AP Psychology Cram Packet

"Unit Zero" – Research Design

Basic Vocabulary:

- Hypothesis – tentative explanation – must be **FALSIFIABLE – able to be supported or rejected**
- ***Operational Definition:*** clear, precise, quantifiable definition of your variables – allows **replication** and collection of **reliable** data
- Qualitative data: descriptive data (eye color)
- Quantitative data: numerical data – IDEAL and necessary for statistics
- Population – everyone the research could apply to
- Sample – the people (or person) specifically chosen for your study

Research Designs

- **CORRELATION**: identify relationship between two variables

Adv: useful when experiments are unethical
Disadv: ***CORRELATION DOES NOT EQUAL CAUSATION***

  - **Directionality problem** – which direction does the correlation go? (depression cause low self-esteem, low self-esteem causes depression, or a 3rd variable?)
  - **3rd variable problem** diff. variable is responsible for relationship (ice cream and murder)
- ***Positive Correlation –*** variables increase & decrease together
- ***Negative Correlation –*** as one variable increases the other decreases
- ***The stronger the # the stronger the relationship REGARDLESS of the pos/neg sign***. Cannot be < or > than 1.
- ***Stronger relationships = tighter clusters on graph***

- **EXPERIMENTS:** purposefully manipulate variables to determine cause /effect

Adv: only type that establishes **cause and effect** Disadv: can be unethical, too artificial

- ***Independent Variable***: purposefully altered by researcher to look for effect
  - ***Experimental Group:*** received the treatment (part of the IV); can have multiple exp, groups
  - ***Control Group:*** placebo, baseline (part of the IV); can only have 1
- ***Dependent Variable:*** measured variable (is DEPENDENT on the independent variable)

Vocab unique to experiments:

- ***Placebo Effect:*** any observed effect on a behv. That is "caused" by the placebo (shows effectiveness of exp. Treatment). Usually fixed w/ blinded studies
- ***Double-Blind:*** Exp. where neither the participant or the experimenter are aware of which condition people are assigned to (drug studies)
- ***Single-Blind:*** only participant blind – used if experimenter can't be blind (gender, age, etc)
- ***Confound:*** error/ flaw in study that is accidentally introduced (can be called a confounding variable)

- ***Random Assignment:*** assigns participants to either control or experimental group at random –increase chance of equal representation among groups (spreads the lefties across both groups) – allows you to say Cause / Effect

OTHER STUDY TYPES

- **NATURALISTIC OBSERVATION:** observe ppl in their natural settings

Adv: real world validity
Disadv: No cause and effect

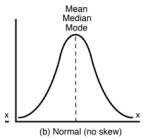
- **CASE STUDY**: Studies ONE person (usually) in great detail

Adv: – collect lots of info
Disadv: No cause/effect

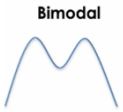
- **META-ANALYSIS**: combines multiple studies to increase sample size and examine effect sizes

STATISTICS

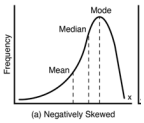
- ***Descriptive stats:*** show shape of the data
  - **Measures of Central Tendency:**



  - **Mean:** Average (use in normal distribution)
  - **Median:** Middle # (use in skewed distribution)
  - **Mode:** occurs most often
  - **Bimodal** – has two modes – usually indicates good bad scores



  - Skews – created by outlers
  - Neg skew = mean is to the left (neg side), mode is to the right
  - Pos skew = mean is to the right



- **Measure of variation**
  - Range – distance bw smallest and biggest #
  - Standard deviation – avg. amount the scores are spread from the mean (bigger # = more spread)

- **INFERENTIAL STATISTICS:** establishes significance (meaningfulness)
  - **STATISTICAL SIGNIFANCE** = results not due to chance, exp.manipulation caused the difference in means
    - $p<.05$ = stat. sig, smaller = better
  - **EFFECT SIZE =** data has practical significance – bigger = better

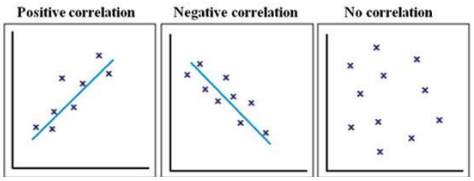
- **ETHICAL GUIDELINES (IRB APPROVAL NEEDED FOR PPL)**
  - Confidentiality: names kept secret
  - Informed Consent: must agree to be part of study
  - Informed assent – minors AND their parents must agree
  - Debriefing: must be told the true purpose of the study (done after for deception)
  - Deception must be warranted
  - No harm– mental/physical

Additional Vocabulary:

- **Surveys:** usually turned into correlation. Subject to **self report bias** - errors when collect surve data due to:
  - **Social desirability** – ppl lie to look good
  - **Wording effects –** how you frame the question can impact your answers
- ***Random Sample (selection):*** method for choosing participants for your study –everyone has a chance to take part, increases **generalizability**

DO

- ***Representative Sample:*** Sample mimics the general pop. (ethnic, gender, age)
- ***Convenience Sample:*** select participants on availability – less representative and less generalizability this way
- ***Sampling bias*** – sample isn't representative, due to conv. sampling



- ***Cultural norms*** – behvs of a particular group can influence research results
- ***Experimenter bias / Participant bias:*** experimenter/participant expectations influences the outcome
- ***Cognitive bias***– bias in thinking/judgment
  - ***Confirmation bias*** – find info that supports our preexisting beliefs
  - ***Hindsight bias*** – "I knew it all along"
  - ***Overconfidence*** – overestimate our knowledge / abilities
  - ***Hawthorne effect*** – ppl change behavior when watched
- Research needs peer review and adequate sample sizes

Biological Basis Pillar

*NT = neurotransmitter, AP = action potential, NS = nervous system

HEREDITY VS ENVIRONMENT

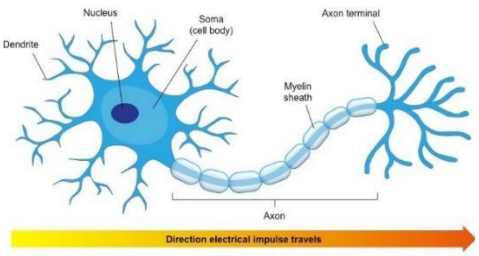
- **Evolutionary psycs –** study how natural selection influences behavior
- **Heredity (nature) =** how genes influence your behavior
- **Environment (nurture) =** how outside situations influence your behavior (school)
- **NATURE VS. NURTURE: ANSWER IS BOTH**

o Twin / Adoption Studies:
o Genetics: identical twin will have a higher percentage of also developing a disease
o Environment: identical twins raised in different environments show differences

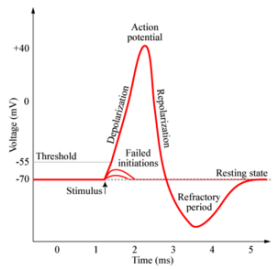
NERVOUS SYSTEM

- **CENTRAL NS:** Brain and spinal cord
- **PERIPHERAL NS:** Rest of the NS – relays to Central NS
  - o ***Somatic NS:*** Voluntary movement, has sensory and motor neurons
  - o ***Autonomic NS:*** Involuntary organs (heart, lungs, etc) – contains the:
    - ***Sympathetic NS:*** fight/flight (generally activates – exception digestion)
    - ***Parasympathetic NS:*** rest / digest (generally inhibits - exception digestion)

NEURON AND NEURAL FIRING



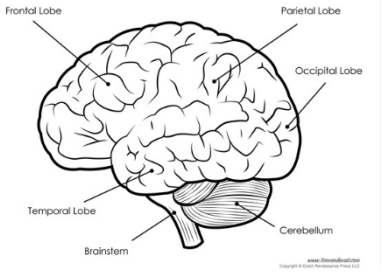
- **NEURON:** Basic cell of the NS
  - o ***Dendrites:*** Receive incoming NTs
  - o ***Axon:*** AP travels down this
  - o ***Myelin Sheath:*** speeds up AP down axon, protects axon
  - o ***Synapse:*** gap b/w neurons
- ***SENSORY neurons –*** receive sense signals from environ.–send signal *to brain*
- ***MOTOR neurons –*** signals to move – send signals *from brain*
- ***Interneurons –*** cells in spinal cord /brain responsible for reflex arc
  - o ***Reflex arc –*** important stimuli skips the brain and routes through the spinal cord for immediate reactions (hand on a hot flame)
- **GLIA** – support cells – give nutrients and clean up around neurons
- ***Neurons Fire w/ an Action Potential***: ions move across membrane sends an electrical charge down the axon
  - o ***Resting potential:*** neuron maintains a -70mv charge when not doing anything
  - o ***Depolarization:*** charge of neuron briefly switches from neg to pos. – triggers the AP
  - o ***Threshold of depolarization:*** stimulus strength must reach this point to start the AP
  - o ***All or nothing principle***: stimulus must trigger the AP past its threshold, but does not increase the intensity or speed of the response (flush the toilet)



  - o ***Refractory period***: neuron must rest and reset before it can send another AP (toilet resets)
- **NEUROTRANSMITTERS (NT):** Chemicals released in synaptic gap, received by neurons. Classified as ***excitatory*** (increase APs in other neurons) or ***inhibitory*** (decrease APs)
  - o ***GABA:*** Major inhibitory NT
  - o ***Glutamate:*** Major **e**xcitatory NT (glutes excite you!)
  - o ***Dopamine:*** Reward (short term) & fine movement – in hypothalamus, assoc. w/ addiction
  - o ***Serotonin:*** Moods (long-term), emotion, sleep –in amygdala, too little assoc. w/ depression
  - o ***Acetylcholine (ACh):*** Memory and movement –in hippocampus, assoc. w/ Alzheimer's
  - o ***Norepinephrine:*** sympathetic NS - too little assoc. w/ depression
  - o ***Endorphins:*** decrease pain
  - o ***Substance P:*** pain regulation (abnormality increases pain and inflammation)
- **HORMONES:** if not in the nervous system, it's a hormone
  - o ***Oxytocin:*** love, bonding, childbirth, lactation
  - o ***Adrenaline:*** fight/flight
  - o ***Leptin:*** makes you full (stops hunger)
  - o ***Ghrelin:*** makes you hungry (turns you into a gremlin)
  - o ***Melatonin:*** sleep
- ***Agonist:*** drug that mimics a NT
- ***Antagonist:*** drug that blocks a NT
- ***Reuptake:*** Unused NTs are taken back up into the sending neuron.(antidepressants cause *reuptake inhibition* (block reuptake) – treatment for depression
- **PSYCHOACTIVE DRUGS:**
  - o ***Depressants:*** Decrease NS activity (alcohol)
  - o ***Stimulants:*** Increase NS activity (caffeine & cocaine)
  - o ***Hallucinogens:*** hallucinations and altered perceptions (Marijuana)
  - o ***Opioids:*** relieve pain (endorphin agonists) (heroin)
  - o ***Tolerance:*** Needing more of a drug to achieve the same effects
  - o ***Addiction:*** must have it to avoid withdrawal symptoms
  - o ***Withdrawal:*** symptoms associated with sudden stoppage

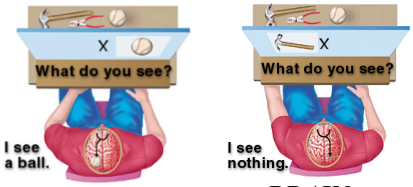
THE BRAIN

o Cere**bell**um – movement, balance, coordination, procedural memory (walking a tightrope balancing a bell)
o Brainstem / Medulla – vital organs (HR, BP, breathing)
o Reticular activating system: alertness, arousal, sleep, eye movement
o Cerebral Cortex: outer portion of the brain – higher order thought processes – includes limbic system, lobes, corpus callosum
o Limbic System
  - ▪ Amygdala: emotions, fear
  - ▪ Hippocampus: episodic and semantic memory (if you saw a hippo on campus you'd remember it!)
  - ▪ Hypothalamus: Reward/pleasure center, eating behaviors – link to endocrine system, homeostasis
  - ▪ Thalamus: relay center for all but smell
  - ▪ Pituitary gland: talks w/ endocrine sys and hypothalamus – release hormones



o Occipital Lobe: vision
o Frontal Lobe: decision making, planning, judgment, movement, personality, language, executive function – includes the:
  - ● Prefrontal cortex: front of frontal lobe – executive function
  - ● Motor Cortex: back of frontal lobe - map of our motor receptors – controls skeletal movement
o Parietal Lobe: sensations and touch – controls association areas – incudes:
  - ● Somatosensory Cortex: map of our *touch* receptors
- ● Temporal Lobe: hearing and face recognition, language

- *Association areas:* receive input from multiple areas / lobes to integrate info
- ***Left hemisphere only*** – damage to these results in ***aphasia*** *(damaged speech)*
  - Broca's Area: Inability to produce speech (Broca – Broken speech)
  - Wernicke's Area: can't comprehend speech (Wernicke's what?)
- Corpus Callosum: bundle of nerves that connects the 2 hemispheres – sometimes severed in patients with severe seizures – leads to "split-brain patients"
  - Split-brain experiments:
    - Image shown to R eye processed in L hemi – patient can say what they saw; image shown to L eye processed in R hemi, can't say what was seen



- ***BRAIN***

PLASTICITY: Brain changes via damage and through experience

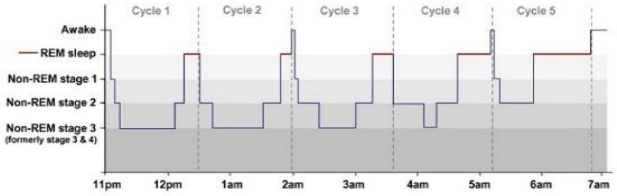
- **ENDOCRINE SYSTEM:** sends hormones throughout the body
  - *Pituitary Gland:* Controlled by hypothalamus. release growth hormones
- **BRAIN RESEARCH:**
  - EEG: shows broad brain activity – not specific – electrical output
  - fMRI: show brain activity in specific regions, measures oxygen
  - Lesion – destruction of brain tissue

DISEASES & DISORDERS TO KNOW

- Multiple sclerosis: destruction of myelin sheath, disrupts APs, causes impaired mobility, paralysis, pain
- Myasthenia gravis: acetylcholine blocked, disrupts APs, causes poor motor control and paralysis
- Blindsight: caused by lesions to primary visual cortex, ppl can "see" ie catch a ball etc despite being blind – evidence for association areas
- Prosopagnosia: face blindness – damage to occipital and/or temporal lobe
- Broca's aphasia – damage to Broca's area – stuttered speech
- Wernicke's aphasia – damage to Wernicke's – jumbled speech
- Phantom limb pain – pain from a limb that no longer is there (amputated) – caused by brain plasticity
- Epilepsy – seizures – too much / little Glutamate / GABA
- Alzheimer's – destruction of acetylcholine in hippocampus, memory loss

SLEEP

- Consciousness – awareness of cognitive processes (asleep or awake?)
  - **Circadian Rhythms:** 24ish hour biological clock of Body temp & sleep
    - Disrupting it makes your internal clock get out of sync (jet lag and shift work do this)

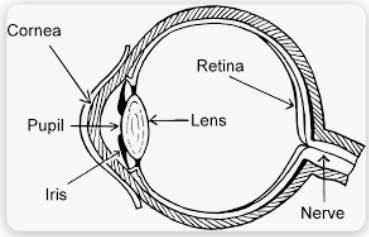


- **Beta Waves:** awake (you betta be awake for the exam)
- **Alpha Waves:** high amp., drowsy
- NREM (non REM) stages-
- **NREM 1:** light sleep, has hypnagogic sensations (falling feeling)
- **NREM 2:** bursts of sleep spindles
- **NREM 3 Delta waves: D**eep sleep
- **Rapid Eye Movement (REM):** dreaming, cognitive processing
  - **Entire cycle takes 90 minutes, REM occurs inb/w each cycle. REM lasts longer throughout the night, deep sleep decreases**
  - **REM is "paradoxical" bc your HR and brain is active – but your body is relaxed**
- **REM Rebound:** after sleep disruptions and/or lack of REM sleep you'll have more / more intense REM sleep
- **DREAM THEORIES:**
  - ***Activation Synthesis:*** Brain produces random bursts of energy – stimulating lodged memories in limbic sys & brain stem. Dreams start random then develop meaning. ***Its Neural theory.***
  - ***Consolidation dream theory:*** brain is combining and processing memories for storage
- **WHY IS SLEEP NECESSARY**
  - ***Consolidation –*** storage of memories
  - ***Restoration –*** helps regenerate the immune system and restore energy
- **SLEEP DISORDERS**
  - ***Insomnia:*** Inability to fall / stay asleep (due to stress/anxiety)
  - ***Somnambulism (sleep walking)*** – happens during stage 3 - NOT during REM
  - ***Narcolepsy:*** fall into REM out of nowhere – treated w/ stimulants
  - ***Sleep Apnea:*** stop breathing while asleep (due to obesity usually)
  - ***REM behavior disorder:*** malfunction of mechanism that paralyze you during REM

SENSATION

Intro Vocab

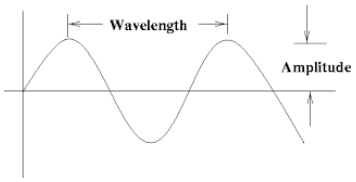
- **Sensation –** receive stimulus energy from environment
- **Transduction –** convert that info into APs
- **Perception –** brain interprets the info
- ***Absolute Threshold:*** detection of signal 50% of time (is it there)
- ***Just noticeable difference****: can tell the difference b/w a stronger and weaker stimulus or two similar things (coke vs pepsi, did it get stronger?)*
  - ***WEBER'S LAW:*** two stimuli must differ by a constant minimum proportion.(the stronger thing, the more you have to add to tell the difference)
  - ***Synesthesia:*** "disorder" where your senses blend (see sounds, etc)
- ***Sensory Adaptation:*** diminished sensitivity as a result of constant stimulation (ex. nose blindness)**– sensory receptors respond less (get tired)**
- **VISUAL SYSTEM:**
  - **Lens –** focuses light on retina
  - **Retina –** contains photoreceptors (rods/cones/ ganglion cells)
  - **Fovea–**area of best vision(cones here)
  - **Rods –** black/white, dark adaptation; way more rods than cones; located along sides of retina
  - **Cones –** color, bright light (red, green, blue) (only in the fovea)
  - **Ganglion cells –** create optic nerve (opponent process theory happens here)
  - **Blind spot –** occurs where the optic nerve leaves the eye –



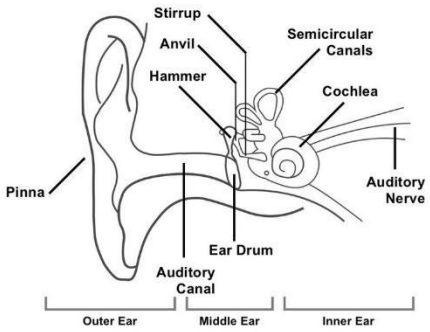
- **VISUAL SYSTEM VOCAB:**
  - Accommodation : lens changes curvature to focus images on retina
  - Nearsightedness- better vision near
  - Farsightedness – better vision far
- **THEORIES OF COLOR VISION:**
  - **Trichromatic –** three cones for receiving color
    - *Blue – short waves*
    - *Green – medium waves*
    - *Red – long waves*
  - **Opponent Process –** complementary colors are processed in ganglion cells – explains why we see an **after image**
    - Red/green
    - Blue/yellow
    - Black/white
- ***Color deficiency:***
  - Damage to, or missing - cones or ganglion cells

- Red/green is most common
- Dichromatism – missing 1 cone
- Monochromatism – only have rods

- **AUDITORY SYSTEM:**
- **Properties of Sound:**
  - Wavelength – distance bw peaks - pitch
    - Long waves = low pitch
    - Narrow waves = high pitch
  - Amplitude – height of wave – loudness
    - Short waves = soft
    - Tall waves = loud



- **THEORIES OF HEARING:** all occur in the cochlea
  - **Place theory –** location where hair cells bends determines sound (high pitches)
  - **Frequency theory –** rate at which action potentials are sent determines sound (low pitches)
  - **Volley theory –** groups of neurons fire APs out of sync



- **Other Hearing Stuff:**
  - Sound localization –which ear gets the waves first tells location of sound
  - Conduction deafness – damage to bones of ear and ear drum cause hearing loss
  - Sensorineural – damge to cochlea, hairs in cochlea, or nerve – usually due to old age and loud noise
- **OTHER SENSES:**
  - Vestibular: Sense of balance (semicircular canals in the inner ear)
  - Kinesthetic: Sense of body position & movement wo looking
  - Pain: Gate-control theory: we have a "gate" to control how much pain is experience. Pain is both mental and physical
  - "Hot": activation of warm and cold receptors
  - Taste (gustation): 6 taste receptors: bitter, salty, sweet, sour, umami (savory), oleogustus (fatty/oily)
    - Tongue, mouth, and brain process taste
    - Density of taste receptors makes ppl super tasters, medium tasters, or nontasters
    - Sensory interaction creates taste – wo smell taste isn't as strong or is absent
  - Smell (olfaction): Only sense that does NOT route through the thalamus
    - Pheromones produce chemical signals w/in a species for attraction

Cognition Pillar

PERCEPTION

- **Top-Down Processing:** Whole idea (prior expectations) → smaller parts (painting w/ faces)
- **Bottom-Up Processing:** Smaller Parts (sensory info) → Whole idea (dog of bunch of dots)
  - **Schemas:** preexisting mental concept of how something should look (like a restaurant)
- ***Perceptual Set:*** tendency to see something as part of a group – speeds up signal processing

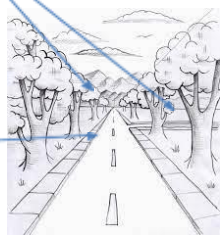


- **GESTALT PSYCHOLOGY:** Whole is greater than the sum of its parts
  - ***Gestalt Principles:***
    - Figure/ground: organize information into figures objects (figures) that stand apart from surrounds (back ground)
    - Closure: mentally fill in gaps
    - Proximity: group things together that appear near each other
    - Similarity: group things together based off of looks
- ***Constancies:*** recognize that objects do not physically change despite changes in sensory input (size, shape, brightness)
- ***Apparent Movement:*** objects can appear moving when they aren't (flip books, blinking lights)



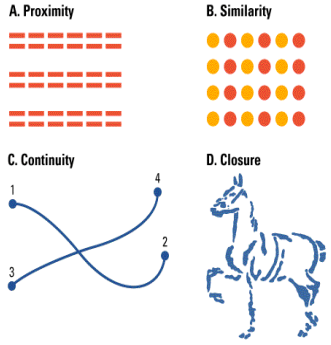
- ***Selective attention:*** focus on c… out other things – can …
- ***I…ness:*** failure to r… ded b/c you're so focused on another task (gorilla video)
- ***Change Blindness:*** fail to notice a change in the scene (curtain changes color)
- ***Cocktail party effect:*** notice your name across the room when its spoken, when you weren't previously paying attention

- **BINOCULAR DEPTH CUES**: (how both eyes make up a 3D image)
  - Retinal Disparity: Image is cast slightly different on each retina, location of image helps us determine depth
  - Convergence: Eyes strain more (looking inward) as objects draw nearer
- **MONOCULAR DEPTH CUES** *(how we form a 3D image from a 2D image)*
  - Interposition: overlapping images appear closer
  - Relative Size: 2 objects that are usually similar in size, the smaller one is further away
  - Linear Perspective: parallel lines converge with distance (think railroad tracks)
  - Relative Clarity: hazy objects appear further away
  - Texture Gradient: coarser objects=closer



THINKING & PROBLEM SOLVING

- **Concepts:** mental categories used to group objects, events, characteristics
  - **Prototypes:** all instances of a concept are compared to an ideal example
- **Algorithms:** step by step strategies that guarantee a solution (formula)
- **Heuristics:** short cut strategy
  - **Representative Heuristic:** make judgment based on your experience (like a stereotype) – assume someone must be a librarian b/c they're quiet
  - **Availability heuristic:** make a judgement based on the first thing that pops in your head (assume planes are dangerous b/c crash in the news)
- **Metacognition:** thinking about (reflecting upon) the way you think



- **Mental Set -** keep using one strategy to solve a problem – cannot think outside the box
- **Functional Fixedness:** can only see one (common) use for an item– cannot think outside of the box
- **Sunk Cost fallacy –** continue something bc you're already invested (might as well finish it now…) – when stopping would be more beneficial

- **Gambler's Fallacy** – believe something is more likely to happen bc its "due" – the dice have no memory
- **Divergent thinking:** ability to think about many different things at once (Creative) – hindered by func. fixedness
- **Convergent thinking:** limits creativity – one answer
- **Executive functioning**: generating, organizing, planning, carrying out goal directed behvs

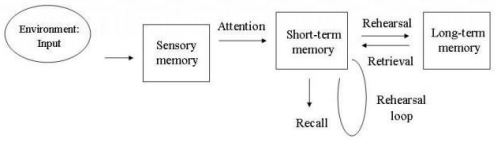
MEMORY

ENCODING: Getting info into memory

- **Automatic encoding** – requires no effort (what did you have for breakfast?)
- **Effortful encoding**–requires work (school)
- **Levels (depth) of Processing**: the more emphasis on MEANING the deeper the processing, and the better remembered
  - *Structural encoding (shallow)* – emphasis on physical structural
  - *Phonemic encoding (intermediate*)– emphasis on what words sound like
  - *Semantic encoding (deep)* = emphasis on meaning of the words
- **Elaborative Rehearsal** – strategies to enhance encoding like below:
  - **Imagery** – attaching images to information makes it easier to remember
  - **Dual encoding –** using multiple methods of processing to remember (photo + words)
  - **Chunking –** break info into smaller units to aid in memory (like a phone #)
  - **Mnemonics –** shortcuts to help us remember info easier
    - Acronyms – using letter to remember something (PEMDAS)
    - Method of loci – using locations to remember a list of items in order
- **Context dependent memory –** where you learn the info you best remember the info (scuba divers testing)
- **State dependent memory –** the physical state you were in when learning is the way you should be when testing (study high, test high)
- **Mood congruent memory –** remember happy events when happy, sad when sad
- **Forgetting curve:** recall decreases rapidly at first, then reaches a plateau after which little more is forgotten
- **Distributed practice** (spacing effect) – review a little every night (resets forgetting curve)
- **Massed practice –** cramming
- **Testing effect –** quizzing over material periodically

STORAGE: Retaining info over time

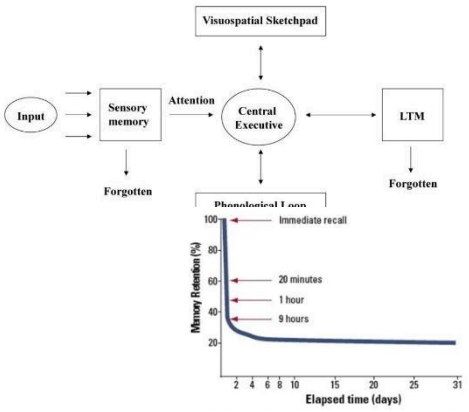
- ***Multi-Store Model* –** Sensory memory, short term memory, long term memory model
- **Sensory Memory –** stores all incoming stimuli that you receive (first you have to a pay attention)
  - **Iconic Memory –** visual memory, lasts 0.3 seconds
  - **Echoic Memory –** auditory memory, lasts 2-3 seconds
- **Short Term Memory –** info passes



from sensory memory to STM – lasts 30 secs, and can remember 7 ± 2 items
  - **Maintenance Rehearsal** (repeating the info) **resets the clock**
- **Long term memory –** lasts a life time
  - **Explicit – require conscious effort:**
    - **Episodic:** events
    - **Semantic:** facts
  - **Implicit- automatic, no effort needed:**
    - **Classical conditioning**
    - **Priming:** info that is seen earlier "primes" you to remember something later on
    - **Procedural:** skills (muscle memory)
- ***Working Memory Model* splits STM into 2 – visual spatial memory (from iconic mem) and phonological loop (from echoic mem). A "central executive" puts it together before passing it to LTM**

Other odd types of memory

- **Prospective memory** – remembering you need to do something (pick up milk)
- **Autobiographical memory:** memory for your personal history – combo of episodic and semantic



  - **Superior autobiographical –** rare condition – ppl have extra detailed memories

- **Memory organization**
  - **Hierarchies:** memory is stored according to a clusters of related info
  - **Categorically –** stored in categories
  - **Semantic networks:** webs of semi-related info
    - **Tip of the tongue phenomenon –** can't remember the name of something bs you're stuck elsewhere in your semantic network
  - **Schemas –**frameworks that organize info
    - **Assimilation:** incorporate new info into existing schema Cat is a dog b/c 4 legs.
    - **Accommodation:** adjust existing schemas to incorporate new information Cat and dogs = different.

Memory storage

- **Acetylcholine neurons in the *hippocampus* for episodic and semantic**
- **Memories before age 3 are unreliable (infantile amnesia) – hippocampus still forming**
- **Cerebellum for implicit / procedural memories**
- **Amygdala for emotional memories**
- **Frontal lobe for encoding and retrieval**
- **Long-term potentiation:** neural basis of memory – connections are strengthened over time with repeated stimulation (more firing of neurons)
- *Memory consolidation* **–** memories are strengthened and made more stable with time

RETRIEVAL: Taking info out of storage

- **Serial Position Effect:** tendency to remember the beginning (primacy effect) and the end (recency effect) of the list best
  - Primacy happens bc the info got moved to long term memory
  - Recency bc its still in your short term
- **Recall:** remember what you've been told w/o cues (essays)
- **Recognition:** remember what you've been told w/ cues (MCQ) (this one is better)
- **Repressed memories:** unconsciously buried memories to defend the ego (psychodynamic approach)
- **Encoding failure:** forget info b/c you never encoded it (paid attention to it) in the first place (which is the real penny)
- **Proactive interference**
  OLD info blocks *new info*
- **Retroactive interference**
  NEW info blocks *old info*
- **Constructive memory –** the way we update memories w/ new memories, associations, feelings – memory is unreliable

- **Source Amnesia:** forget who told you, where you heard it
- **Misinformation effect:** distortion of memory by suggestion or misinformation (lost in the mall, Disney land)
- **Framing –** the way a question is framed impacts how info is recalled / perceived (how fast were the cars going when they smashed)
- **Imagination Inflation:** ppl are more confident an event happened after imagining it (even though it didn't happen)
- **Anterograde amnesia:** amnesia moves forward (forget new info – 50 first dates)
- **Retrograde amnesia:** amnesia moves backwards (forget old info)

INTELLIGENCE & ACHIEVEMENT

Intelligence theories are split:

- **Single form of intelligence (*g factor*) -** general intelligence (g) underlies all mental abilities (typical IQ tests of today). If you're smart in one area you're smart in other areas too
- **Multiple intelligences –** intelligence has lots of types, not just math/language. Can be high/low in areas

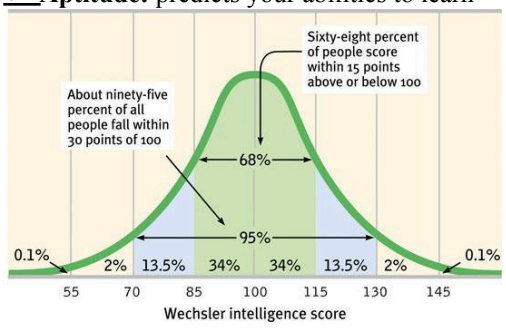
First IQ Test: used a formula and is where the traditional value of "IQ" comes from

$$IQ = \frac{\text{mental age}}{\text{chronological age}} \times 100$$

- Chronological age = actual age
- Mental age = tested age compared to other of that age
- 100 is average, SD = 15

- **Use for IQ scores /tests today:** educational services, diagnostic testing for learning disabilities, GT identification

- **Psychometrics –** field of psych & education for creating tests
  - **Standardization:** test is given using consistent procedures and environments, and graded the same (SAT, AP exams)
  - Tests Should be **reliable:** same results over time (consistent)
    - Split-half reliability: compare two halves of the test
    - Test-retest reliability: use the same test on 2 different occasions
  - Tests Should be **valid:** test is accurate – measures what it is intended to
    - Construct validity: test measures what you want it to (an IQ test actually measures IQ)
    - Predictive validity: test is able to accurately predict a trait (high math scores predicts good engineer)
- Standardized tests establish a normal distribution
- Standard dev are used to compare scores. **Standard deviation** measures how much the scores vary from the mean. Percentages below NEVER change.
- **Types of Tests:**
  - **Aptitude:** predicts your abilities to learn



    a new skill (ASVAB)
  - **Achievement:** tests what you know(AP)

Historical Issues with Intelligence Testing

- **Nature vs Nurture Influence on IQ:**
  - **Genetics:** MZ twins have similar IQ, adopted kids more similar to biological parents
  - **Environment:** early neglect leads to lower IQ, good schooling to higher IQ
  - Personal and sociocultural biases impact interpretation of results
  - Poverty and education inequalities neg. impact scores
  - **Eugenics** – study of how to "improve" the gene pool by discouraging (sterilizing or otherwise) individuals from reproducing
  - **Culture fair tests** – IQ tests have been used to refuse / limit access to jobs, military, education, and immigration
    - Need to focus on non-language skills & minimize cultural specific questions

- **Stereotype threat:** feel at risk of conforming to the neg. stereotype about your group - influences your behaviors, cognitions
- **Stereotype lift** – do better on a test when comparing self to other groups w/ neg stereotypes
- **FLYNN effect:** IQ has steadily risen over the past 80 years – probably due to education standards, healthcare
- **Fixed Mindset**: belief intelligence is fixed from birth – leads to less effort
- **Growth mindset**: belief you can develop abilities through work and determination – leads to more effort

Development and Learning Pillar

DEVELOPMENT

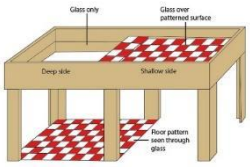
"3 thematic issues" in Dev. Psych:

1. Nature / Nurture (genes or environment)
2. Continuous / Discontinuous (gradual dev over time or dev. In stage)
3. Stability / Change (traits persist, unchanging or traits change as we age)

- **CROSS-SECTIONAL STUDY:** ppl of different ages at the same point in time
  - **Adv:** inexpensive & quick
  - **Disadv:** can be differences due to generational gap
- **LONGITUDINAL STUDY:** studies same ppl over time
  - **Adv:** eliminates groups (cohort) differences, lots of detail
  - **Disadv:** expensive, time consuming, high drop out rates

PHYSICAL DEVELOPMENT

- **Prenatal Development**:
  - **Teratogens:** external agents that can cause abnormal prenatal development (alcohol, drugs, etc)
  - Illness, mutations, hormones, and environment can impact prenatal dev
- **Physical Development:**
  - **Maturation:** natural course of development, occurs no matter what (walking)
  - **Gross movement:** large muscles, strength and coordination (walking) – develops first
  - **Fine movement:** small muscles, precision and controlled (writing)
  - **Reflexes:** innate responses we're born w/ - that go away w/ time
    - Rooting – turning of face towards a finger when touched on the cheek (food response
    - Other reflexes include - sucking, swallowing, grasping, Moro (startle), stepping, Babinski (toes spread when foot touched)
  - **Eyes have the most limited development, takes till 1 year**
    - **Visual cliff:** babies have to learn depth perception, so they will cross a "cliff"



- **Critical period (sensitive period)** – limited time where something HAS to be developed or it won't happen (language for humans)
  - **Imprinting:** birds believe the first thing they see after hatching is mom

PUBERTY! (sexual maturation bc of hormones)

- **Primary sex characteristics:** necessary structures for reproduction (ovaries, testicles, vagina, penis)
  - **Menarche** – 1st period
  - **Spermarche –** first release of sperm

- **Secondary sex characteristics:** nonreproductive characteristics that dev during puberty (breasts, hips, deepening of voice, body hair)
- Adolescent growth spurt – rapid skeletal and muscular dev.
- **Frontal lobe continuous dev (not fully developed till 25)**
- **Adulthood – the following level off and then decline:**
  - Mobility, flexibility, reaction time, visual / auditory acuity, fertility

COGNITIVE DEVELOPMENT

- ***JEAN PIAGET'S COGNITIVE DEV.***

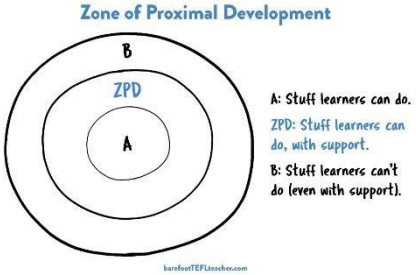
- **Schemas –**frameworks that organize info
  - **Assimilation:** incorporate new info into existing schema Cat is a dog b/c 4 legs.
  - **Accommodation:** adjust existing schemas to incorporate new information Cat and dogs = different.
- ***Sensorimotor Stage:*** *Birth to 2 years:* **focused on exploring their world**
  - *Lack (and gain)* ***Object Permanence:*** Objects when removed from field of view are thought to disappear (peek-a-boo)
- ***Pre-operational Stage:*** *2 – 7 years:* **use pretend play and mental symbols**
  - *Lack* ***Conservation:*** recognize that substances remain the same despite changes in shape, length, or position (girls with juice in glasses)
  - *Lack* ***Reversibility:*** cannot do reverse operations (count out both 4+2 and 2+4)
  - *Are* ***egocentric:*** inability to distinguish one's own perspective from another's – think everyone sees what they see
  - *Lack (and start developing)* ***theory of mind:*** people's beliefs, intentions, emotions are their own
  - *Use* ***animism:*** believe artificial objects have thoughts / feelings
- ***Concrete Operational Stage:*** *7-11 yrs:* **use operational thinking, classification, and can think logical in concrete context**
- ***Formal Operational Stage:*** *11-15 yrs:* **use abstract and idealist thoughts, hypothetical-deductive reasoning**
- *Problems with Piaget's theory:* stages too discrete, dev. differs b/w kids
- ***VYGOTSKY'S THEORY:*** cognitive development is a social process too, need to interact w/ others
  - **Zone of Proximal Development:** gap b/w what a child can do on their own and w/ support. Need scaffolding (teachers)
  - **Crystallized intelligence:** fact and prior learning / experiences – increases w/ age
  - **Fluid intelligence:** ability to learn new things, reaction times, abstract thinking & quick problem solving – decreases w/ age
  - **Dementia:** loss of cognitive function – results in emotional and behavioral changes – ex. Alzheimer's

LANGUAGE

- **Language:** shared system of symbols that operate by rules and is *infinite*
- **Phonemes:** smallest unit of sound (ch sound in chat)
- **Morpheme:** smallest unit that caries meaning (-ed *means* past tense)
- **Grammar:** rules in a language that enable us to communicate
- **Semantics:** set of *rules* by which we derive meaning (adding –ed makes something past tense)
- **Syntax:** rules for combining words into sentences (white house vs casa blanca)
- **Cooing stage**: produces vowels sounds
- **Babbling stage:** start to create phonemes w/ constants
- **One-word stage:** used to try and communicate wants
- **Telegraphic speech (two word stage):** further communication
- **Overregularization:** grammar mistake- children over use certain morphemes (I go-ed to the park)

SOCIOEMOTIONAL DEVELOPMENT

- **Temperament:** patterns of emotional reactions in babies – impacts attachment
  - **Easy, difficult, slow to warm up**
- **"Monkey experiments":** discovered that contact comfort is more important than feeding (monkeys fed on wire or cloth mothers). Monkeys raised in isolation couldn't socialize
- **Attachment: strange situation paradigm** (children left alone in a room w/ a stranger, then reunited w/ mom – determines your attachment style
- **Utilizes idea of separation anxiety:** during late sensorimotor stage kids are fearful of ppl they don't know or being left alone



- **Secure attachment (60% of infants):** upset when mom leaves, easily calmed on return. Tend to be more stable adults
- **Avoidant insecure (20% infants):** actively avoids mom, doesn't care when she leaves – adults have distant relationships and fail to communicate
- **Anxious insecure (10% infants):** actively avoids mom, freaks out when she leaves – jealous relationships and clingy
- **Disorganized insecure(5%):** confused, fearful, dazed – result of abuse

- **Parenting styles- influenced by culture**
  - **Authoritarian:** rules & obedience, "my way or the highway" – kids lack initiative in college, low self-esteem
  - **Permissive:** kids do whatever – no rules – kids lack initiative in college – high self-esteem
  - **Authoritative:** give and take w/ kids – kids become socially competent and reliable – best type - high self-esteem and initiative
- **Peer relationships w/ time**
  - Children engage w/ play
    - *Parallel play* – play side by side w/o interacting – turns into *pretend play*
  - Adolescents rely on peers
    - *Imaginary audience*: believe others are constantly watching them (related to *egocentrism*)
    - Turns into *Personal fable* – belief you are special / unique / invincible
  - Adulthood – culture impacts when major life events should occur – some allow a transition bw adolescence and adulthood
    - *Social clock* – shared (cultural) expectation of age-appropriate behavior (when to get married, have kids, etc)

- **Gender roles:** expected behaviors (norms) for men/women due to cultural influence

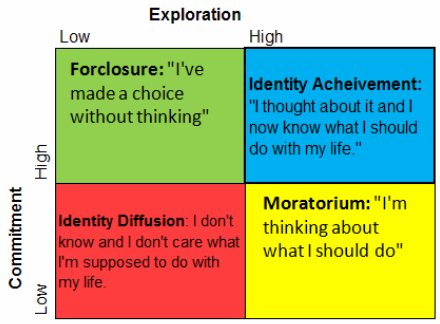
- **ERIKSON'S SOCIOEMOTINAL DEV.** : each stage represents a crisis that must be resolved, results in competence or weakness
  - **Trust vs Mistrust** *(birth – 18 months)*: if needs are met infants dev basic trust
  - **Autonomy vs shame&doubt** *(1 -3 yrs):* learn to exercise their will (I WANT TO DO IT – pours milk)
  - **Initiative vs guilt** (3-6 yrs): learn to initiate tasks and carry out plans, also be creative (WHY kid)
  - **Industry vs inferiority** *(6 yrs to puberty)*: learn what you're good or accomplished at (school / sports success)

- **Identity vs role confusion**: *(adolescence thru 20s*): refine a sense of self by testing roles and forming an identity
- **Intimacy vs isolation**: (*20s—40s):* form close relationships and gain capacity for love
- **Generativity vs stagnation**: *(40s-60s):* discover sense of contributing to the world, thru family & work
- **Integrity vs despair**: (*60s and up):* reflect on your life, feel satisfaction or failure

o MARCIA'S IDENTITY THEORY:

		Individual has committed to identity: Yes	Individual has committed to identity: No
Individual has explored identity options	Yes	Identity Achievement	Moratorium
	No	Foreclosure	Identity Diffusion

- **Diffusion:** no commitment, no exploration, no idea who they are (no idea of a major – not even thinking on it)
- **Foreclosure:** premature commitment w/ no exploration (I'll be a lawyer bc my parents say so)
- **Moratorium:** actively seeking an identity, no commitment though (trying lots of clubs to see what sticks)
- **Identity Achievement:** committed sense of self, desire to accomplish and contribute (picked a major after careful consideration)



- **Adverse Childhood Experiences (ACEs):** stressful / traumatic events during childhood – impact relationships and health
  - Abuse, divorce, mental illness

o ECOLOGICAL SYSTEMS THEORY:

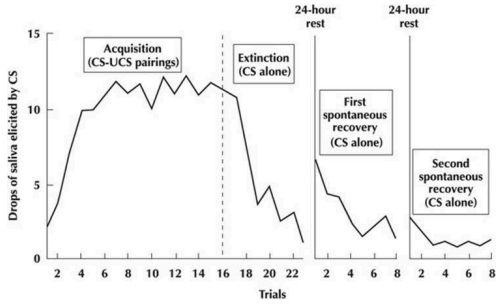
- **Microsystem –** immediate environment w/ daily interaction (family, friends, teachers)
- **Mesosystem –** relationships bw microsystem (interaction bw parents and teachers / school)
- **Exosystem –** environment you're not directly a part of that still impacts you (government policies, parent's job)
- **Macrosystem –** societal and cultural influences (customs, norms, traditions)
- **Chronosystem –** life stage and historical events (economic recession, environmental changes)

LEARNING

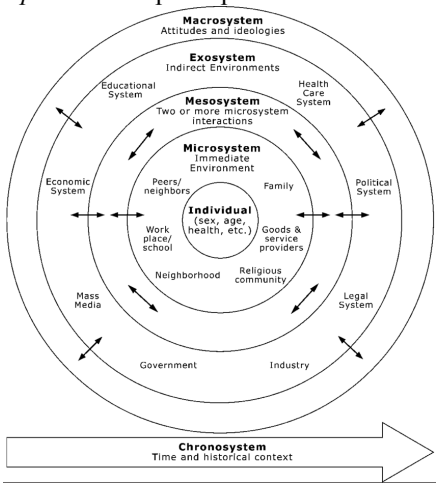
***Behaviorist perspective* is focused on learning – (change in behv through experience). Measures observable behv, and usually ignores the mind**

CLASSICAL CONDITIONING: explains involuntary behvs and emotions

- **Unconditioned Stimulus (UCS):** causes response w/o needing to be learned (food)
- **Unconditioned Response (UCR):** response that naturally occurs w/o training (salivate)
- **Conditioned Stimulus (CS):** thing that now brings about a response (bell)
- **Conditioned Response (CR):** response after conditioning, follows a CS (salivate)
- **Contiguity:** Timing of the pairing, NS/CS must be presented .5-1 sec BEFORE the US
- **Acquisition:** process of learning the response pairing
- **Extinction:** previously conditioned response dies out over time
- **Spontaneous Recovery:** After a period of time the CR comes back out of nowhere



- **Generalization:** CR to like stimuli (similar sounding bell)
- **Discrimination:** CR to ONLY the CS (only drool to that one bell, no others)
- **Higher order conditioning:** when the original CS is paired with 2nd thing – and becomes a new CS (drool to squeaky cabinet / can opener)
- **Conditioned taste aversion (one-trial learning)-** Innate predispositions can allow classical conditioning to occur in one trial (food poisoning) – due to *biological preparedness* – predisposed to react to dangerous biological threats



- **Habituation –** get used to a regular stimulus and stop responding (startle less to a loud noise w/ time)
- **Emotional conditioning** – emotions can be conditioned in humans (little Albert experiment) lead to behavioral treatments for fear (counterconditioning)

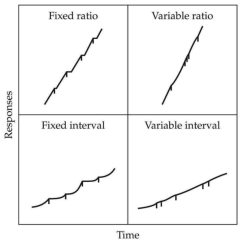
OPERANT CONDITIONING: explains voluntary behv resulting from consequences

- **LAW OF EFFECT** Behaviors followed by pos. outcomes are strengthened, neg. outcomes weaken a behavior (cat in the puzzle box)

● PRINCIPLES OF OPERANT COND:

- **Pos. Reinforcement:** *Add* something *nice* to *increase* a behavior (gold star for turning in HW)
- **Neg. Reinforcement:** *Take away* something *bad/annoying* to *increase* a behavior (put on seatbelt to take away annoying car signal)
- **Primary Reinforcers:** innately satisfying (food and water)
- **Secondary Reinforcers:** everything else (stickers, high-fives)
- **Token Reinforcer:** type of secondary- can be exchanged for other stuff (game tokens or money)
- **Pos. Punishment:** *Add* something *bad* to *decrease* a behavior (spanking)
- **Neg. Punishment:** *Take away* something *good* to *decrease* a behavior (take away car keys)
- **Punishment temporarily changes behv., doesn't tell you what to do – ineffective**
- **Operant conditioning extinguishes like classical conditioning**
- **Shaping:** use *successive approximations* to train behavior (reward closer and closer desired behaviors to teach a response – rat basketball)

- **Continuous Reinforcement schedule:** Receive reward for every response
- **Partial Reinforcement schedule:** vary how often the response is given – strengthens responses and takes longer to extinguish
- **Fixed Ratio schedule:** Reward every X number of response (every 10 envelopes stuffed get $$)
- **Fixed Interval schedule:** Reward every X amount of time passed (every 2 weeks get a paycheck)
- **Variable Ratio schedule:** Rewarded after a random number of responses (slot machine
- **Variable Interval schedule:** Rewarded after a random amount of time has passed (BeReal app)
- ***Variable schedules are most resistant to extinction*** (how long will keep playing a slot machine before you think its broken?)



- ***Ratio schedules lead to the highest response rates (bc you are in control of your reward)***
- **Learned Helplessness** – no matter what you do you never get a positive outcome so you just give up (word scrambles, depression models)
  - **Instinctive drift** – can only teach animals behvs they already do, also will return to original behvs w/ time
  - **Superstitious behaviors** – operantly conditioned through partial reinforcement & coincidence – pigeons hopping on one foot to get food

MISC LEARNING TYPES

- **SOCIAL LEARNING THEORY – learning through observation**
- **Modeling Behaviors:** Children model (imitate) behaviors. Study used BoBo dolls to demonstrate. The more similar the model is the better you learn.
- **Vicarious conditioning:** form of observational learning, watch another get a consequence and learn - don't do that!
- **Latent learning**– learning is hidden until useful (rats in maze get reinforced half way through, performance improved
- **Create Cognitive maps** – mental representation of an area, allows navigation if blocked (firefighters taught this)
- **Insight learning**– some learning is through simple intuition (chimps with crates to get bananas) – aha! moment

Social and Personality Pillar

SOCIAL PSYCH – how we think about, influence, and relate to others

Attributions and Perceptions -

- **Attributions –** how ppl explain behv & mental processes of themselves & others
  - **Dispositional attribution:** person's internal qualities –personality
  - **Situational attribution:** external circumstances
- **Attribution theory:** we explain behaviors by crediting the situation or the person's internal disposition (personality)
  - ***Fundamental attribution error*:** Tendency to blame a person's disposition (personality) and not consider the situation (that guy cut me off b/c he's a jerk – not that his wife could be in labor)
  - ***Actor-observer bias*:** when its others – blame the person, when its you, blame the situation
  - ***Self-serving bias*:** self only – our successes are bc we're awesome, our failures are someone else's fault

	# of distinct groups	Primary person (in-group)	Other person (out-group)	Primary person attributes:
Self-serving bias	1	✔		• Their (primary) success to *internal factors* • Their (primary) failures to *external factors*
Actor-observer bias	2	✔	✔	• Primary person's behavior to *external factors* • Other person's behavior to *internal factors*
Fundamental attribution error	1		✔	• Other person's behavior to *internal factors*

- **Self-fulfilling prophecy:** a belief that leads to its own fulfillment (I expect you all to pass, you know this, you study – fulfilling my prophecy)
- **Social comparison:** we evaluate ourselves based on comparisons to society and social circles
- **Upward comparison –** compare to ppl you think are better then you (I want to be like them)
  - **Downard comparison –** compare to someone you think is worse off than you (at least I don't have it as bad as them)
  - **Relative deprivation –** judge what we are lacking relative to others
- **Explanatory Style:** how ppl explain good and bad events in their lives and others – either optimistic (pos) or pessimistic (neg)
- **External locus of control:** chance / outside forces control your fate
- **Internal locus:** control your own fate
- **Mere exposure effect:** repeated exposure to novel stimuli increases liking of them (the more time you spend around something the more you like it)

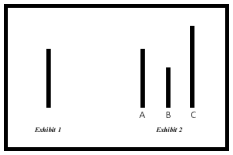
Attitude formation and change:

- **Stereotype:** generalized concept about a group (a label)
  - Reduces cognitive load (mental effort) when making decisions
  - Usually the basis of prejudice and discrimination
- **Prejudice**: neg. reaction towards a person/group w/o any advance experience w/ that group (a belief / emotion)
- **Discrimination**: different treatment of a person/ group than how you would treat others (a behavior)
- **Implicit attitudes**: unconscious bias –leads to
  - **Ingroup bias:** tendency to favor our own group
  - **Ethnocentrism:** tendency to see your own group as more important than others
  - **Outgroup homogeneity bias:** perception that out-group members are similar, while the in-group members are diverse
  - **Just-world phenomenon:** tendency for ppl to believe that the world is just and therefore ppl get what they deserve (homeless ppl)
- **Belief perseverance** – stick to your original belief even when given evidence to disprove it
- **Cognitive dissonance -** two opposing thoughts conflict w/ each other, causing discomfort (dissonance), which makes us find ways to justify the situation (cult that was going to be abducted by aliens, smokers)

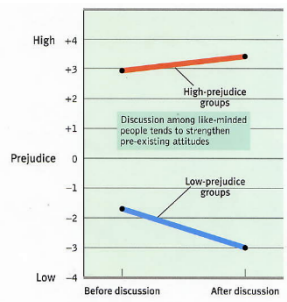
Social Situations

- **Social norms –** define expectations & roles for individuals and social situations
- **Social influence theory –** ppls thoughts and actions are influenced by others
  - **Normative social influence:** we conform to gain approval or to not stand out from the group (be part of the *norm)*
  - **Informational social influence:** we conform to others b/c we think their opinions must be right (change answers to math hw)
  - Elaboration likelihood model – 2 ways to persuade
  - **Central route to persuasion:** change people's attitudes through logical arguments and explanations. Leads to long term behavior change
  - **Peripheral route to persuasion:** change people's attitudes through incidental cues

(like a speaker's attractiveness). Can also use emotional appeals. Leads to temporary behavior changes. Use the:
  - **Halo effect –** overall impression of a person / thing is influenced by a single pos. trait or characteristics
- **Foot in the door phenomenon:** complying w/ a small request then leads to going along w/ a larger request (can I have $5? Yes. Now can I have $25?)
- **Door in the face phenomenon:** a large request is turned down, when then leads you to be more likely to comply w/ a small request (can I have $100? Heck no! How about $20? Okay)
- **Conformity:** change in a person's behv to more closely match the group



classic experiment – showed lines of different lengths, confederates gave wrong answers to see if others would go along w/ it – factors influence conformity:
  1. Person is insecure
  2. Group has 3 or more ppl
  3. Group is unanimous
  4. Person admires group
  5. Person has no prior commitment to a response
  6. Others observe their behavior
  7. Cultural expectations (collectivistic)
- **Obedience:** complying w/ an order or command - classic experiment: participants were to "teach" another individual using shocks. ~65% of participants would administer lethal shocks to another person simply b/c they were told - factors that influence obedience:
  1. Proximity of authority figure
  2. Legitimacy or prestige of the figure
  3. Distance from the victim
  4. Role models for defiance
- Culture influences conformity and obedience:
  - o Collectivistic: encourages social and group ties (more conformity / obedience)
  - o Individualistic: Encourages individuality (less conform / obedience)
- **Group polarization:** the more time spent w/ a group the stronger their thoughts / opinions will become (must have same opinion already)



- **Groupthink:** desire for harmony w/in a group leads to everyone going along w/ the same thinking, ignoring other possibilities or bad ideas
- **Bystander effect (diffusion of responsibility):** the more ppl around the less likely we are to help someone in need (Kitty Genovese)
- **Deindividuation:** loss of self-awareness and self-restraint occurring in group situations that encourage anonymity (mob mentality)
- **Social loafing:** tendency for ppl in a group to exert less effort when pooling their effort together (tug of war)
- **Social facilitation:** perform better on simple or well learned tasks in the presence of others
- **False-consensus effect:** we overestimate the degree to which everyone else thinks / acts the way we do
- **Superordinate goals**: two or more groups work together to achieve a common goal, creates cohesiveness
- **Social trap:** ppl put their own needs before the group needs, results in bad outcome (choose 5 or 15 demo)
- **Industrial / Organizational Psych:** psych of work – best practices, relationships in the workplace or w/ company, how you feel about job (burnout)
- **Altruism (prosocial behavior):** unselfish interest in helping other ppl – happens bs of:
  - o **Social reciprocity norm:** we give so we can get (help me and I'll help you)
  - o **Social responsibility norm:** act in ways that benefit the community (moral sense of good)
  - o **Gain social approval**
- **STANFORD PRISON EXPERIMENT (ZIMBARDO):** classic "experiment" where individuals were assigned to be guards / prisoners. w/in days they took on their **roles** and went too far. Highly unethical

PERSONALITY

Psychodynamic explanation: personality is largely unconscious, and shaped from early childhood experiences

- **id:** our hidden true wants and desires *(devil on your shoulder*)
- **superego:** our moral conscious (*angel on your shoulder*)
- **ego:** part of the mind / personality that deals w/ every day reality – what ppl see – mediates bw the id and super ego *(its you!*)

Defense mechanisms – egos attempt to protect your from threats

- **Repression:** push memories back into the unconscious mind (sexual abuse is too traumatic to deal w/ so you repress it)
- **Regression:** go into an earlier development period in the face of stress (during exam week you start to suck your thumb)
- **Denial:** refuse to acknowledge reality (refuse to believe you have cancer)
- **Rationalization:** justify something happening (don't get into your college – justify it was a crap college anyway)
- **Displacement:** take feelings out on something else (can't tell at teacher, go home and yell at the dog)
- **Projection:** attribute personal shortcomings & faults on to others (man who wants to have an affair accuses his wife of one)
- **Reaction formation:** transform unacceptable motive into his opposite (insecure about masculinity becomes extra aggressive)
- **Sublimation:** replace unacceptable impulse w/ a socially acceptable one (person who likes fighting becomes professional kickboxer)

How do we "test" this personality approach?

- o **Projective Tests:** ambiguous stimuli shown to "reveal your unconscious" – inkblots and thematic apperception tests. Highly subjective, not considered reliability or valid

Trait explanation:

- **Traits:** enduring personality characteristics, people can be described by these – have strong or weak tendencies. They are stable, genetic, and predict other attributes.
- **BIG FIVE personality :** (acronym OCEAN) You vary on each of these
  - o **O**penness : high levels = imaginative, independent, like variety; low = not open to change
  - o **C**onscientiousness: high levels = organized, careful, disciplined; low = disorganized and messy
  - o **E**xtraversion: high levels = sociable, likes being center of attention, meeting new ppl - (opposite is **introversion:** shy, timid, reserved)
  - o **A**greeableness: high levels = soft hearted, trusting, helpful; low levels = suspicious, not a team player
  - o **N**euroticism (emotional stability): high levels = mood swings, easy to stress; low = emotional stable, handles stress

How do we "test" this personality approach?

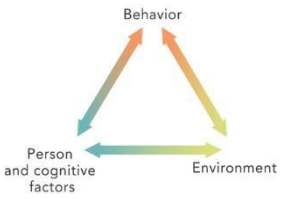
- Personality inventories – special name for a test that uses **factor analysis**: statistical procedure used to identify similar components

Humanistic explanation:

- Emphasized personal growth and free will.
- ***Self-actualization***: fulfilling your full potential as person – self-actualized ppl are self aware, caring, spontaneous, open, secure
- Emphasis on ***unconditional positive regard:*** attitude of acceptance regardless of circumstances

Social-cognitive explanation:

- Behavior is a complex interaction of inner process and environmental influence – which influences personality
- Emphasizes conscious awareness, beliefs, expectations, and goals
- ***RECIPROCAL DETERMINISM:*** interaction of behavior, cognitions, and environment make up *you.*



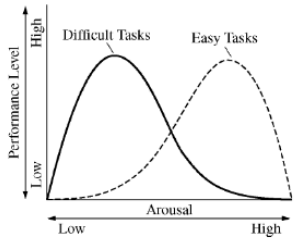
{Joe is shy which makes him anxious in social situations (personal factor) – he just moved to a new school (environment) – so he doesn't talk to others much during lunch and bw classes (behavior). These factors reinforce each other.}

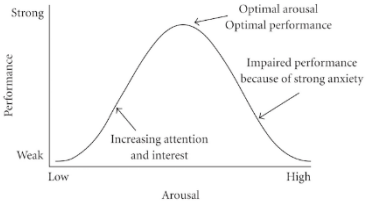
- **Self-efficacy:** belief that one can succeed, so you ensure you do through actions - this influences your -
  - **Self-concept** – how you view yourself in relation to others – which influences your triangle and self-efficacy

MOTIVATION

Theories:

- **INSTINCT THEORY:** innate, fixed patterns in response to stimuli (nest building, mating) (explains animal motivation)
- **DRIVE REDUCTION:** physiological need creates aroused tension (drive) that motivates you to satisfy the need (driven by **homeostasis:** equilibrium). "I'm hungry, I seek out food to decrease my hunger"
- **APPROACH CONFLICT THEORY (Lewin)**
  - **Approach approach conflict:** win – win situation; conflict is which win you have to choose (you can eat out at ONE of your two favorite restaurants – you can only choose one though)
  - **Approach avoidance conflict:** win – lose situation; outcome has positive and negative aspects – conflict is you having to deal with it
  - **Avoidance avoidance conflict :** lose – lose; both outcomes are bad but you have to choose one (clean your room or do your homework)
- **SELF-DETERMINATION THEORY:** motivated intrinsically or extrinsically
  - **Intrinsic motivation:** inner motivation – you do it b/c you like it
  - **Extrinsic motivation:** motivation to obtain a reward (trophy)
- **INCENTIVE THEORY:** driven by external rewards (extrinsic motivation)
- **AROUSAL THEORY:** sometimes we're driven to *increase* arousal through curiosity, experimentation, thrill seeking – 2 associated theories:
  - **YERKES DODSON LAW):** humans seek optimum levels of arousal –easier tasks requires more arousal, harder tasks need less. Best is moderate levels





  - **SENSATION SEEKING THEORY**: need a varied amount of novel (new) experiences to be happy, so we seek it out – 4 types:
    - *Experience seeking*: (desire to try new things)
    - *Thrill / adventure seeking*: attraction to risky things (sky diving)
    - *Disinhibition*: like things that result in loss of self-control (drugs, alcohol)
    - *Boredom susceptibility*: inability to tolerate repetition (constantly seek change)

Hunger

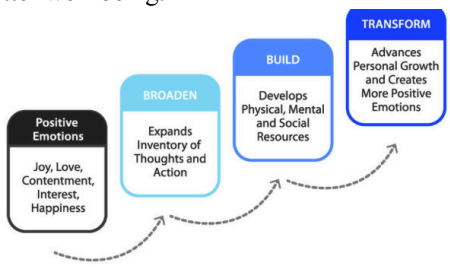
- **Biology of hunger:**
  - *Leptin* – stop eating
  - *Ghrelin* – start eating
- **Psych of hunger:**
  - Environmental cues – time of day, social gatherings, etc
  - Memory – amnesia patients don't remember when they ate, so they'll eat again

Emotion

- **Historical theories focused on 2 things:**
  - Physiological arousal (HR, blood pressure)
  - The cognitive *experience* of an emotion
    - Some theories said these happen *together*, some said they're *linear*
- **Current theories add a cognitive *label* or *appraisal*** *(we have to decide which emotion we're feeling)*
  - Some theories place the label *before* the arousal, some say its *simultaneous / linear*
  - Reason why polygraphs are unreliable

Biological Explanation for the difference in current theories -

- Some stimuli are routed directly to the **amygdala** (fast route – simultaneous processing) (gut reaction to a cockroach) – some stimuli have to be thought about first and hence go to the frontal lobe (long route – label before) (first date jitters)
- **Facial feedback hypothesis:** being forced to smile will make you happier (cartoon study with pen in mouth) – supports physio exp. Before the label – replication of this is mixed
- **Broaden and build theory:** everyday pos. emotions broaden awareness, which builds skills and resilience over time, leading to better well-being.



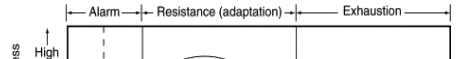
- **Universal emotions:** there are **SIX** universal emotions (happiness, anger, sadness, surprise, disgust, feat) seen across ALL cultures
- **Display Rules:** social group or culture's norms of how to express certain emotions

Mental and Physical Health Pillar

Health / Stress

- **Health Psych –** addresses physical well-being and illness
- **Stress –** associated w/ hypertension, headaches, immune suppression
  - **Distress –** stress that is negative or damaging
  - **Eustress –** stress that is positive or motivating (graduation)
- **Tend and Befriend Theory of Stress:** some ppl cope by *tending* their own needs / others needs. Some seek connections *(befriend)* w/ ppl. (usually associated w/ women)

- **GENERAL ADAPTATION SYNDROME:** three phases of a stress response
  - **Alarm:** temp. shock, fight/flight/freeze
  - **Resistance:** immune system enhanced, coping
  - **Exhaustion:** body gives up, most likely to get sick



- **Problem-focused coping:** solving or doing something to alter the course of stress (to-do list, time management, ask for help)
- **Emotion-focused coping:** managing emotions when stressed (meditation, exercise) (drug / alcohol use is negative)

Positive Psychology

- Pos. Psych – researches factors leading to better well-being, resilience, pos. emotions, psych health
- Gratitude – experiencing and expressing gratitude increases well-being (giving thanks, giving back)
- Exercising signature strengths / virtues increases well-being
  - Wisdom – learning, curiosity
  - Courage – bravery, perseverance
  - Humanity – love, kindness
  - Justice – teamwork, fairness
  - Temperance – humility, forgiveness
  - Transcendence – gratitude, hope
- Posttraumatic growth – experiencing trauma can result in growth and resilience

Explaining / Classifying Disorders

7 Perspectives to Explaining / Treating

Perspective	Explanation	Treatment
Biological	Genes cause changes in NTs & brain	Medication & surgical techniques
Evolutionary	Increased survival, reproduction	
Cognitive	Maladaptive thinking & emotions	Cognitive restructuring
Behavioral	Maladaptive learned associations	Applied behavior analysis
Psychodynamic	Unconscious thoughts / behvs from childhood	Free association, dream interpretation
Humanistic	Lack of social support, not fulfilling potential	Unconditional pos regard, client-centered
Sociocultural	Maladaptive social / cultural dynamics	

Interaction Models to Explain Disorders

- **Biopsychosocial** – combines bio, psych, and sociocultural factors
- **Diathesis – Stress:** individual has a genetic predisposition, disease must be "turned-on" by environmental stimuli (like stress)
- **Eclectic:** most ppl use a more than one perspective

- **Defining abnormal behavior:**
  - Based on level of dysfunction
  - Is there perception of distress
  - Deviation from social norms
- **Diagnosing abnormal behavior:** diagnosing requires special training & evidence based diagnostic tools like:
  - **DSM:** Published by APA.
  - **ICM:** published by WHO
- Both contain: lists of behvs needed for diagnosis; codes for insurance coverage and stat tracking
- Diagnostic labels have positive and negative consequences:
  - Pos: acceptance, connections, easier to find treatment
  - Neg: cultural and societal stigmas and discrimination

NEURODEVELOPMENTAL DISORDERS: inappropriate behaviors for age / maturity – usual onset in childhood

- **Attention deficit / hyperactivity (ADHD)***: has one or both -*
  - Inattention impacting ability to function academically / socially
  - Hyperactivity / impulsivity
  - Causes – changes in prefrontal cortex, reticular activating system, limbic system; genetic
- **Autism Spectrum Disorder (ASD):** impairment in social relationships / communication & repetitive behvs
  - Causes – genetics, prenatal exposure to environmental stimuli

FEEDING AND EATING DISORDERS:

- **Anorexia nervosa:** weight loss of at least 15% ideal weight, distorted body image, major calorie restriction, excessive exercise
- **Bulimia nervosa:** usually normal body weight, go through a binge-purge eating pattern (eat lots, then vomit)

Causes of Eating Disorders

- **Biology:** changes in hypothalamus, prefrontal cortex, amygdala, genetics
- **Sociocultural:** social media exposure, parenting styles, hobbies
- **Behavioral / Cognitive:** learned assoc. and maladaptive thought patterns

DEPRESSIVE DISORDERS

- **Major depressive disorder:** extreme sadness and despair, apathy towards life
- **Persistent depressive:** long term "less severe" depression

BIPOLAR DISORDERS

- *Mania:* heightened mood, risky behaviors, fast talking, flights of ideas
- **Bipolar I:** manic episodes, usually full depressive episodes
- **Bipolar II:** hypomanic episodes, full depressive episodes,

Causes of Depressive AND Bipolar Disorders

- **Biology:** lower levels of serotonin & norepinephrine linked to depression, higher levels of norepinephrine linked to mania. Runs in families suggesting **GENES. Twin studies** also support this.
- **Cognitive:** negative thought patterns leads to depression
- **Behavioral:** learned helplessness
- **Sociocultural:** more common in women, LGBTQ, low SES
- **Biopsychosocial model and Diathesis stress apply**

SCHIZOPHRENIA

NOT MULTIPLE PERSONALITIES (DID)!

- **Acute schizophrenia:** severe episode(s) w/ normal functioning inb/w
- **Chronic –** repeated episodes w/ decreased functioning
- **SYMPTOMS**
  - **Positive Symptoms (***not good – means something added))*
    - **Hallucinations:** sensory experiences w/o sensory stimulation (seeing and/or hearing things)
    - **Delusions:** false beliefs (*persecution:* people are out to get them, *grandeur:* I am God
    - **Disorganized thinking / speech:** *word salads* – string together sentences in nonsensical ways
    - **Disorganized motor behavior –** *excited catatonia* – sudden / unpredictable movement
  - **Negative Symptoms (***something taken away)*
    - **Flat affect:** lack ability to show emotions
    - **Disorganized motor behavior –** *catatonic stupor* –become frozen / unmoving over periods of time

Causes of Schizophrenia

- **Genetics:** runs in families
- **Dopamine hypothesis:** too much dopamine in the brain
- **Prenatal virus exposure**
- **Diathesis-stress**

ANXIETY DISORDERS

- **Phobic:** irrational fear that disrupts your life
  - *Acrophobia* – fear of heights
  - *Arachnophobia* – fear of spiders
- **Agoraphobia** – fear of specific social situations
  - Using public transport
  - Being in open places
  - Being in enclosed spaces w/ ppl (shops, theaters)
  - Standing in line or being in a crowd
  - Being outside of the home alone
- **Panic Disorder:** frequent and sudden *panic attacks* - unanticipated and overwhelming biological, psychological, and cognitive experiences of fear / anxiety (feels like a heart attack)
  - Culture bound ex. –

- *Ataque de nervios* – uncontrollable screaming, shouting, crying assoc. w/ stressful event (often family) – assoc. w/ Caribbean and Iberian descent

- **Social anxiety disorder:** intense fear of being judged, criticized, watched by others (can be paired w/ agoraphobia)
  - Culture bound ex. –
    - *Taijin kyofusho* - people fear others are judging their bodies as undesirable, offensive, or unpleasing (seen in Japan)
- **Generalized Anxiety Disorder:** person is generally anxious, all the time

Causes of Anxiety Disorders:

- **Behavioral:** fear conditioning leads to anxiety, which is then reinforced and/or associated w/ other objects / events
- **Biological / Evolutionary:** natural selection favored those with certain phobias (heights). *Twins* often share disorders. Often see **less GABA** in the brain. Overactive autonomic NS
- **Cognitive:** maladaptive thinking / emotional responses

DISSOCIATIVE DISORDERS

- **Dissociative Amnesia (w/ or w/o Fugue):** inability to remember parts of the past as a result of trauma: if w/ fugue - following a traumatic event a person leaves, taking on a whole new life & personality w/ no memory of the previous one
- **Dissociative Identity Disorder:** formerly multiple personalities – person fractures into several distinct personalities who normally have no awareness of each other. - **NOT SCHIZOPHRENIA!**

Causes of Dissociative Disorders

- Usually result of severe trauma or stress (often childhood abuse)

OBSESSIVE COMPULSIVE DISORDERS

- **Obsessive-compulsive Disorder (OCD):** person is overwhelmed with both:
  - **Obsessions:** persistent unwanted (intrusive) thoughts (did I leave the stove on?)
  - **Compulsions:** intrusive repetitive behaviors (hand washing, checking)
- **Hoarding:** subtype of OCD – compelled to accumulate and keep things

Causes of Obess. Compulsive Disorders

- Biology: Genetic, overactive frontal lobe
- Behavioral: learned associations
- Cognitive: maladaptive thought patterns

TRAUMA AND STRESS RELATED DISORDERS

- **Post-traumatic stress disorders (PTSD):** flashbacks, hypervigilance (always on the look out for something terrible to happen), severe anxiety, insomnia, emotional detachment, hostility
- **Cause –** stressful / traumatic event (not just war – can be an accident, natural disaster, unexpected injury / loss)

PERSONALITY DISORDERS

- **Marked by** *disruptive, inflexible, enduring behavior patterns*

Cluster A: - odd / eccentric cluster

- **Paranoid:** distrust / suspicious about people's motives
- **Schizoid:** no interest in relationships, lack emotions (think *devoid*) – similar to negative symptoms of schizophrenia
- **Schizotypal:** discomfort w/ social interactions, extremely superstitious, delusion thinking, unusual speech – similar to pos. symptoms of schizophrenia

Cluster B – dramatic, emotional, erratic

- **Antisocial:** NOT "avoidant of socialization" – more like "anti-society" – disregard for others, manipulative, breaks laws
- **Borderline:** instable interpersonal relationships & self-image
- **Histrionic:** excessive emotionality & attention seeking
- **Narcissistic:** need for admiration & lack of empathy

Cluster C – anxious and fearful cluster

- **Avoidant:** severe social anxiety, feel inadequate, w/ a strong want for intimacy
- **Dependent:** helpless, submissive, need to be taken care and for constant reassurance, can't make decisions for self
- **Obsessive-compulsive:** preoccupation w/ orderliness, perfectionism, control (what people *think* of as OCD)

TREATMENT OF DISORDERS

Ethics of Therapy from the APA

- Nonmaleficience – do no harm
- Fidelity – uphold high standards for you and other therapists
- Integrity – don't deceive, misrepresent, be honest about your abilities
- Respect for people's rights and dignity – don't be biased

- **Deinstitutionalization** – release of large amount of ppl from asylums due to better medications
- **Decentralized approach** – combo of meds and therapy, minimal hospitalization

Psychodynamic Perspective: trying to uncover the unconscious

- *Free association:* say aloud anything that comes to mind unprompted
- *Dream interpretation:* analyze hidden meaning in dreams

Biological Perspective: treatment w/ medicine and psychosurgery

Psychoactive medications:

- **Anti-psychotics:** *decrease dopamine*
  Side effects: *TARDIVE DYSKINESIA:* hand tremors (due to lack of dopamine)
  - Treats schizophrenia
- **Anti-depressants:** *increase serotonin and /or norepinephrine* through REUPTAKE inhibition.
- **Anti-anxiety drugs:** *increase GABA*
- **Lithium:** "mood stabilizer" for Bipolar

Other Interventions:

- **Electroconvulsive therapy (ECT):** send electricity to induce minor seizures. Used (*rarely)* to treat depression (*when nothing else works)*. Thought to "reboot" the brain
- **Psychosurgery (frontal lobotomy):** frontal lobe is surgically destroyed. Used to treat depression or violent individuals – almost never used anymore
- **Transcranial magnetic stimulation (TMS):** targeted magnetic fields to stimulate brain activity
  - Treats depression (safer form of ECT)

AP exam favorite

Humanistic Perspective: focus on person

- **Person-centered therapy:** encourage client to discover own solutions & understand self through -
  - *Active listening* – thoughtfully engaging w/ clients emotions and message (shows interest, asks questions, restates)
  - *Unconditional pos. regard* – acceptance of faults

- **Cognitive Perspective:** fixes neg. thinking
- Focus on the *Cognitive triad –*
  - Neg. views about self (I'm defective)
  - Neg view about world (its cruel)
  - Neg view about future (hopeless)
- Fix w/ **Cognitive restructuring:** learn to identify disordered thinking and change it

- **Behavioral Perspective:** applied behavioral analysis – applies classical /
- operant conditioning to fix behvs
- **Systematic desensitization:** associate a pleasant relaxed state w/ gradually increasing anxiety triggering stimuli (create a desensitization hierarchy – ex. List of things about flying that makes you nervous – step through each one till you can do it)

- **Aversive conditioning:** associate an unpleasant experience (e.g. nausea) w/ an unwanted behavior (e.g. drinking alcohol)
- **Biofeedback:** receive feedback on heartrate, blood pressure, learning to control it to help w/ anxiety and depression
- ***o*** **Token economies:** use behavior modification (reward good behaviors w/ token reinforcers to be exchanged)

Combined Perspectives – Cognitive Behavioral therapy:

- Dialectical behavior therapy: talk therapy, adapted for intense emotions, help ppl understand how thoughts affect emotions and behvs – originally for personality disorders, adapted for depression / anxiety
- **Rational-emotive therapy:** identify unhealthy thought / behavior patterns and replace w/ new

Other Techniques:

- ***o*** **Group therapy:** therapy w/ a group – gives diverse perspectives, supportive environment w/ like ppl – lacks indiv. Care
- ***o*** **Hypnosis:** used for pain control and anxiety – does not retrieve memories or cause regression

Created by C.Thompson; 2013 - updated November 2024

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AP Exam Formatting:

PART I: Total Weight 66.7%

75 Multiple Choice Questions – 90 minutes

10 minute break

PART II: Total Weight 33.3%

TWO FRQs – 70 Minutes

- **Article Analysis Question**
- **Evidence Based Question**