (e.g. school performance) for some groups but not others

already have these resources at home

Effective Schooling to Raise IQ
- Tech specific problem solving approaches, not general mental ability (Focus on specific skills, not g)
- Less repetition, more instruction about how to learn, critical thinking and application
- Tech memory enhancement strategies first rather than waiting for lower - level skills to be mastered

ETHNIC GROUP DIFFERENCES
- These are consistent differences in the intelligent test scores of members of different racial/national groups
- Asian > white > African-American in terms of average scores
- Asians have lower verbal scores but higher spatial/math scores

Explanation for Differences:
- Black people are less likely to be schooled in enriched environment's
- As more black people had access to school because of social changes over the last 25 years, the IQ gap dropped
- Family environmental facts account for 2/3 of the test score gap
- In reality, there is more variation within groups that between them

Outcome bias: Extent that a test underestimates a person's true ability

Predictive bias: if test predicts criterion (g.g. school performance) for some groups but not others

GENDER DIFFERENCES
- **Men are better at:**
  - Spatial tasks
  - Target directed skills (throwing)
  - Math reasoning
- **Women are better at:**
  - Perceptual speed
  - Verbal fluency
  - Math calculation precise manual tasks

Explanation:
- Different social experiences (boys catch balls when they grow up)
- Evolutionary: men hunt (visuospatial), women raise kids + make tools (verbal + precise manual abilities)
- Hormones affect brain organization
  - Woman 7 days before their period have more estrogen and perform better on precise motor tasks

Example: A woman should do better than a man at all but:

- A game of darts
- Tests of mathematical calculation
- Tests of fine motor skills
- Tests of perceptual speed
- Tests of verbal fluency

MENTAL DISABILITY

- 3-5% (10 millions of people) of the population is cognitively disabled
- (4) forms: mild, moderate, severe, profound
- **mild (85%)**: can attend school but difficult with reading, writing, memory, math
  - With social support, can function normally in society
- Variety of causes (genetic, biological, environmental)
  - 28% genetic abnormalities
  - Profound retardation is caused by generic accidents, so it doesn't run families
  - Mild retardation is much more likely to run in families
- Also could be caused by oxygen deprivation, disease/drugs during a pregnancy
- For 75%-80%, no clear biological cause can be identified

SAVANT SYNDROME

- The term "idiot savant" was coined by J.L Down, the guy that discovered Down Syndrome
- Idiot was an accepted category of mental retardation (IQ <25), although savants usually have higher IQ's that that
- Savants are people with mental disabilities that excel in a very narrow range of abilities
- Most common combination: blind and autistic with very higher musical skill
- May have multiple skills (usually just one)
- All seam to be right hemisphere based skills
- All linked with phenomenal (but narrow) memory
- Savants are very rare: less than 100 reports, only 25 living
- 6X more likely in males
- About half of savants have autism

Causes:

1. Eidetic Imaging:

- Perhaps photographic memory? Unlikely
- Some can make calculations beyond things they have seen
- Hight % are blind

2. Heredity

- Early studies suggest family relationship but recent data suggests "no"

3. Sensory Deprivation

- Sensory deprivation resulting develop autism promotes intense concentration
- 90% of autistic kids don't develop any exceptional skills so there must be something more

4. Reinforcement

- Social attention serves as reward for display of talent
- Unlikely: many crave attention without developing exceptional talent

5. Lateralization — Most likely cause

- Most savants have left hemisphere deficits
- Right hemisphere develops before the lefts in the womb
- If damage occurs while left is still developing (10 to 18th week) neurons in left die
- Right hemisphere "recruits" neural connections across the corpus callosum
- Effect can be triggered by testosterone (explains why it is more likely in males)

<u>Examples of Skills Some Savants Have:</u>

- Lightening fast math
- Musica

- Calendar calculations
- Art
- Mechanical or spatial abilities
- Time estimation
- Sensory discrimination
- ESP?

Pervasive Development Disorder
- Is a form of **Autism Spectrum Disorder**
- 1 in 50 births
- More common in males when IQ > 35
- Universal, in every society in the world
- Symptoms develop before 36 months

Other forms of Autism:
- Asperger's disorder—*Highest functioning*
- Rett's Disorder
- Childhood disintegrative disorder

Symptoms:
- Impaired social interactions:
  - No friends
  - No eye contact, even with mother
- Impaired communication
  - Limited or unusual speech
  - ***Echolalia*** — they repeat what you say
- Restricted behaviours
  - Like things "to stay the same"
  - Ritualistic behaviour, e.g.
    - Spinning around
    - Looking at hand for hours

Causes:
- NOT ~~vaccines :~~
  - Dr. Andrew Wakefield faked the data for the studies linking autism to vaccines
- NOT ~~poor parenting~~
- Has a **genetic** tag:
  - If one child has autism, risk increases by a factor of 10,000
- Brain Damage:
  - MRI scans show abnormally small cerebellum (responsible for fine tuned motor behaviours)
  - Only visible around age 3, brain is normal at birth
  - Cortex and white matter overload the cerebellum and destroy Purkinje cells

Treatment:
- Drugs not really effective
- Intense social stimulation and care are the best option
- Effectiveness of treatment depends on IQ loss
- The higher IQ is, the more stimulation can help

CHAPTER 11— Motivation + Emotion

Instinct Theory

Instinct — Inherited **predisposition** to **behave** in a specific and **predictable** way to a particular stimulus

- Genetic, universal within species and doesn't depend on learning
- Human instinct theories are questionable and often rely on a circular reasoning
- Today scientists examine hereditary contributions to motivation by looking at how much specific behaviours are hereditary

Homeostasis and Drive Theory

Homeostasis — state of internal physiological equilibrium that the body strives to **maintain**

- Homeostasis requires a sensory mechanism to detect environmental changes, a response system and a control centre to activate that response

Drive Theory (Clark Hull)— distributions to homeostasis produce drives that **motivate** the organism to restore (hunger, thirst)

- Proposed hat reducing drives is the ultimate goal of motivated behaviour
- **Problem with the theory**: people often do things that ***increase*** **arousal** like diet or watch horror movies

Incentive and Expectancy Theories

- **Drives** are **internal push factors**, **incentives** are **environmental pull factors**
- Hull Believed incentives are things that reduce biological drives (Food reduces hunger) but nowadays it is believed that stimuli can be incentives in absence of biological drive, for example:
  - Eating desert even if you're full
  - People take drugs to make them selves feel good, not to avoid withdrawal
- **Extrinsic motivation**— doing something for reward/avoid punishment
- **Intrinsic motivation**— doing something for its own sake
  - **Over-justification hypothesis**— giving extrinsic motivation for something you already intrinsically value makes you want to do it less. Once you stop being rewarded for it, you no longer want to do it

Expectancy x value theory:
(AKA—Expectancy theory)

- Goal directed behaviour is determined by:
  - Strength of expectation that behaviour will lead to goal (Expectancy)
  - Value person places on goal (Value)
  - ***Motivation = expectancy x value***
  - If you have low expectancy or low value, you wont be motivated

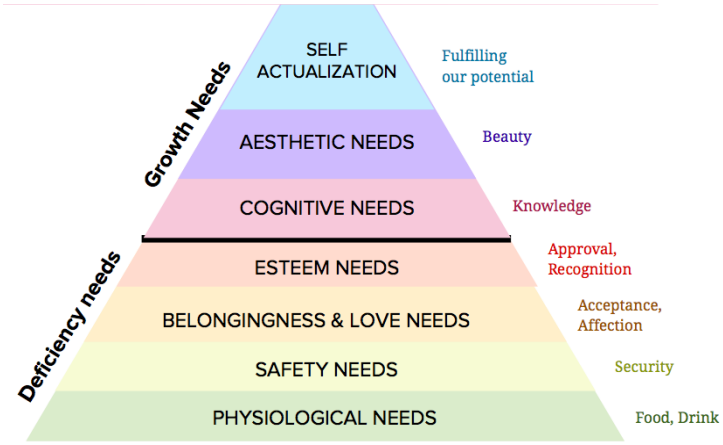
Psychodynamic Theories

- To Freud, unconscious impulses struggling for release motivate our behaviours
- His theories prompted research into self-esteem and relatedness

Humanistic Theories

Maslow's Need Hierarchy — once the bottom needs are satisfied, then we move up to the next need

Critics say: Why do prisoners of war torture instead of betray their country? Why do women starve themselves to be thin?



Critics say: Why do prisoners of war endure torture instead of betray their county? Why do women starve themselves to be thin?

More Humanistic Theories

Self-Determination theory— three (3) fundamental needs:

- **Competence**— need to **master** new challenges & perfect skills
- **Autonomy**— people **experience** their **actions** out of free **choice**
- **Relatedness**— desire to for, **meaningful bonds** with others
  - Autonomy and relatedness are complementary, not contradictory. People feel freer to be themselves around those they are connected to
  - Workers given freedom to develop their own plans feel more bond with their company

HUNGER

Metabolism— body's rate of **energy utilization**

- Your body regulates this **short-term, (hunger)** and **long-term** (how much fat you have)
- Hunger is not necessarily linked with intermediate energy needs. Homeostatic mechanisms are designed to prevent you from running low in the first place

Signals that start/end meals:

- Hunger pangs and fullness can be experienced even if all the nerves from the stomach to the braun are cut, or even if the stomach is removed
  - Fullness is caused both by physical signals and chemical signals
- **Glucose** is the body's main source of useable fuel
- Hypothalamus and liver monitor glucose levels
- Intestines release **peptides** to help terminate meal
- **CCK (cholecystokinin),** for example, makes you feel full

Signals that Regulate Appetite and Weight

- Fat secretes **leptin**, which decreases appetite (the fatter we are, the less appetite we have)
- **Leptin** would make you feel full sooner by **increasing** you **sensitivity** to your body's chemical/physical "fullness" signals
- Genetic problems with leptin production or reception can cause obesity

Brain Mechanisms

- The **lateral hypothalamus (LH)** appeared to be on the hunger-on centre
- Stimulating it makes a rat hungry, destroying it makes the rat starve itself
- The **ventromedial hypothalamus (VMH)** appeared to be the hunger-off centre
- ***But*** it turned out that many brain nerves funnel through the hypothalamus, so it was probably something else
- **Paraventricular nucleus**— cluster of neurons within hypothalamus
  - Secretes neuropeptide Y, which makes us very hungry

- Leptin inhibits this, so when we are dieting we loose leptin and feel very hungry

Psychological Aspects of Hunger

- Food is positively reinforced by taste and negatively reinforced by hunger suppression
- Women think they are fatter thank they should be, men don't as much
- Women think men want skinnier bodies than they actually do, men think women want bulkier bodies than they do
- Women restrict eating to restore self esteem

Cultural and Environmental Factors

- Peoples eating is sensitive to portion size, # of people present and amount others eat
- People eat more if there is more variety (buffets)
- Smells, sights and sounds classically conditioned with foods we like can make us hungry even if we already ate

OBESITY

- Obesity is not caused by lack of willpower or emotional disturbances
  - Many obese people react more strongly to food cues (Schachter, 1968) Evidence for this is mixed
- Genetics accounts for 40%-70% of variation in body mass
  - Obesity is linked to a combined effect of genes (not one gene)
- Environment matters too (USA has more obesity)
  - Abundance of cheap fatty food
  - Cultural emphasis on: getting the best vale" (super-sizing)
  - Technology that decreases physical physical activity
- Pima Indians of Arizona were genetically predisposed to obesity that there cultural life style prevented. However after WWII, they became exposed to American food and now they have a very high obesity rate

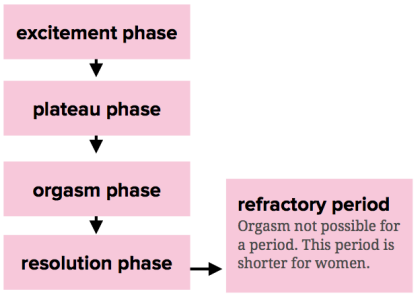
DIETING

- Being fat primes you to stay fat
  - Obese people have more insulin which increases conversion of glucose to fat
  - Dieting decreases your metabolism because you have less energy to spend
- We don't have good estimates of weight-loss success rates because so many people just do it on their own with our clinics and are never heard from
- It is important to avoid cues that make you hungry
- Eating a small mount of food before a meal makes you ***hungrier*** (appetizer)
  - It increases variety which increases consumption
  - Stimulates **insulin** secretion which **increases** hunger
- Weight loss through **exercise** is regained much slower than weight lost through **dieting**
- Exercising makes your metabolism better because all you loose is fat (not lean body mass too like with dieting)

SEXUAL MOTIVATION

- Peer pressure is more important than sexual gratification (because you want too—enjoyment) when predicting who will have sex earliest
- Men have sex for the first time 1 or 2 years earlier than women
- 10-20% of women find sex not pleasurable
- Non-married cohabiting partners have the most sex of all groups

Sexual Response cycle



- (4) stage cycle when sexually aroused
- **Excitement phase:**
  - Arousal builds rapidly
  - Blood flow increases to sexual organs
  - (vasocongestion)
- **Plateau phase:**
  - respiration/heart rate, vasocongestion, and muscle tension continue to build until there is enough muscle tension to orgasm
- **Orgasm phase:**
  - rhythmic motion initiates orgasm
- **Resolution phase:**
  - refractory period
  - males are temporarily unable to orgasm again
  - females can have multiple

Hormonal Influences

- Hypothalamus— controls pituitary gland, which regulates secretion of hormone ***gonadotrophin*** into the blood stream
- Gonadotrophin affect the rate of **gonads** (testes in males, ovaries in females) secrete ***androgens****,* testosterone (male) and estrogen (female)
- * Both males and females produce both hormones
- Sex hormones direct development of male/female characteristics in womb (**organizational effects**)
- Males constantly release hormones (always sexually receptive), women follow estrus cycle (only receptive during high periods)
- Contrary to popular belief, short term hormonal fluctuations have little effect on sex drive
- Androgens are primary influences of sexual desire (in both men and women)
  - Removing androgens produces gradual loss of sexual desire, desire does not go up and down like a **yoyo** with regular changes
- Violent pornography increases aggression
- Research shows that giving men info about sexual assault reduces rape myths
- Sexual orientation is a combination of **genetics** and environment— 50% concordance with identical twins
  - The closer the genetic relatedness, the higher concordance rates for sexual orientation

ACHIEVEMENT MOTIVATION

- **Motivation for success**— outperforming others, mastery goals
- **Fear of Failure**— performance avoidance goals

* **Having both is NOT better than just being motivated for success—**stress is bad!

High-need achievers perform **best** when:

- doing challenging/important tasks
- Perception of personal responsibility
- Perception of possibility of not succeeding
- Opportunity for performance feedback

- **High achievers** choose takes with medium difficulty because outcome is uncertain
- **People with fear of failure** choose tasks where success is either assured or not expected at all
- **High-need for achievement** develops when parents encourage achievement but no not punish failure

Motivational Conflict

- **Approach-approach conflict—**picking between two desirable things
- **Avoidance-avoidance conflict**—two undesirable choices
- **Approach-avoidance conflict—** attracted and repelled by the same thing

- Avoidance tendency increases faster than approach as we approach the goal
- **Delay counting**— value of a reward decreases the longer you have to wait for it

NONVERBAL BEHAVIOUR

Paralanguage:

- Non-content aspects of speech
- Tone of voice
- Speed
- Amplitude
- Rise/fall time
- Hesitations and pauses

Interpersonal Distance:

- **Halls Interaction Zones—** the distance we use in interaction conveys the social significance of the people interacting
  - Intimate zone: touch—0.5m (close friends, lovers)
  - Personal zone: 0.5—1.25m (talking to acquaintances, strangers)
  - Social zone: 1.25—3.5m (strangers in a mall)
  - Public zone: 3.5—7.5m (public speaking)
    - Mediterranean and Middle Eastern cultures prefer closer distances

Eye Contact:

- Typical conversation: 60-70% gazing
- 30% mutual eye contact
- 1-3 second eye contact at a time
- Eye contact longer than 7 seconds is a stare

Body Movement/position

- **Kinesics**—movement, posture, etc
- **Gestures**—hand signals

Ekman & Friesan (1969)—***types of gestures***

- **Emblems—** meaningful substitutes for language (huge cultural differences)
- **Illustrators**—accompany speech, accent a point, etc
- **Regulators**—maintain or change speakers

Facial Expressions:

- Typically emotions
- May reflex other cognitive states (e.g. comprehension)

LYING

- Intentional falsehoods
- Eye contact is a good indicator of lying
- Women are better at lying and at detecting it
- **Ekman:** non-verbal cues that escape attempts to conceal lies
  - Can detect lying with "**micro-expressions**"
  - Ekman's study: its easier to detect deception in the body than in the face. Its easier to control your face than your body
- Avg ability to detect deception in 55%
- Are customs officials or police officers better at detecting lying? No. Lying in kids? Still no.

EMOTION

Orientating responses or "Taxes"

- Overall musculature response toward (positive taxes) or away way from (negative taxes) a stimulus
- Examples: Moths have a positive phototaxis (response to light) moths, cockroaches have a negative phototaxis

Autonomic Nervous System

Sympathetic nervous system: gears up for action
- Accelerated heart rate
- Inhibition of peristalsis
- Vasoconstriction

vs

Parasympathetic nervous system: conserves energy
- Decelerated heart rate
- Stimulation of peristalsis
- Vasodilation

- These are **antagonistic**— They have **rebound effect**. IF you activate one, you activate the other.

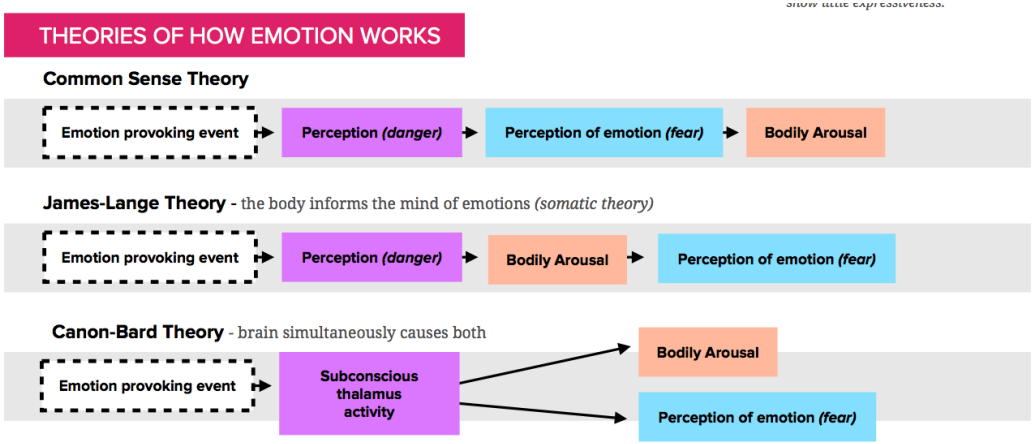
- Some emotions have distinct arousal patterns, others don't (jealousy, tenderness)
- Anger and feat both speed up heart rate but where blood gets pumped differs
  - **Anger causes** blood to go to hands and feet, wheres **fear reduces** blood there
  - Polygraph tests try to use this but they have very high rates of false positives

Pupil Dilation

Hess & Polt (1960)
- Showed people interesting sides and recored their eyes
- The more interesting the life, the wider your pupils dilate
- Men found women more attractive if the woman's pupils were retouched to be larger
  - Maybe bays the men interest it as a sign that the women are interested

RELATIONSHIP BETWEEN PLEASURE AND AROUSAL
- Stimulus intensity and novelty cause fear: why do we like new and intense things
- **Berlyne's set point theory:** everyone has a set point of neutral arousal
  - If we raise or lower arousal a little bit, we like it (relaxation or excitement)
  - But it we raise or lower it too much, we don't like it (boredom or stress)

Darwin: expression **intensifies** experience
Freud: expression **reduces** experiences
* In a study by Toutangeau & Ellsworth, highly aroused subjects show little expressiveness



Lzard: Facial Feedback Hypothesis
- Facial expressions cause emotions
- Number of studies indicate that the adoption of the appropriate expression yields that emotion

Liad: subjects asked to smile or frown
- Self reported happiness is higher in the group thats smiling
- Stimuli are seen as funnier for smile

Ekman:
Low heart rate emotions:
- Happiness
- Disgust
- Surprise

High heart rate emotions:
- Anger (high skin temperature)
- Fear or sadness (low skin temperature)

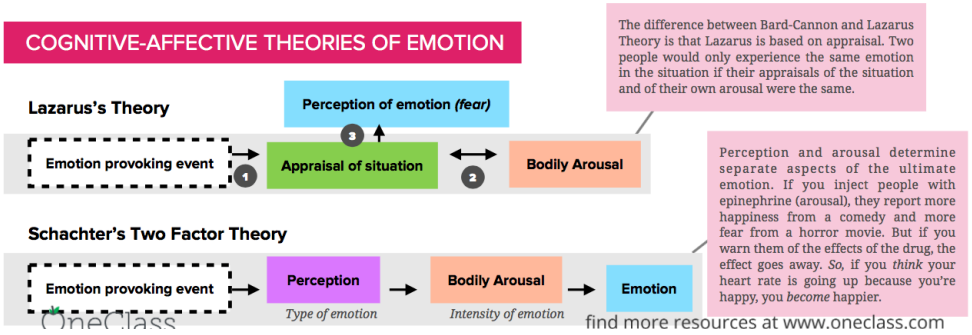
Is movement of facial muscles really necessary to experience emotion?

- Patient with bilateral facial paralysis did report feeling emotional
- However after botox (when facial expressions are inhibited), there is less activity in the emotional parts of the brain (amydala)
- Subjects report higher happiness when told to hold a pencil in their mouth, stimulating smiling

Whenever John sees June, his heart starts to race, his breaching rate goes up, and his pupils dilate. Whats being activated?

- Sympathetic nervous system
-

Cognitive-Effective Theories of Emotion



Dutton + Aron (1974): Men who see a women while on a scary bridge find the woman more attractive. The misattribute the arousal of the bridge as the arousal from the woman.

Excitation Transfer— Residual arousal from one event is transferred to another situation

- Working out at the gym will make you feel more emotional
- People rate others more attractive after a roller coaster than before

The Amygdala

- Evaluates the emotional significance of sensory input
- Generates **immediate reaction**
- Removal of amygdala results in **psychic blindness**
  - Objects lose psychological significance
  - Fearful stimuli no longer cause fear
  - Subject no longer desires food or sex
  - Can no longer identify facial expressions
- Hypothalamus, amygdala, hippocampus + prefrontal cortex are also all involved in emotion
- **Dual system:** amygdala responds first with emotion, then cortex analysis situation

Lateralization of Emotion

- **Right hemisphere** plays a **greater role** than **left** in emotion
- However, damage to the left frontal lobe can be just as bad for emotional perception
- You can see emotions more + earlier in the ***left* side** of the face (because the right side controls it)
- Left hemisphere **activates positive emotions**, right activates negative ones
- Damage to left depression, damage to right indifference/ euphoria

NATURE ANDFUNCTIONS OF EMOTION

- Lazarus: There is always a link between motives and emotions
- Motivations are internal stimuli to direct behaviour
- Emotions are responses to events that relate to important goals
- Emotions have adaptive value: rousing us to action, helping us communicate, eliciting empathy and help

Features of Emotion (Averill)

- Response to external/internal stimuli
- Response of cognitive appraisal of this stimuli

- Body responds physiologically to appraisal
- Include behaviour tendencies
- Is an ongoing dynamic process

THE BEHAVIOURAL CONPONENT

Empathy— other's emotional displays evoke similar emotions in us

Expressive behaviours—emotional displays from which we can infer other;s emotions

- University students responded to angry/happy faces with subtle facial responses within a third of a second

Display rules—norms indicating when and how emotions are expressed

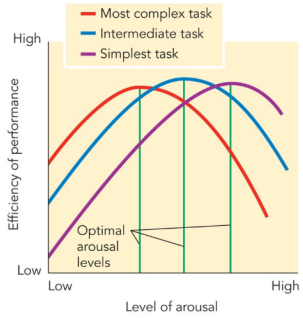
- Thumb's up in Greece means fuck you
- Spitting on someone in Masai tribe is a compliment
- Japanese cultures have more subdued emotions than Western cultures
- In Utku Inuit culture, anger is absent (except to dogs and exiled people)

Emotional Expressions

- Darwin argued that emotional displays are products of evolution (both humans and wolves show their teeth when angry)
- There is evidence of **fundamental emotional patterns**
  - Expressions of rage/terror are similar across cultures
  - The expression of swimming athletes at the Olympics are universal
  - In general, there is 40-70% agreement among cultures regarding emotions
  - Children blind from birth express these basic emotions the same as sighted children
  - Still, some cultures express some emotions differently
- Women are better at reading emotions (maybe because of women's evolutionary role, or cultural encouragement)

Performance and Arousal

- There is an optional level of arousal, you can either have too much or too little
- The optimal level depends on the complexity of the task. More complex tasks require less arousal



If an individual was completely unable to experience arousal, but still reported an experience of emotion, his would argue strongly **against** which theory of emotion?

- James-Lange

CHAPTER 12—Development

Nature vs **Nurture:**

- Nature picks the maximum (how tall you can be, nature decides what you end up with (proper nourishment)

Critical vs **Sensitive periods**

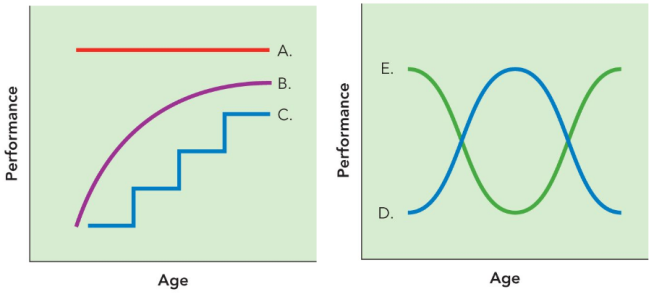
- Critical periods are age ranges where certain experiences must occur for proper development (experiencing language).
- Sensitive periods rather, rather are *optimal* periods for certain experiences

Stage (discontinuous) vs **Continuous Development**

- Stages are discontinuous and separated by rapid growth (like caterpillar to butterfly). Continuous development is a smooth gradual change (like a growing tree)

Stability vs **Change**

- Do our characteristics remain consistent as we age?



A) **No change**— present at birth and remains high (sound discrimination, figure ground perception)
B) **Continuous change**— develops over life (intelligence)
C) **Stages**— motor development (rolling, crawling, standing, walking)
D) **Inverter U-shaped**—peaks mid-life and goes back down (visual acuity over life, separation anxiety)
E) **U-shaped function**—high at birth, disappears midlife but later returns (newborns turing toward off-centerer sound, stepping with support)

Normative Testing

- Looking for typical sequence of change, look for consistency. Uses **cross-sectional** methodology: take a bunch of people of different ages and test them at once, then compare how different age groups performed.

vs.

Individual Testing

- The consistency is not there focus on the individual. Uses **longitudinal** methodology: takes the *same* group as it grows older.
- **Sequential design** is when you simultaneously follow several age groups as they grow older

PARENTAL DEVOLPMENT

Germinal stage	first 2 weeks, called a **zygote** (fertilized egg)
Embryonic stage	2nd to 8th week after conception, called an **embryo** now
Fetal stage	8 weeks on, called fetus
Age of viability	28 weeks, can survive out of womb

Placenta— membranes that allow nutrients to pass from mothers blood to umbilical chord

Umbilical chord— contains blood vessels that carry these nutrients and oxygen to the embryo, and waste products back from the embryo to the mother

Sex determination
- Egg always has **X** chromosome, seem can have **X** or **Y**
- **Y** chromosome contains **TDF** (t**estis determining factor**) gene that triggers male development
- At 6 to 8 weeks, TDF causes testes to develop, which secrete androgens (testosterone)
- If androgens aren't secreted, female development happens instead
- Prenatal critical period— an inherent female pattern of development

Environmental Influences
- During the end of the pregnancy baby moves when they hear a loud sound
- **Fetuses learn:** they stop responding to repeated sounds, indicating that they have short term memory
- Newborns prefer the sounds they get to know in lasts moths of pregnancy
- Fetuses learn about ours from mother's diet—if mom likes anise-flavoured foods, so will they

Teratogens— environmental agents that cause abnormal prenatal development

Fetal Alcohol syndrome—facial abnormalities and small, malformed brains. IQ and motor imprints
- a third to a haled of alcoholic mother;s kids have FAS
- No amount of exposure to alcohol is safe for fetus

STDS— 25% of mothers with syphilis have stillborns, 25% of mothers with HIV give it to their kids

Smoking— increases the risk of miscarriage, premature birth and low birth weight

Heroin/cocaine— causes addiction for the baby, loss of cognitive function, arousal regulation, attention

NEWBORN DEVELOPMENT

Newborn Learning
- Can distinguish mother from stranger within hours of birth
- Prefer looking at novel stimuli
- Prefer hearing novel stimuli, will turn away from habituated sounds
- Can learn through classical, operant or observational

Brain development
- 100-200 billion neurones at birth
- No more neurons produced after the second trimester
- Increase in brain weight over time due to glial cells & myelination, not neurons
- Number of synapses increases rapidly
- Cortical development "mirrors" the emergence of abilities
    - Different parts of the brain develop at different times
    - Frontal lobe develops last

Taste & Smell
- Very much like adult
- Suck faster for sweet liquids
- Reject salty liquids
- Pleased expression for bananas
- Frown for rotten eggs
    - These preferences must be hardwired

Hearning

- Prefer complex sounds to monotone ones
- Especially sensitive to sounds in range of the human voice
- Prefer voice most similar to mom's
- *First Few Days:* turn head towards sounds, discriminate sound sequences
- **Sound localization**—will turn their heads towards an off centre sound. this behaviour follows a u-shaped function- it disappears in the second month and returns in 4/5th (reason unclear)
- Another u-shaped function: new borns can discriminate between foreign language phonemes at birth, but they loose this when they learn their native tongue. However, they can relearn a foreign language late in life
- Young infants also appear to perceive music as adults do

Visual system

- Infants prefer complex patterns, human faces to solid colours
- **1st day:**
  - Visual tracking: turn head to keep object in view (Especially moms face)
  - Visual accommodation not well developed, but can focus 18-33cm away
  - Visual acuity about 20/600 (thats terrible)
  - Improves steadily over first eight months
- **3-4 months:**
  - Some depth perception
  - Binocular vision only, can not judge distance with one eye covered (monocular depth cues are learned)
  - Pattern perception organized by Gestalt principles of closure and proximity, other come later
- **4-5 moths:** can reach for nearby toys
- **6-7 months:** ability to accurately grasp
- **9-10 months:** avoid the deep end of visual cliff

Motor development

- "Bundle of reflexes" at birth
- **Babinski reflex—** toes fan when sole of foot is toughed
- **Grasping** —fingers clench object in hand
- **Rooting**— head turns towards objects on checks
- **Moro reflex**—if theres a sudden head shift, baby's arms swing up
  - Most disappear as child grows older (babinski is gone by 8 months)

Motor development is:

- **Cephalocaudal—** progresses from head to feet
- **Proximodistal**— proceeds from centre to extremities

Environmental and Cultural Influences

- Rats raised in enriched environments have heavier brains, larger neurons, more synapses, and more neurotransmitters that enhance learning
- Physical touch affects growth—massaging premature babies speeds up weight gain and neurological development
- Experience and culture affect what age you will walk

PIAGET + COGNITIVE DEVELOPMENT

- Most cited theorist after Freud
- Observed his own kids
- Found that kids don't think the same way as adults
- Observed **four stages of cognitive development**

Assimilation— new experiences are incorporated into existing schemas

- Young infant sees new object, they will try to suck it
- Child sees horse for the first time: "these are big doggies"

Accommodation—new experiences cause existing schemas to change

- Some things cant be sucked

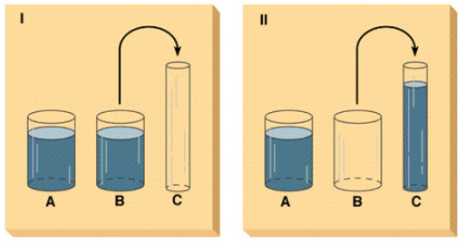
- Big doggies does't do big dog things

(4) Stages of Cognitive Development

1. Sensorimotor stage (0-2yrs)
- Understand world entirely through **sensory and motor experience**
- Coordination of actives not present until 5 months
- No self concept
- **Object permeance**—understanding that objects continue to exist even when they cannot be seen. Happens at 8 months
- **Pseudo-imitation** is present—child can imitate but only if the action was just produced (11-12 months)
- Symbolic/representational thought emerges towards end

2. Pre-operational stage (2-7 yrs)
- **Symbolic thinking:** images and words to represent objects
- Don't understand **conversation—** the idea that quantity of something (ex. a liquid) is the same regardless if what contained it is put in
- Thinking displays **egocentrism** (can't view the world from other people's perspective), **irreversibility** (can't imagine reversing an action), and **contraption** (focus on one aspect of a situation)

Conversation— If you poor the water from B into C and ask a pre-operational child which container has more, they'll say C has more water then A



3. Concentrate Operational Stage (7-11 yrs)
- Can think logically about concentrate events/objects, but thinking is still tied to the real world
- Trouble thinking abstractly
- Grasp concepts of conversation, reversibility (7rs) and serial ordering (put these in order of height)
- Rigid thinking

4. Formal Operational Stage (12 on)
- Adolescent can think more logically, abstractly, and flexibly
- Can form hypotheses and test them systematically
- If you ask them to play a game of 20 questions, they start by asking general questions (is it a person?). Younger kids just guess specific things right away (is it Elmo?)
- Thinking is no longer rigid—can use reversible thinking

CRITICISM OF PIAGET'S STAGES

Universality
- The general stages occur cross-culturally, although Piaget equated cognitive development with scientific-logical thinking, and not all cultures do that

Object Permeance (Early understanding of the physical world)
- Some surest infant have earlier understanding of object permeance that Piaget suggest. According to the **violation of expectancy method**, infants stare longer if they ares surprised by something. Spelke did studies with moving rods behind blocks to show 4 month olds have some understanding of object permeance, because they start longer when the rod doesn't come back on the other side
- Infants should pay more attention to (or be surprised by) events that violate there understanding (expectations) of the world

Zone of Proximal Development

- There is a difference between what a child can do independently and with assistance from adults.
- We can move a child's development forward (within the limit of the zone)

Egocentrism

- Children can show non-egocentrism if its a familiar scene. Piaget's tests used unfamiliar scenes

False Beliefs Test

1. Child and Teddy (a teddy bear) examine a green and red box. Candy is in the red box, nothing in the green.
2. Teddy leaves the room.
3. Child and the experimenter move the candy to the green box.
4. Teddy comes back. Child is asked "where will teddy look for the candy?"

3-4yr olds say: "green box". They can't see the world from Teddy's perspective.
4-5yr olds say: "red box". They are exhibiting non-egocentrism. *This is troubling for Piaget's theory.*

Theory of mind—ability to understand other people's mental states

- Piaget said that children under 7 have trouble understanding what people are thinking
- But by age 4, children can tell other people have different info than them
- Children 3-7 can lie convincingly: parents, strangers trained officials can't detect the lies
    - Children can tell more elaborate is but they become more detectable
- 3 months old have "**joint-attention**" — if you are looking at them and then switch to an object, they look at the object too
- 1.5-2 years: child will only attach name to an objet if the adult is looking at it as they say the name
- By age 4, children only attach words to objects if adult appears certain about the objects name

SOCIAL-EMOTIONAL + PERSONALITY DEVELOPMENT

Temperament

Temperament—General style of reacting emotionally and behaviourally to the environment

- 2 year olds that were highly shy/unshy continued being shy/unshy 7 yrs olds
- Shy 3 year olds had fewer adult relationships, undercontroled 3 year olds were more antisocial

Erikson's Psychosocial Theory

- Personality develops through 8 major psychosocial stages involving a different "crisis"

Age	Crisis	Description
0-1	Basic trust *vs* Basic mistrust	Depending on how well our needs are met (how much love and attention we get), we trust or distrust the world
1-2	Autonomy *vs* Shame and doubt	If parents restrict and make harsh demands, children develop shame and doubt their abilities
3-5	Initiative *vs* Guilt	If they are allowed freedom to explore, they develop a sense of initiative. If held back or punished, they develop guilt about their curiosity.
6-12	Industry *vs* Inferiority	Children who experience pride and encouragement develop industry: strive to achieve. Children with repeated failure and lack of praised develop inferiority.
12-20	Identity *vs* Role confusion	*Etc etc. The names of the stages are pretty clear. Focus more on the theory in an abstract sense rather than the details of each specific stage*
20-40	Intimacy *vs* Isolation	
40-65	Generatively *vs* Stagnation	

ATTACHMENT

Attachment—strong emotional bond between children and caregivers. In humans, it involves a ***sensitive*** period

Imprinting—biologically primed form of attachment
- Birds follow whoever they see when they hatch
- Occurs in birds, and a few mammals
- Involves critical period

Cupboard theory (Freud)—attachment to mom is a side-effect of her ability to give food
- In reality, contact is more important than fostering attachment than nourishing
- Premature babies develop faster if they are touched and held
- Infant monkeys reared from birth with a cloth covered derogate clung to it as they would a real mother, and they preferred to remain in contact with the cloth mother even though the wire mother satisfied nutritional needs
-
    - Example: If you could predict a monkey would rather have a cold wire-frame "mother" that gives if food, than a warm soft comforting mother that doesn't give it food, are are following which theory?
        - Cupboard theory (Freud's theory)

Attachment Phases

1. **Indiscriminate attachment**—Newborns cry, smile to everyone and this evokes caregiving from adults
2. **Discriminate attachment**—At 3 months infants direct attachment to familiar caregivers
3. **Specific attachment behaviour—**7-8 months, develop first meaningful attachment. Caregivers become a secure base

Strange Situation Test (SST)

- A standardized procedure for determining infant attachment
- Infant plays with mom in a room. Then a stranger (the experimenter) enters there room and mom leaves. In a few minutes, mom comes back. The way the infant reacts to her return determines the child's **attachment style.**

Attachment Styles

Securely attached infants—reacts positively to strangers, distressed when mom leaves, greets her when she returns (50-75%)

Anxious resistant infants—fearful of stranger when mom's there, demand attention, highly distressed when she leaves, not soothed when she returns

Anxious avoidant infants—few signs of attachment, self cry when mom leaves, don't seek contact when she returns

* Last 2 result in social impairment in the long run

Attachment is a predictive characteristic. *It describes you later in life too.*
- Avoidant subjects report never having been in love at 18, secure subjects report enduring relationships
- Children with higher levels of avoidance have less sexual satisfaction later in life

Attachment Deprivation

- Infancy is a sensitive period, not critical for attachment development
- Prolonged attachment deprivation creates risks but when placed in a nurturing environment at a young enough age,

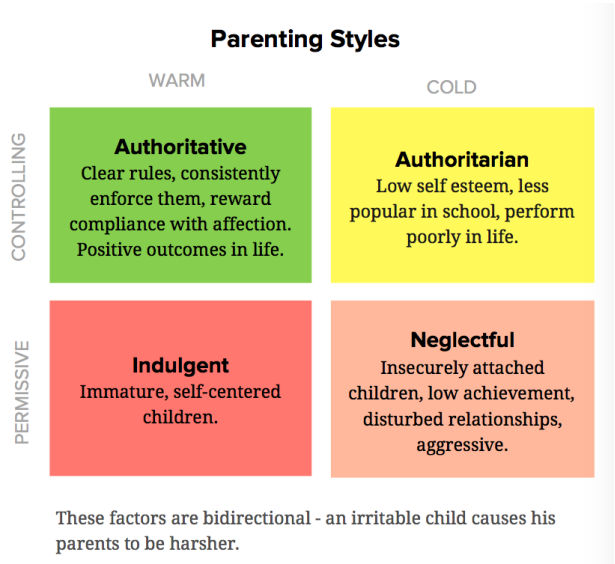
many if not most become attached to caretakers and grow into normal adults

Day Care

- If day care is high quality, there is no disrupt attachment to parents
- No differences in social development as long as the care is good
- Can actually improve cognitive development

Freud: 5 Psychosexual Stages

1. Oral stage (1st year)
2. Anal stage (2nd year)
3. Phallic (3-5 years)
    1. Oedipal crisis— psychologically become dad to over come this
4. Latency (5-13 years)
5. Genital (13+)



Question: William can draw a map showing the route to school and shows reversible thinking. Which Piagentan stage of child development is he probably in?

- Concrete operational stage

Gender Identity and Socialization

- **Gender identity**—a sense of "femaleness" or maleness"
- **Gender constancy**— understanding that being male or female is a permanent part of a person, develops around)6 or 7)
- **Sex-role stereotypes**—beliefs bout the types of characteristics and behaviours that are appropriate for girls and boys to possess
- **Socialization**—process by which we acquire the beliefs, values and behaviours of a group, plays a key role in shaping our gender identity and sex-role types
- **Sex typing**— treating others differently based on whether they are female or male

MORAL DEVELOPMENT

Moral Reasoning

Level 1: Pre-conventional Reasoning

- Judgments of "right" and "wrong" based on actual/ anticipated punishments and rewards
- Not based on internalized moral values

Stage 1: Punishment/obedience orientation (Focus on punishment)

- Obeying rules and avoiding punishment
    - " Heinz should steal the drug because if he lets his wife die he'll get into trouble."

Stage 2: Instrumental/ hedonistic orientation (focus on redress and self-interest)

- Self interest and gaining rewards
  - "Heinz should steal the drug because that way he'll still have his wife with him.

Level 2: Conventional

- Conformity to the expectations of social groups; person adopts other people's values
- Conformity to social expectations, laws, duties

Stage 3: Good child orientation (want peoples approval)

- Gaining approval and maintaining good relations with others
  - " People will think Heinz is bad if he doesn't steal the drug to save his wife."

Stage 4: Law and order orientation (obeys laws are rules because they are meant to be followed)

- Doing one's duty, showing respect for authority, and maintaining social order
  - "Heinz should steal the drug because it's his duty to take care of his wife."

Level 3: Post-conventional

- Moral principles that are well thought out and part of one's belief and value system
- Based on well though out, general moral principles

Stage 5: Social contract orientation (Importance of law but also takes into account individual rights)

- General principles agreed upon by society that foster community welfare and individual rights; recognition that society can decide to modify laws that loose their social utility
  - " Stealing breaks the law, but what Heinz did was reasonable because he saved a life."

Stage 6: Universal ethical principles (morality is based on abstract, ethical principles of justice that are viewed as universal)

- abstract ethical principles based on justice and equality; following one's conscious
  - "Saving life comes before financial gain, even if the person is a stranger. the law in this case is unjust, and stealing the drug is the morally right thing to do."

ADOLENCE

- Cognitive development

Abstract Reasoning (Piaget)

Adolescence egocentrism:

- Personal fable: overestimate the uniqueness of their feelings
  - "Mom can't possibly know what I'm going through"
- Imaginary audience: oversensitivity to social evaluation
  - Everyone will notice (how I look)

Social, Emotional, Personality Development

- **4 Identity statuses**
  - **Identity diffusion**—some adolescents have not yet gone though an identity crisis. Unconcerned
  - **Foreclosure**—adopting an identity without going though an identity crisis. Took on peer pressure/ parental values without much thought
  - **Moratorium**—currently going through an identity crisis
  - **Identity achievement**— have gone through an identity crisis and have resolved it

ADULTHOOD

Marriage and Family

- **Cohabitation**—as entry into marriage; as alternative to marriage, live together and engage in sexual relationships without being married
- Marital satisfaction
  - Declines over first few years
  - May decrease more after birth of first child
  - Empty nest syndrome—satisfaction increases after children leave home

CHAPTER 13— Behaviour in a Social Context

Attributions—judgements about the causes of our own and other peoples behaviour and outcomes

Personal (internal) attributions— people's behaviour is caused by their own characteristics

Situational (External) attributions—aspects of the situation cause peoples behaviour

Your friend Kim says Calc 1000 is a bad class. To evaluate, we use:

Consistency—Does she always say its bad, or did she like it at other times?
Distinctiveness—Does she only think Calc 1000 is bad, out of all of her courses?
Consensus— Does everyone think it is bad?

- If all three were high, we came a **situational** attribution: Calc 100 is really shitty
- If consistency is low, transit conditions are in play: Kim's in a bad mood maybe
- If consistency is high, but the other two are low, we make a **personal** attribution: Kim is too critical

Fundamental Attribution Error

- Underestimate the impact of the situation
- Overestimate the role of personal factors when explaining other people's behaviour
- When people have time to reflect on their judgements or are highly motivated to be careful, the fundamental attribution error is **reduced**
- **Humans tend to overestimate personal attribution and underestimate situational attribution**
    - We expect actors to have the same personality as their characters
    - We expect a student to agree with the paper they wrote, even if we *know* their position in the paper was assigned by the teacher
    - But we don't make this error about ourselves
        - We have more info about the situation
        - **Figure-grounds relations—** when we watch people, they are the focus (figure) that stands out against the background (situation is the background)
        - **Self-serving bias**— failures are situational attributional, successes are personal attributions

Culture Differences in Attribution

- Individualistic cultures make more **personal** attributions than collectivistic ones (India, Korea) —who made more situational attributions
- Tendency to attribute other's behaviour to personal factors reflects a Westernized **emphasis on individualism**
- More holistic thinking in those cultures results in considering more info when making attributions
- Chinese culture values modesty so people make have less self-serving bias

Impressions

- **Primacy effect**—tendency to attach **more importance** to the **initial info** that we learn about a person
    - more alert
    - initial information shapes how we perceive the subsequent
    - "Impression formation—for people who dislike ambiguity and uncertainty
- **Recency effect**—giving greater weight to the most recent information

- takes over when we are told specifically to avoid making snap judgements
- consider evidence

Schemas

- If you are told a person is cold, you think they're cold
- If told they're shy, same behaviour makes you think they're shy
- Stereotypes are schemas
- **Study:** A girl's performance on answering questions is rated higher if participants think her parents are upperclass
- **Mental set**—which is a readiness ti perceive the world in a particular way, powerfully shapes how we interpret a stimulus
- **Schemas**—mental frameworks that help us organize and interpret framework
- **Stereotype**—generalized belief about a group or category of people, represents a powerful type of schema

Self-fulfilling prophecy—your wrong expectation causes the expected behaviour to happen

- Occurs usually without conscious awareness, when peoples **incorrect expectations lead them to act towards others in a way** that brings about the expected behaviour, thereby confirming the **original impression**
- You smile less to the person you think is cold, so they act colder to you

ATTITUDE

- is a positive or negative evaluation reaction towards a stimulus (person, object, concept)

Theory of Planned Behaviour

- **Subjective norm—** perception of what other people think we should do
- Intention to do something is strongest when:
  - We have a positive attitude toward that behaviour
  - **(1)** When **subjective norms** (our perceptions of what other people think we should do) support out attitudes
  - When we believe that the behaviour is under control

- Influence behaviour more when counteracting situational factors are weak

- **(2)** Attitudes have a greater influence on behaviour when we are aware of them and when they are strongly held

- **(3)** General attitudes are better at predicting general classes of behaviour, and scenic attitudes are better at predicting specific behaviours

Cognitive Dissonance

- People strive for consistency in their cognitions
  - People are motivated to reduce dissonance

Festinger's Study

1. Bring people into a lab and get them to do something **really** boring
2. When they come out of the lab, ask them to do you a favour and tell the guy in the lobby that the task is really fun (guy in lobby is actually a confederate)
3. After they lie to the guy, give them either $1 or $20 for lying
4. Then ask them how fun they actually found the task

- The people that give you $1 for lying say they like the task **more** than the people you gave $20 for lying. Why/ People like to think they are honest. But they just did something dishonest (**Counter-attitudinal behaviour**). To overcome this dissonance between their actions and their self-perception, they can change their opinion on the task. If it was fun, they're no longer lying and they can continue to feel honest.

- Counter-attitudinal behaviour (such as lying when you think you're an honest person) only produces dissonance if our actions were freely **chosen**
- It is maximized when behaviour has consequences, or threatens **self-worth**
- It is reduced by thinking the behaviour wasn't important, finding external justification, or making other excuses

Self-fulfilling Perception Theory (Daryl Bem)

- You make inferences about our own attitudes by observing the was we behave
- Between your own behaviour and attitudes just like you do with others
- You actually don't know if you liked it or not
- Its not dissonance, you just feel you must have liked it if you did it for $1

Difference between dissonance and self-perfection theory:

- Both predict counter-attitudinal behaviour will produce an attitude change
- Dissonance assumes **heightened arousal** caused by counter-attitudinal behaviour:
    - If participants are made to think the arousal is caused by a pill, the effect of dissonance is reduced
- In situations where behaviour doesn't threaten self-image, or if we didn't have strong opinions to begin with, the effect is caused by self-perception theory
- Dissonance theory bette explains why people change their views after behaving in ways that openly contradict their clearly defined attitudes, when such behaviours threaten their self image
- *Both are right depending on situation: both agree* ***behaviours can influence our attitudes***

Persuasion

- involves a **communicator** who delivers a **message** through a **channel** (visual, verbal, written) to an **audience** within a surrounding **context** (cultural setting)

Communicator:

- **Communicator credibility**— how believable the communicator is
    - trustworthy and expert

Message:

- **Two-sided approach**— two sides to an issue, the audience receives a two sided message as less biased

Audience:

- **Central route to persuasion**—occurs when people think carefully about the message and are influenced because they find the arguments compelling
- **Peripheral route to persuasion**— occurs when people do not scrutinize the message but are influenced by other factors, such as speakers attractiveness or messages emotional appeal

SOCIAL INFLUENCE

Social influence—an increased tendency to preform one's dominant response in the mer presence of other's

Social norms—shared expectations about how people should think, feel, and behave and they are the cement that binds social systems together (formal laws, expectations, unwritten and unspoken included)

Social role—consists of a set of norms that characterized how people in a given social position ought to behave

Role conflict— occurs when the norms accompanying different roles clash (students, jobs)

CONFORMITY

Informational social influence—follow people because we believe they are right (private acceptance)

Normative social influence—follow people to avoid rejection (compliance)

Factors that effect conformity:

- Group size
  - after 4 or 5 conformers, it does;t matter how many more you add. Larger groups only increase conformity up to a certain point
- Presence to a distaster greatly reduces conformity
- If there is an economic incentive, conformity decreases for easy tasks but increases for hard ones

Compliance Techniques

Norm of reciprocity — involves the expectation that the others treat us well, we should respond in kind

- If others treat us well, we should treat them well

Door-in-the-face technique—Make a huge request first, then ask the real one

- "Will you volunteer 10 hours?" "Well, will you donate $5?"
- Telemarketers
- To be effective same persuader must make both requests

Foot-in-the-door technique —Get a small compliance first, then ask for a bigger one.

- "Will you sign this petition" "Will you also donate $5?"
- Class questionnaires and surveys

Lowballing—Give a low price and gradually increase it with 'extra fees'

- Sales man, let me ask the manager—slightly increase price

Deindividuation

Deindividuation— a loss of individuality that leads to disinhibited behaviour

- Anonymity to outsiders in the group is the key
- Deindivuation was a big factor in the Stanford Prison Experiment, where a mock jail experiment got way out of hand

Group Performance

Social loathing—people put in less effort when working in a group, less individual effort when working in a group than working alone

- The wholes less than the sum of its parts
- Most likely when:
  - people believe that individual performance within the group is not being monitored
  - the tasks has less value or meaning to the person
  - the group is less important to the person
  - task is simple and the person's input is redundant with that of other group members
  - men do it more
  - individualist cultures do it more
  - fatigue increases it

Social compensation—working harder to make up for the loafing of others

Groups Decision Making is Influenced by:

- Acceptance of common goals
- Status structure (leaders talk too much)
- Group size (effectiveness decreases as group size increases)
- Cohesiveness (we-feeling)

Group polarization— ex. conservative groups become more conservative, liberal groups because more liberal, etc.
- When a group of like-minded people discuses an issue, whether face to face or through email, the 'average' opinion of group members tends to become more extreme

Group think— tendency for group members to suspend critical thinking because they are striving to seek agreement
- Most likely when the group:
  - is under high stress to reach a decision
  - is insulated from outside input
  - has a directive leader who promotes his personal agenda
  - has high cohesion, reflecting a spirit of closeness and ability to work well together

Social Interaction (4) Types:
- Attraction
- Prejudice
- Altruism
- Aggression

Attraction

Craig Hill: Four Reasons:
- To obtain positive stimulation
- Receive emotional support
- Gain attention
- Permit social comparison

Social comparison—comparing feelings, beliefs, and behaviours with those of other people
- helps us determine whether our judgements are normal and enables us to judge the level of cognitive and physical abilities

Mere-exposure effect—repeated exposure increases your liking under any circumstance (but only if initial reaction isn't negative)

Matching Effect—we are most likely to have a relationship with someone with the same physical attractiveness
- Bird of equally attractive feathers flock together

Self-Disclosure—the sharing of innermost thoughts and feelings

Social exchange theory—the course of a relationship is governed by rewards and costs that the partners experience
- a relationship is determined by rewards + costs the partners face
  - **Comparison level**— outcome one expects from relationship, determines satisfaction with it
  - **Comparison level level for alternatives**—potential alternatives, determines commitment

Sexual strategies theory—men seek fertile young mates, women seek older more committed and protection providing mates

Social structure theory—differences in sexual preferences occur due tot society
- More gender societies have more similar preferences
- society directs men into more advantaged social and economic roles

LOVE

(5) types of love
- Parental
- Exotic (sexual)
- Self
- Love for humanity

- love of God

Types of Love

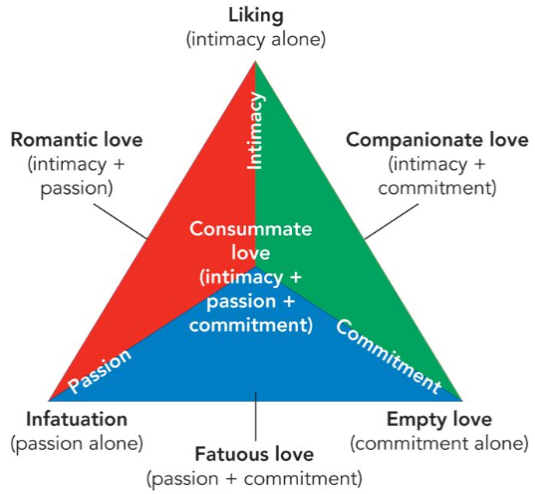
Passionate Love — intense emotion , arousal and yearning for the partner (less stable)
- Declines more quickly over time

Compassionate love—affection, deep caring about their well-being, and a commitment to "being there" for them
- More stable

Triangular Theory of Love—focuses on:
- ***intimacy*** (cloeseness, sharing, and valuing ones partner)
- ***commitment*** (the decision to remain in the relationship)
- ***passion*** **(**feelings of romance, physical attraction and sexual desire)

Consummate love—occurs when intimacy, passion, and commitment are all present

Non-love—is the absence of all three (intimacy, passion and commitment)



Cognitive-arousal model of love— the passionate component of love has interacting cognitive and physiological components
- Primed with beliefs and expectations of love
- Model suggests that emotional arousal actually caused by some other factor may sometimes be misinterpreted as love
- Phenomenon is know as:
  - **Transfer of excitation—** arousal due to one source is perceived as being due to another source
    - Men who experienced a more wobbly bridge had more sexual arousal towards the woman
    - In the presence of someone we find attractive, other sources of arousal—whether a wobbly bridge, physical exercise, or a frightening movie —increase our sexual attraction even if we recognize these outside sources
    - If unaware of the sources, our attraction increases even more

PREDJUDICE AND DISCRIMINATION

Prejudice— refers to a negative **attitude** toward people based on their membership in a group

Discrimination—refers to negative **behaviour** and treating people unfairly based on the group to which they belong

In randomly placed groups:
- **In-group favouritism**—a tendency to favour in-group members and attribute more positive qualities to "us" than to "them"
- **Out-group derogation**—a tendency to attribute more negative qualities to "them" than to "us"
- **Out-group homogeneity**—generally view members of out-groups as being more similar to one another than are members in a group
  - They are alike, but recognize that "we are diverse"

Motivational Roots of Prejudice

Realistic conflict behaviour— competition for limited resources fosters prejudice

Social identity theory — prejudice stems from a need to enhance our self esteem

- Pride is taken in our group's accomplishments and threats t our group threaten us
- Derogating other groups makes us feel better

Stereotype threat—stereotypes create a fear and self-consciousness among stereotyped group members that they will "live up to" to other people's stereotypes

Reducing Prejudice

Equal status contact— prejudice between people is most likely to be reduced when they:

1. engage in sustained close contact
2. have equal status
3. work to achieve a common goal that requires cooperation
4. supported by broader social norms

HELPING OTHERS

Social leaning and cultural influences

- **Norm of reciprocity**—we should reciprocate when others treat us kindly
- **Norm of social responsibility**—we should help others and contribute to the welfare of society

Empathy abd Altruism

Empathy-Altruism Hypothesis— altruism does exist and it is produced by **empathy** (the ability to put oneself in the place of another and to share what that person is experiencing)

Negative state relief— high empathy causes us to feel distress when others suffer, so by helping them we reduce our own personal distress— a self-focused goal not an altruist one

Bystander

- **Social comparison**— "no one else is concerned, so why should I be"
- **Diffusion of responsibility**—"If I don't help, someone else will"
- **Bystander-effect**—presence of multiple bystanders inhibits each person's tendency to help, due to social comparison and diffusion of responsibility
- Who do we help?
  - Similar people
  - Men like helping women more, women don;t care
  - People who are not perceived as responsible for their problem
    - **Just world hypothesis**—people get what they deserve (victim blaming) so they are responsible for their situation and I don't need to help them

AGRESSION

- Aggression: represents any form of behaviour that is intended to harm another person

Biology of Aggression

- There is a genetic predisposition to aggression
- No one brain structure that turns aversion on and off, its multiple neural circuits
  - **Hypothalamus—** stimulate it in a cat and it will arch its back and attack
  - **Amygdala**— defensive aggression decreases if it is destroyed (violent criminal humans)
  - **Frontal lobe**—impulse control, impulsive killers had less activity here
  - **Testosterone**—social aggression (weaker in humans)

Frustration

- **Frustration**—occurs when some stimulus or event interferes with our progress toward a goal, often contributes to aggression

- **Fustration-agression hypothesis:**

1. All frustration causes aggression
2. All aggression is caused by frustration

* Proven false. Some people respond peacefully or with despair. Pain, provocation, crowding and heat also cause aggression

Learning to Aggress

- When aggression produces positive results, it will be repeated
- It can also be learning by observing others, as with the Bobo Doll experiments where kids learn how to attack a Bobo doll

Psychological Factors in Aggression

- **Attribution of intentionality**—affect how we respond to provocation
  - When other's negative behaviour is intentional, we are more aggressive (more aggressive people are more likely to see intent)
- **Empathy—**if someone apologizes, reaction depends on how well we can understand their viewpoint
- **Regulation of emotions**—cultural and cognitive factors

Psychodynamic Factors

- Aggression is an instinctive, never-ending cycle of buildup and release (Freud)
- His theory: **Catharsis—**aggression discharges aggressive energy and *temporally* reduces impulse to aggress
- Exposure to TV violence is related to aggression (Social Learning Theory)
  - Negative stimulus must be present (heat, provocation, high arousal level)