

AAMC Content Outline – Psychology and Sociology

Foundational Concept 6: Biological, psychological, and sociocultural factors influence the ways that individuals perceive, think about, and react to the world

Content Category 6A: Sensing the environment:

Sensory Processing (PSY, BIO)

Sensation

Encoding of sensory stimuli

- **Stimulus Modality** – type of stimulus, based on *which type of receptors* is firing (vision, balance, etc)
- **Sensory interaction** -
- **Stimulus location** – communicated by the *receptive field* of the sensory receptor sending the signal
 - localization can be improved by overlapping receptive fields of neighboring receptors
 - discrimination can be improved by lateral inhibition of neighboring receptors
- **Stimulus intensity** – coded by the *frequency* of action potentials
- **Stimulus duration** – may or may not be coded explicitly
 - **Tonic receptors** – fire action potentials as long as the stimulus continues
 - subject to adaptation—frequency of APs decreases as the stimulus continues at the same level
 - **Phasic receptors** – only fire action potentials when the stimulus begins, do not explicitly communicate the duration of the stimulus (It's only a phase)
 - important for communicating changes in stimuli
 - adapt immediately if a stimulus continues at the same level

Proprioception – awareness of self (body position); kinesthetic sense

- muscle spindle – mechanoreceptor that is an example of an important proprioceptor; detects muscle stretch
- Golgi tendon organs – monitor tension in tendons
- joint capsule receptors – detect pressure, tension, and movement in the joints
- **Threshold**
- **Absolute Thresholds** – minimum stimulus intensity required to activate a sensory receptor **50% of the time** and thus detect the sensation)
- **Difference Thresholds** – minimum noticeable difference between any two sensory stimuli, **50% of the time**
- **Weber's Law (PSY)**
 - **Weber's Law** – two stimuli must differ by a *constant proportion* in order for their difference to be perceptible. For example, two objects must differ in weight by 2%, two lights must differ in intensity by 8%, etc
- **Signal detection theory (PSY)**
- **Signal Detection Theory** – attempts to predict how and when someone will detect the presence of a given sensory stimulus amidst all of the other sensory stimuli in the background (the signal and the noise). Four possibilities: a hit (signal present and detected), a miss (signal present and not detected), a false alarm (signal not present but detected), and a correct rejection (signal not present, not detected)
- **Sensory adaptation**
 - Decrease in firing frequency when the intensity of a stimulus remains constant
 - nociceptors, however, do not adapt under any circumstance
- **Psychophysics**
- the branch of psychology that deals with the relationships between physical stimuli and mental phenomena
- Psychophysics has been described as "the scientific study of the relation between stimulus and sensation"^[1] or, more completely, as "the analysis of perceptual processes by studying the effect on a subject's experience or behavior of systematically varying the properties of a stimulus along one or more physical dimensions"
- **Distal Stimulus** – objects and event out in the world about you. **Proximal stimulus** – patterns of stimuli from these objects and events that actually are registered by the sensory receptors. Most of the time, perception reflects the properties of distal objects and events very accurately, much more accurately than you might expect from the apparently limited, varying, unstable pattern of proximal stimulus the brain gets
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Sensory receptors

- **Sensory pathways**
- Axons cross over in the spine to other side
 - Processed in the cerebral cortex on the other side from where the stimulus comes in
- For cranial sense (with receptors in the face), crossing over still happens in the brain stem
- If one side of the brain is injured, there is a loss of somatosensation on the other side

- Types of sensory receptor
- Exteroceptors – receptors that detect stimuli from outside world
- Interoceptors – detect internal stimuli
- **Mechanoreceptors** – respond to mechanical disturbances
 - Pacinian Corpuscle – shaped like an onion, depolarized from firm pressure
 - Auditory hair cell – vibrations from sound waves
 - Vestibular hair cells – located within special organs called semicircular canals, also found in the inner ear—detect acceleration and position relative to gravity
 - stretch receptors
- **Chemoreceptors** – respond to particular chemicals
 - olfactory receptors – detect airborne chemicals and allow us to smell things
 - gustatory receptors – taste buds
 - Autonomic chemoreceptors in the walls of the carotid and aortic arteries – respond to changes in arterial pH, CO₂ and O₂ pressure levels
- **Nociceptors** – pain receptors, detects chemical signs of tissue damage
 - Autonomic or somatic pain receptors
 - Autonomic – frequently give a sensation of dull, aching pain
 - **Referred pain** – illusion of pain on the skin, when their nerves cross paths with somatic afferents from the skin
- **Thermoreceptors** – stimulated by change in temperature, autonomic and somatic examples
 - cold-sensitive, warm-sensitive, and thermal nociceptors – detect painfully hot stimuli
- **Electromagnetic receptors** – stimulated by electromagnetic waves
 - rod and cone cells of the retina
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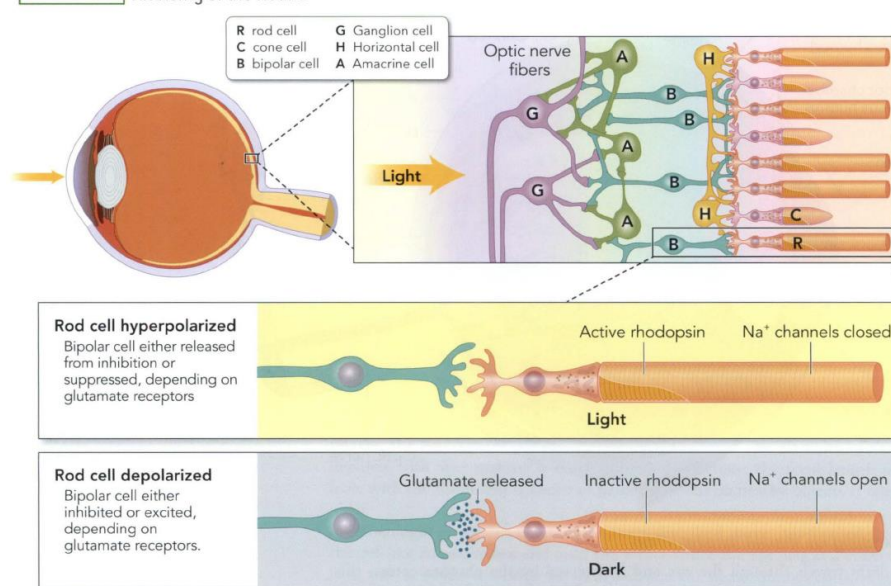
Vision (PSY, BIO)

Structure and function of the eye

Visual processing

- Visual pathways in the brain
- Light → cornea → anterior chamber → pupil → lens → vitreous chamber → retina (rods and cones) → bipolar cells → ganglion cells (optic nerve) → thalamus → occipital lobe
- **Macula** contains **fovea centralis**—contains only cones and is responsible for extreme visual acuity
- Rods and cones contain special pigment proteins called **opsin**
- Rods respond equally to all visible wavelengths, but cones only respond to specific wavelengths
 - each opsin is bound to one molecule and contains one molecule of retinal, which is derived from vitamin A
 - In the dark, retinal has several trans double bonds, and one cis double bond—this conformation keeps sodium channels open, depolarized
 - In light, **retinal is converted to the all-trans form**, which closes sodium channels, hyperpolarization
 - Prevented from releasing glutamate, which originally inhibits bipolar cells
 - **bipolar cell can depolarize, and depolarize ganglion cells**
- Night vision is accomplished by the rods, which are more sensitive to dim light and motion, concentrated in the periphery of the retina
- Normal vision – emmetropia
- myopia – nearsightedness – corrected by diverging lens
- hyperopia – farsightedness, corrected by converging lens
- Presbyopia – inability to accommodate (focus) – results from loss of flexibility of lens, which occurs with aging
 - Once light travels through the eye and is detected by the photoreceptors, info must be conveyed to higher levels of the nervous system
 - after light strikes cones and rods, series of events leads to hyperpolarization of the membrane of the photoreceptor
 - has an inhibitory effect by reducing the rate of neurotransmitter release
 - glutamate – usually excitatory, but not for the cells that receive it from photoreceptors
 - Bipolar cells – may be inhibited or excited by changes in amount of glutamate released by photoreceptors
 - different bipolar cells respond to different receptive fields

- bipolar cells **also affected by signals from horizontal cells**, which provide “horizontal” information from photoreceptors at the edge of the bipolar cell’s receptive field
 - If bipolar cells experience an overall excitatory effect from both the vertical and horizontal inputs, they release neurotransmitter at an increased rate, producing an excitatory effect on the ganglion cells—these are the sensory neurons that finally produce action potentials
- The axons of ganglion cells gather to form the optic nerve, which leaves the eye to convey visual information to the brain
 - Some of the axons from each eye cross to the opposite side of the brain
 - The optic nerve travels to **the lateral geniculate nucleus (LGN)** of the thalamus, which preserves the visual map created by the ganglion cells and projects this information to the primary visual cortex, in the **occipital lobe**



- Neurons project from the visual cortex along two visual pathways, which detect different features of visual stimuli
 - ventral (“what”) pathway travels to the **temporal lobe** towards the base of the brain and is involved in object recognition
 - dorsal (“where”) pathway projects to the **parietal cortex** and is more involved in perceiving the location of objects
 - these two pathways communicate with each other, and information from both is ultimately integrated in other areas of the brain

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- **Parallel processing (PSY)**
- **Parallel Processing** – where many aspects of a visual stimulus (such as form, motion, color, and depth) are processed simultaneously instead of in a step-by-step or serial fashion. The occipital lobe constructs a holistic image by integrating all of the separate elements of an object, in addition to accessing stored information.
- **Feature detection (PSY)**
- **Feature-detection theory** – neurons in the visual cortex fire in response to very specific information; feature detecting neurons are specific neurons in the brain that fire in response to particular visual features. *Feature-detection theory explains why a certain area of the brain is activated when looking at a face, and a different area is activated when looking at letters.*

Hearing (PSY, BIO)

Structure and function of the ear

- **Auricle/pinna and external auditory canal – Outer Ear**
- **Middle Ear – tympanic membrane (eardrum), ossicles (malleus, incus, stapes), oval window**
- **Inner ear – oval window, round window** – releases excess pressure, **cochlea, semicircular canals** (balance)
- **Eustachian tube (auditory tube)** – passageway from the back of the throat to the middle ear; functions to equalize pressure on both sides of eardrums, is the cause of the “ear popping” one experiences at high altitudes or underwater

Auditory processing (e.g., auditory pathways in the brain)

- Malleus receives the vibrations, function with the incus and stapes to amplify sound vibrations, vibrates oval window
- Pressure waves in the **perilymph** and **endolymph**, the fluids in the cochlea, cause vibration in the basilar membrane (covers lining of the cochlea)

- Basilar membrane is covered with hair cells, which have cilia, bend when the basilar membrane vibrates and moves across the **tectorial membrane (roof)**, open ion channels in the hair cells, results in neurotransmitter release
- Stimulates dendrites from **bipolar auditory afferent neurons**
- Basilar membrane, hair cells, and tectorial membrane = **Organ of Corti**
 - organ of Corti is thus within the cochlea
- **Pitch** – frequency, distinguished by regions of basilar membrane that vibrate, stimulation of different auditory neurons
 - Thick and sturdy near oval window, become thin and floppy near apex of the cochlea
 - Low frequency detected farthest away from oval window, high-pitched sounds stimulate hair cells near oval window
- **Loudness** – large vibrations **cause more frequent action potential in the auditory neuron**
- Sound is processed in the auditory cortex, located in the temporal lobe of the brain

Sensory reception by hair cells

Other Senses (PSY, BIO)

Somatosensation (e.g., pain perception)

Taste (e.g., taste buds/chemoreceptors that detect specific chemicals)

Smell

- Olfactory cells/chemoreceptors that detect specific chemicals
- Pheromones (BIO)
- Olfactory pathways in the brain (BIO)

Kinesthetic sense (PSY)

Kinesthesia, also referred to as kinesthesia, is the perception of **body movements**. It involves being able to detect changes in body position and movements without relying on information from the five senses.

Vestibular sense

The Vestibular Senses. Awareness of body **balance** and movement are monitored by the vestibular system. The vestibular senses (the sensations of body rotation and of gravitation and movement) arise in the inner ear; the sense organs are the hair cells that send out signals over the auditory nerve.

Perception (PSY)

Bottom-up/Top-down processing

Bottom-up Processing – begins with the sensory receptors and works up to the complex integration information occurring in the brain. For example, information enters the eyes in one direction (“bottom”), and then is turned in to an image by the brain (“top”). We tend to use bottom-up processing when we have no or little prior experience with a stimulus

Top-down processing – occurs when the brain applies experience and expectations to interpret sensory information

Perceptual organization (e.g., depth, form, motion, constancy)

of an object, in addition to accessing stored information.

Depth Perception – describes the ability to see in 3 dimensions despite the fact that images are imposed on the retina in only 2 dimensions. Appears to be largely innate

Binocular Cues – depth cues that depend on information received from both eyes and are most important for perceiving depth when objects are close to us in our visual field

Retinal Disparity – a binocular cue whereby the brain compares the images projected onto the two retinas in order to perceive distance. The **greater the difference or disparity between the two images on each retina, the shorter the distance to the observer.**

Convergence – a binocular cue that describes the extent to which the eyes turn inward when looking at an object. **The greater the angle of convergence or inward strain, the closer the object.**

Monocular Cues – Depth cues that depend on information that is available to either eye alone. They are important for judging distances of objects that are far from us because the retinal disparity is only slight.

- **Relative Size** – if objects are assumed to be the same size, the smaller one appears more distant
- **Interposition** – If one object blocks the view of another, we perceive it as closer
- **Relative Clarity** – we perceive hazy objects as being more distant than sharp, clear objects
- **Texture Gradient** – change from a coarse, distinct texture to a fine, indistinct texture indicates increasing distance
- **Relative height** – we perceive objects that are higher in the visual field as farther away
- **Relative motion** – as we move, stable objects appear to move as well. Objects that are **near to us appear to move faster than objects that are farther away.**
- **Linear Perspective** – Parallel lines appear to converge as distance increases. The greater the convergence, the greater the perceived distance.
- **Light and Shadow** – Closer objects reflect more light than distant objects. The dimmer of two identical objects seem farther away.

Gestalt principles

Gestalt Psychology – idea that the organized whole exceeds the sum of its parts. When humans perceive an object, rather than seeing lines, angles, colors, and shadows, they perceive the whole—a face or a table or a dog. Gestalt does not explain how the brain does this, merely that it does

- **Emergence** – when attempting to identify an object, we first identify its outline, which then allows us to figure out what the object is. *Only after the whole emerges do we start to identify the parts* that make up the whole, such as a dog's face or legs
- **Figure/Ground** – describes our perceptual tendency to separate the figure or object from everything else (background) based on a number of possible variables, like size, shadow, or contrast. According to this principle, everything that is not figure is ground. Consider the famous face-vase illusion. The Figure/Ground principle helps explain why it is impossible to perceive the image as both a vase and two faces simultaneously.
- **Multistability** – tendency of ambiguous images to pop back and forth unstably between alternative interpretations in our brains. Examples include the images of impossible object (How many legs does this elephant have?).

Gestalt Laws of Grouping – pg 77

- **Law of Proximity** – suggests that things that are near each other seem to be grouped together (for example, you would see a square composed of dots rather than 25 individual dots).
- **Law of Similarity** – things that are similar tend to be appear grouped together (viewing a column of dots and a column of squares, if they are next to each other)
- **Law of continuity** – the points that we perceive the smooth, continuous lines and forms, rather than disjointed one. (We see two overlapping circles rather than two black semicircular lines and a football shape in the middle)
- **Law of closure** – predicts that we will perceive things as complete a logical entity, because our brains fill in gaps in the information (seeing a triangle when looking at an image of unfilled concentric circles at the angles)
- **Law of common fate** – predicts that objects moving in the same direction or moving in synchrony are perceived as a group or unit (flock of birds moving together)
- **Law of connectedness** – predicts that things that are joined or linked or grouped are perceived as connected (square around nine circles in a square of 25 circles leads us to perceive that the 9 are in some way different)

Content Category 6B: Making sense of the environment

Attention (PSY)

Selective attention

Selective Attention – process by which one input is attended to and the rest are tuned out

Experiment – **Dichotic listening setup**

- Person wears headphones, different dialogue in each ear. He is told to ignore one of the dialogues (from the unattended channel) and pay attention to the other (from the attended channel). He will remember some of the message from the attended ear but lose almost everything from the unattended ear. *“Shadowing the attended ear”- repeat information right after it is presented*

Donald Broadbent – thought of the brain as a processing system with a limited capacity and sought to map out the steps that went into creating memories from raw sensory data

- **Broadbent Filter Model of Selective Attention** – inputs from environment first enter a sensory buffer. One of these inputs is then selected and filtered based on physical characteristics of the input (modality). This theoretical filter is designed to keep us from becoming overloaded with information. Other info stays in the sensory buffer briefly, but then quickly decays. It then goes to higher level processing, into the working memory. Only attended information passes through the filter.

Cocktail party effect – information of personal importance from previously unattended channels catches our attention

Attempts to explain Cocktail Effect, since Broadbent's model could not:

Anne Treisman's Attenuation Model – attempts to account for the cocktail party effect. She believed that rather than a filter, the mind has an attenuator, which works like a volume knob—it “turns down” the unattended sensory input, rather than eliminating it.

Selective Priming – suggests that people can be selectively primed to observe something, either by encountering it frequently or by having an expectation

implicit memory

Visual Attention:

Spotlight Model – explains visual attention: the spotlight is a beam that can shine anywhere within an individual's visual field. This beam describes the movement of attention, not the movement of the eyes. Shifts in attention actually precede the corresponding eye movements.

Binding Problem – the problem of how all the different aspects of an object are assembled together and related to a single object, rather than something else in the visual field. Visual attention is the solution to this problem. If we focus on a particular object, then the feature detectors' input of shape, color, etc. will all be related to the object being attended to. It has been found that when people are distracted while viewing two items, they may have issues with binding—the color of one item may be attributed to the other.

Divided attention

Divided Attention – concerns when and if we are able to perform multiple tasks simultaneously

Resource model of attention – says that we have a limited pool of resources on which to draw when performing tasks, both modality-specific resources and general resources. If the resources required to perform multiple tasks simultaneously exceeds the available resources to do so, then the tasks cannot be accomplished at the same time.

Three factors associated with performance on multi-tasking:

- **Task Similarity** – two tasks that involve using the same modality for processing (listening to a radio while trying to write a paper—they both use verbal input/output) results in difficulty.
- **Task Difficulty** – If a task is more difficult, it requires more resources in general and would be hard to do simultaneously with another task without passing resource capacity
- **Task Practice** – practice helps; it diminishes task resource demand so that we may free up those resources to allow for multitasking (experienced driver does not have trouble changing radio station while driving, while a novice might)

Cognition (PSY)

Information-processing model

Information-Processing Models – focuses on what happens in the human mind, tries to view it as a computer processor. Has a few basic assumptions: information is taken in from the environment and processed through a series of steps including attention, perception, and storage into memory. Along the way, information is systematically transformed.

Alan Baddeley's model – sought to better define short-term memory, which he renamed working memory

- Four components of working memory:
 - **Phonological loop** – allows us to repeat verbal information to help us remember it
 - this is what you use to remember a phone number that someone tells you when you have nothing with which to write it down
 - like auditory
 - **Visuospatial sketchpad** – serves a similar purpose for visuospatial information through the use of mental images
 - **Episodic buffer** – integrates info from phonological loop and visuospatial sketchpad with a sense of time, and to interface with long-term memory stores
 - For example, if a man sees a station wagon much like the one his father used to drive, he is able to make this connection through the interaction between his memory of his father's car and his current visual experience in the episodic buffer
 - **Central executive** – overseer of the entire process, orchestrates the process by shifting and dividing attention

Cognitive development

- Piaget's stages of cognitive development

Jean Piaget – one of the first developmental psychologists who studied cognitive development in children; argued against the prevailing belief that children were much like miniature adults in their thought processes and abilities. He thought that the process of cognitive development involved forming **schemas**, or mental frameworks that shape and are shaped by our experience. As we encounter new experiences, we either **assimilate** those experiences by conforming them into our existing schemas or we **accommodate** by adjusting our schemas to take into account the new experiences. For example, if a young girl thinks that there is a monster under her bed and her parents turn on the light to show that there is none, she can either **assimilate** this experience by believing that the monster exists but runs away from light, or **accommodate** her schema by agreeing that there must be no monster.

Piaget's theory: Four Developmental Stages:

- **Sensorimotor Stage:** birth to roughly age 2 – babies experience the world through their senses and movement, such as looking and touching. They learn about **object permanence**—the understanding that things continue to exist when they are out of sight. Also, they demonstrate **stranger anxiety**—distress when confronted with an unfamiliar person.
- **Preoperational Stage:** roughly age 2-7. Children learn that things can be represented through **symbols**, like words and images. They lack logical reasoning and are **egocentric**.
- **Concrete Operational Stage:** roughly age 7 to 11. Children learn to think logically. Learn principle of **Conservation** (same volume of water even if in different containers)
- **Formal Operational Stage:** roughly from age 12 to adulthood. Learn abstract reasoning and moral reasoning.
- Think about it. Babies from 0-2 want stuff like milk or blankets, meaning that they know that these exist even if they can't see them—hence, **object permanence**. Also, they fear people that aren't their mother or father—stranger anxiety. Your typical 2-7 year old preschooler / kindergartener wants everything for him or herself, and they aren't logical. However, they learn to speak at this stage, demonstrating their understanding of symbols. Elementary schoolers from 7-11 are at least smart enough to think rather logically (if it's straightforward), and they understand **conservation** (just remember that this is stage 3). 12 and beyond learn to think in abstracts, and are more moral (think Kohlberg's moral stages.)
- **Cognitive changes in late adulthood**

Cognitive Changes in Late Adulthood

- Elderly show memory declines in recall (without clues), but recognition seems to be intact
- Time-based tasks can be challenging, **like remembering to take medication 3 times a day**
- Older adults have slower information-processing abilities, like slower reaction times and speech
- No decline in crystallized intelligence, but a decline in fluid intelligence
- **Role of culture in cognitive development**

The role of Culture in Cognitive Development

- complex, reciprocal relationship

- Ex: Different languages results in different ways of thinking
- **Influence of heredity and environment on cognitive development**

Influence of Heredity and Environment on Cognitive Development

- Genetics provides the biological predispositions, or raw material that an individual has.
- Sociocultural influences then help mold and channel this potential into the development of particular capabilities.
 - Amount and quality of schooling and the richness of the child's environment can heavily influence performance on tests of cognitive functioning.
- Language – **Noam Chomsky** convincingly argues that children could not learn the wealth of vocabulary that they quickly acquire simply through environmental influence; genetics and heredity are also involved. At the same time, the quality of reading education influences a child's ability to acquire this skill.

Biological factors that affect cognition (PSY, BIO)

Biological Factors that Affect Cognition

- Frontal lobes play a role in executive functions, **hippocampus** is involved in the formation of new memories. In short, the interconnectivity of various regions in the brain underlies our cognitive skills.

Problem solving and decision making

- **Types of problem solving**

Problem Solving and Decision Making

- **Trial and error**
- **Algorithm** – step by step procedure
- **heuristics** – mental shortcuts
- **insight** – sudden thought in the shower
- **Barriers to effective problem solving**

Barriers to Effective Problem Solving

- **Confirmation Bias** – tendency to *search* only for information that confirms our preconceived thinking, rather than information that might not support it.
- Confirmation bias – tendency to favor information that confirms existing beliefs. Involves biases in the search for information and in the interpretation of evidence. Is stronger for emotionally charged topics
- **Fixation** – inability to see the problem from a fresh perspective
 - Results from the existence of a **mental set** – a tendency to fixate on solutions that worked in the past, even though they may not apply in the current situation
 - **functional fixedness** – tendency to perceive the functions of objects as fixed and unchanging
- **Approaches to problem solving**
- **Heuristics and biases (e.g., overconfidence, belief perseverance)**
- **Availability Heuristic** – can lead to errors in judgment, due to our reliance on our memory of specific, easily-recalled events—based more on specific examples, how readily particular examples come to mind) – **Beethoven vs Haydn**
- **Representativeness Heuristic** – generalizations about people and events (people are rude to you every time you went to Post Office you conclude that the post office has rude people)
- **Belief bias** – tendency to *judge arguments* based on what one believes about their conclusions rather than on whether they use sound logic—we accept conclusions that fit with our beliefs
 - Doctor killing his wife vs drug dealer killing his wife – much more inclined to readily believe that drug dealer killed his wife
- **Belief perseverance** – tendency to cling to beliefs despite contradictory evidence
- **Overconfidence** – overestimation of the accuracy of knowledge and judgements
- **Framing** – consumers more likely to buy meat advertised as 75% lean than labeled 25% fat

Intellectual functioning

- **Theories of intelligence**
- Theories:
- **Francis Galton** – first proposed a theory of general intelligence in the mid-1800s. Believed intelligence had a strong biological basis and could be quantified by testing certain cognitive tasks. Argued that intelligence is genetically determined.
- **Alfred Binet** – early 1900s, administered intelligence tests to schoolchildren in France, with the goal of developing a measure to determine who needed special education. His test was revised by a psychologist at Stanford and renamed the Stanford-Binet Intelligence Scale, better known as IQ.
- **Charles Spearman** – early 1900s, first coined the term general intelligence (g). Believed that intelligence could be strictly quantified through cognitive tests, and those who possessed high general intelligence could do well on lots of different measures of cognitive ability
- **Raymond Cattell** – mid 20th century, proposed two types of intelligence: fluid (Gf, ability to think on your feet) and crystallized (recall facts and apply learned information).

- **Howard Gardner** – 1980s, put forth a theory on multiple intelligences: logical, linguistic, spatial, musical, kinesthetic, naturalist, intrapersonal and interpersonal
- **Influence of heredity and environment on intelligence**
- **Behavioral Genetics** – attempts to determine the role of inheritance in behavioral traits
- **Twin studies** – compare traits in monozygotic and dizygotic twins. If identical twins share the phenotype more than fraternal twins (which is the case for most traits), genes likely play an important role
- **Adoption Studies** – creates two groups: genetic relatives and environmental relatives. Adopted individuals can be compared with both groups to determine if they are more similar to their genetic relatives or their environmental relatives. Adopted children have personalities more similar to their biological parents than their adopted parents.
- **Heritability** does not pertain to an individual, but rather to how two individuals differ; for example, the heritability of intelligence is 50%. This does not mean that genes are responsible for 50% of your intelligence, but rather is responsible for 50% of the difference between your intelligence and someone else's.
- **Transgenesis** – introduction of an outside gene to alter genotype while controlling for environment
- Genes and environment work together; not only do genes code for proteins, but they also respond to the environment
- Studies of twins, family members, and adopted children indicate that there is a significant heritability of intelligence. Scores on intelligence tests taken by identical twins correlate highly, while those of adopted children more closely resemble scores of their birth parents rather than their adoptive parents. However, malnutrition, sensory deprivation, and social isolation can affect normal brain development
- Variations in intellectual ability
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Consciousness (PSY)

States of consciousness

- **Alertness (PSY, BIO)**
- **Consciousness** – awareness that we have of ourselves, our internal states, and the environment
- Alertness and arousal are controlled by structure within the **brainstem**. These structures are known as the **reticular formation**.
- **Sleep**
 - **Stages of sleep**
- **Polysomnography (PSG)** – multimodal technique to measure physiological processes during sleep. Includes **electroencephalogram (EEG)**—measures of electrical impulses in brain), **electromyogram (EMG)**—measures of skeletal muscle movements), **electrooculogram (EOG)**—measure of eye movement)
- When a person is awake, but sleepy and relaxed, EEG shows **alpha waves**—low amplitudes and high frequencies—first indicators that person is ready to drift off.
- **Stage-1 sleep**—non-REM. EEG is dominated by **theta waves**—low to moderate intensity, intermediate frequency. EOG measures **slow rolling eye movements** and EMG measures moderate activity. Person becomes less responsive to stimuli and has fleeting thoughts
- **Stage 2 Sleep** – Denoted by change to two distinct wave patterns on EEG. Theta waves are intermixed with two patterns: K-complexes and sleep spindles. **K-complex** is **half-second long and is large and slow**, occurring as a single wave amongst theta waves. **Sleep spindles** are **bursts of waves**, with a frequency of 12-14 Hz and are moderately intense. Like K-complexes, do not last long: 0.5-1.5 seconds. **No eye movement**, EMG measures moderate activity. Decreased heart rate, respiration, and temperature.
- **Stage 3 and Stage 4 sleep** – a person transitions into slow wave deep sleep. **Delta waves** – **high amplitude, low frequency**. Signify the deepest level of sleep. Stage 4 experiences more delta waves than stage 3. **No eye movement**, moderate muscle movement. Heart rate and digestion slow, **growth hormones secreted**.
- **REM sleep** – final stage, characterized by **bursts of quick eye movements**. EEG measures waves that **most resemble the beta waves** seen in individuals when awake. However, these waves are sawtooth with low intensity and variable frequency, more jagged in appearance than beta waves. Almost no **skeletal muscle movement**. Called “Paradoxical sleep”—person physiologically appears to be awake, but they are pretty much paralyzed.
 - **Sleep cycles and changes to sleep cycles**
- It is possible to jump between various stages while sleeping. Average cycle is about 90 minutes. REM sleep are shortest early in the night, get longer as the night progresses. Deep sleep is longest early in the night and get less frequent. Infants spend much more time in REM, and need more sleep. We require less and less sleep as we age.
 - **Sleep and circadian rhythms (PSY, BIO)**
- **Circadian Rhythms** – biological waxing and waning of alertness over the 24 hour day. Most people feel alert mid-morning, experience a dip in energy early afternoon, and then feel alert again in the early evening. **Exposure to light stimulates a nerve pathway from the retina to the suprachiasmatic nucleus (SCN) in the hypothalamus**. The SCN signals other parts of the

brain, and is essentially our internal clock. Melatonin is a hormone made by the pineal gland. Darkness causes the SCN to signal the pineal gland to start producing melatonin, making you feel tired.

- Dreaming

- Dreaming usually occurs during the REM stage. Missing REM sleep for one night results in an increase in REM sleep later to make up for it—**REM rebound**. Freud believe that plotlines of dreams (**manifest content**) were symbolic versions of underlying **latent content**—unconscious drives and wishes. Other theories found that dreaming can improve learning and problem solving. The **activation-synthesis theory** suggests that dreams are byproducts of brain activation during REM sleep, and **dreams aren't that purposeful**.

- Sleep–wake disorders

Sleep Disorders

Dyssomnias – abnormalities in the amount, quality, or timing of sleep.

- **Insomnia** – most common sleep disorder, characterized by difficulty falling or staying asleep
- **Narcolepsy** – periodic, overwhelming sleepiness during waking periods that usually last 5 minutes. Caused by a dysfunction in the region of the hypothalamus that produces the neurotransmitter **hypocretin**.
- **Sleep apnea** – causes people to intermittently stop breathing during sleep. Can repeat hundreds of times a night.

Parasomnias – abnormal behaviors that occur during sleep. Tends to appear more in children.

- **Somnambulism** – sleepwalking. Tends to occur during slow wave sleep (Stage 3), usually during first third of the night.
- **Night terrors** – also occur during Stage 3 (unlike nightmares, which occur during REM). Person experiencing night terror may sit up or walk around, babble, and appear terrified, although **none of this is recalled in the morning**.
- **Hypnosis and meditation**

Hypnotism – social interaction in which hypnotist has a subject focus attention on what is said, relax and feel tired, and accept suggestions easily. Can promote recall of memories, but patient is also susceptible to creating **false memories**. Cannot force people to do extreme things against their will, such as murder. It works not by preventing sensory input, but by blocking attention to those sensory inputs

- **Dissociation theory** – suggests that hypnotism is an extreme form of divided consciousness—behaviors can occur on autopilot.
 - Have you ever driven somewhere and not recalled anything about the actual drive? Hypnotism may be an extended form of this normal dissociation
- **Social Influence theory** – people do and report what's expected of them. They are not consciously faking it, but are like actors who get caught up in their roles and thus behave in ways that fit them.

Meditation – may involve focusing intensely on one object of attention, such as breathing, or may broaden their attention and be aware of multiple stimuli. Has been successfully used to manage pain, stress, and anxiety disorders. **Mindfulness-based stress reduction (MBSR)** is a protocol commonly used in the medical setting to help alleviate stress.

Consciousness-altering drugs

- Types of consciousness-altering drugs and their effects on the nervous system and behavior

Consciousness-altering Drugs

Depressants – work by slowing down neural activity

- **Alcohol** – people more likely to be impulsive and hyperactive, but **it is the result of slowing of brain activity related to judgement and inhibition**. Affects skilled motor performance (**cerebellum**). Excessive drinking can lead to memory blackouts for recent memories. Also suppresses **REM sleep**. **Overdose can cause death by depressing the respiratory control centers in the medulla to the point by breathing ceases**. Works by stimulating **GABA** and **dopamine** systems. GABA is an inhibitory neurotransmitter and is associated with reduced anxiety, while dopamine leads to the feeling of minor euphoria.
- **Barbiturates (tranquilizers)** – depress the sympathetic nervous system. Often prescribes as sleep aids. Dangerous in combination with alcohol and prone to overdose.
- **Opiates** – derivatives of opium (like morphine and heroin). Depress neural functioning. Temporarily reduce pain by mimicking the brain's own pain relievers (endorphins. Pain is replaced with a blissful feeling. Prolonged use leads the brain to stop producing endorphins, leading to painful withdrawal.

Stimulants – include caffeine, nicotine, cocaine, and amphetamines (“speed”). Typically work by either increasing the release of neurotransmitter, reducing the reuptake of neurotransmitter, or both. Overall affect is to speed up body functions, resulting in increased energy, respiratory rate, heart rate, and pupil dilation. **Cocaine** works by causing a “rush,” a release of the brain's supply of neurotransmitters including dopamine, serotonin, and norepinephrine. Creates a brief period of intense pleasure, followed by a depressive crash. **MDMA** is a stimulant and mild hallucinogen. Triggers release of dopamine and serotonin, as well as blocking serotonin reabsorption. Causes emotional elevation, but long-term effects include damage to serotonin-producing neurons.

Hallucinogens – also known as psychedelics, distort perceptions in absence of any sensory input. Include LSD and marijuana. Marijuana relaxes and disinhibits, but also acts as a hallucinogen by amplifying sensory perceptions. lowest risk of dependence

- **Drug addiction and the reward pathway in the brain**
- **Drug Addiction** – compulsion to use a drug repeatedly.
- **Psychological dependence** – often associated with the use of a drug in response to painful emotions related to depression or anxiety.

- **Physical dependence** – evidenced by withdrawal, an uncomfortable and often physically painful experience without use of drug.
- **Addiction** is biologically based. Enjoyable behaviors produce activity in dopamine circuits in the brain, most notably in the **nucleus accumbens**, the pleasure center of the brain. Many addictive drugs share the characteristic of stimulating the release of dopamine in the **nucleus accumbens**.
- **Craving symptoms** (strong desire to ingest a drug)

Memory (PSY)

Encoding

- Process of encoding information
- Three main stages of memory: encoding, storage, and retrieval
- **Encoding** – process of transferring sensory information into our memory system
- **Serial Position Effect** – occurs when someone attempts to memorize a series, such as a list of words. In an immediate recall condition, the individual is more likely to recall the first and last items on the list—known as the **primacy effect** and the **recency effect**. First items may be more easily recalled because they had the most time to be encoded and transferred to long-term memory. Last items may be more easily recalled because they may still be in the phonological loop, and thus may be readily available. When the individual is asked to recall the list at a later point, the individual tends to remember only the first items well.
- Processes that aid in encoding memories
 - Processes that Aid in Encoding Memories
 - **Mnemonic** – any technique for improving retention and retrieval of information from memory.
 - **Rehearsal** – use of the phonological loop
 - **Chunking** – strategy in which information to be remembered is organized into discrete groups of data.
 - **Hierarchies for organization** – organizing into different hierarchies and groups
 - **Depth of processing** – Information that is thought about at a deeper level is better remembered.
 - Use of Short words or phrases that represent longer strings of information.
 - **Dual Coding Hypothesis** – indicates that it is easier to remember words with associated images than memorizing either words or images alone
 - **Method of Loci** – imagining moving through a familiar place, and in each place, leave a visual representation of a topic to be remembered.
 - **Self-reference effect** – it is easier to remember things that are personally relevant—can be linked to existing memories.

Storage

- Types of memory storage (e.g., sensory, working, long-term)

Types of Memory Storage

Sensory Memory – initial recording of sensory information in the memory system—very brief snapshot that quickly decays

- Iconic Memory – brief photographic memory for visual information, which decays in a few tenths of a second
- Echoic memory – memory for sound, which lasts for about 3-4 seconds.
- Information from sensory memory decays *rapidly if not passed through Broadbent's filter into short-term memory*
 - So sensory memory is before the filter (which is before higher level processing and working memory), before attention is given to it

Short-term memory – limited in duration and capacity. Capacity for **adult is around seven items, plus or minus 2**. Even chunking is still subject to this limit of about seven chunks. Information in short-term memory is retained only for about **20 seconds**, unless it is actively processed so that it can be transferred into long-term memory

Long-term memory is information that is retained sometimes indefinitely; it is believed to have an infinite capacity

Short-term memory is different from working memory in that it is strongly correlated with the **hippocampus**, and is where *new information* sought to be remembered resides temporarily and is then encoded to long-term memory or forgotten. **Working memory, which is strongly correlated with the prefrontal cortex**, is a storage bin used to hold memories (short or long term) that are needed at a particular moment in order to process information or solve a problem.

Implicit/procedural memory refers to conditioned associations and knowledge of how to do something; also called **nondeclarative** memory; is not conscious and may be difficult to vocalize; is **most commonly associated with the basal ganglia, cerebellum** – receives input from the cortex and stores it, but **does not send that information back to the cortex for conscious awareness**

- Also associated with priming

Explicit/Declarative memory – involves being able to declare or voice what is known. Explaining a concept involves explicit memory, while not having practiced it indicates a lack of implicit memory.

- Semantic memory – memory for factual information, such as the capital of England
- Episodic memory – autobiographical memory for information of personal importance, such as the situation surrounding a first kiss

- Brain structures involved in memory include the hippocampus, cerebellum, and amygdala.
- **Hippocampus** – necessary for the encoding of new explicit memories, associated with long-term memories
 - Patients with hippocampal damage may not have declarative memory for a skill they have recently learned, yet may be able to demonstrate the skill
 - infantile amnesia – implicit memories that infants make are retained indefinitely, but explicit memories are not retained beyond age 4 (hippocampus is not fully developed)
- **Cerebellum** – involved in learning skills and conditioned associations (implicit memory)
- **Amygdala** – involved in associating emotion with memories, particularly negative memories.
- **Semantic networks and spreading activation**
- Semantic Networks and Spreading Activation
- It is believed that information is stored in long-term memory as an organized network. In this network exist individual ideas called **nodes**, which can be thought of like cities on a map. Connecting these nodes are **associations**, which are like roads connecting the cities. The strength of an association is related to how frequently and how deeply the connection is made. *Retrieval of information improves if there are more and stronger connections to an idea.*
- A **node** does not become activated until it receives input signals from its neighbors that are strong enough to reach a **response threshold**. The effect of input signals is cumulative: the response threshold is reached by the **summation** of input signals from multiple nodes. Once the response threshold is reached, the node “fires” and sends a stimulus to all of its neighbors, contributing to their activation. In this way, the activation of a few nodes can lead to a pattern of activation within the network that spreads onward—this is called **spreading activation**. This explains why “hints” may be helpful – they serve to activate nodes that are closely connected to the node being sought after, which may therefore contribute to that node’s activation.

Retrieval

- Recall, recognition, and relearning
- Retrieval
- **Recall** – ability to retrieve information
 - **Free Recall** – involves retrieving the item “out of thin air”
 - **Cued Recall** – involves retrieving the information when provided with a cue
- **Recognition** – involves identifying specific information from a set of information that is presented
- **Relearning** – involves the process of learning material that was originally learned. Once we have learned and forgotten something, we are able to relearn it more quickly than when it was originally learned.
- **Retrieval cues**
- Retrieval Cues – provide reminders of information
- Prior activation of closely related nodes and associations is called **priming**, which often occurs without our awareness.
- **The role of emotion in retrieving memories (PSY, BIO)**
- Role of Emotion in Retrieving Memories
- **Mood dependent memory** – phenomenon that describes that what we learn in one state is most easily recalled when we are once again in that emotional state. Thus, when a person is depressed, events in the past that were sad are more likely to emerge to the forefront of his mind.
- **Processes that aid retrieval**
- Remembering information is achieved through the process of **paying attention, encoding, retaining information (storage), and finally retrieval**. Failure along any step of this process can cause **forgetting**.

Forgetting

- Aging and memory
- Aging and Memory
- Decline in memory is influenced by how active the person is: increased activity (both physical and mental) is a protective factor against neuronal atrophy. Also, due to having a more extensive memory network, retrieval can also become trickier with time. They may have trouble with **prospective memory, remembering to do things in the future**.
- The *ability to encode new memories* of events or facts and working memory shows decline
- Episodic memory is especially impaired in normal aging; some types of short-term memory are also impaired
- Source information also suffers
- **Memory dysfunctions (e.g., Alzheimer’s disease, Korsakoff’s syndrome)**
- Memory Dysfunctions
- **Anterograde amnesia** – caused by damage to the hippocampus, marked by an inability to encode new memories
- **Retrograde amnesia** – inability to recall information that was previously encoded, also caused by damage to hippocampus
- **Alzheimer’s** – may involve an inability to manufacture enough of the neurotransmitter acetylcholine, which results in, among other things, neuronal death in the hippocampus.
- **Korsakoff’s syndrome** – chronic memory disorder caused by severe deficiency of thiamine (vitamin B-1)
 - Most commonly caused by alcohol misuse

- Thiamine helps brain cells produce energy from sugar. When levels fall too low, brain cells cannot generate enough energy to function properly. As a result, Korsakoff syndrome may develop
- causes problems *learning new information, inability to remember recent events and long-term memory gaps*
- Memory problems may be strikingly severe while other thinking and social skills are relatively unaffected
 - for example, individuals may seem to carry on a coherent conversation, but moment later be unable to recall that the conversation took place
 - Those with Korsakoff syndrome may “confabulate,” or make up, information they can’t remember. They are not “lying” but may actually believe their invented explanations
- Decay
 - **Memory decay** results in a failure to retain stored information. Does not happen in a linear fashion—the forgetting curve indicates that the longer the retention interval, or the time since the information was learned, the more information will be forgotten, with the most forgetting occurring rapidly in the first few days before leveling off. It is possible that brain cells involved in the memory may die off, or perhaps the associations among memories need to be refreshed in order not to weaken.
- Interference
 - Interference – can result in a failure to retrieve information that is in storage.
 - **Proactive interference** – happens when information previously learned interferes with the ability to recall information learned later. For example, remembering where you had parked your car in a parking garage will be more difficult once you have parked in that parking garage for months in different locations.
 - **Retroactive interference** – happens when newly learned information interferes with the recall of information learned previously. For example, someone who has moved frequently may find that learning new addresses and directions interferes with his ability to remember old addresses and directions
 - **Positive transfer** – when old information facilitates the learning of new information. For example, learning how to play football may make it easier for someone to learn how to play rugby.
- Memory construction and source monitoring
 - Memory Construction and Source Monitoring
 - Our memories are far from being perfect snapshots of actual experience. Sometimes the information that we retrieve is based more on **schema**—a mental blueprint containing common aspects of some part of the world (if asked to describe what your 4th grade classroom looked like, you may remember chalkboard, chalk, desks, etc, based on your schema for such a classroom). Thus, we tend to “fill in the blanks” when constructing memories. We may also unknowingly alter details. After people are exposed to subtle misinformation, they are usually susceptible to the **misinformation effect**, a tendency to misremember. Individuals may also misremember when asked to repeatedly imagine nonexistent actions and events—simply repeatedly imagining that one did something can create **false memories** for an event. When recalling information, people are also susceptible to forgetting one particular fact—the information’s source. This is an error in **source monitoring**. For example, you may recognize someone, but have no idea where you have seen him before.
 - **Flashbulb memory** - subjectively vivid, compelling memories of details associated with reception of news about emotionally arousing events

Changes in synaptic connections underlie memory and learning (PSY, BIO)

- Neural plasticity
 - Changes in synaptic connections underlie memory and learning. The process of forming memories involves electrical impulses sent through brain circuits. *Somehow, these impulses leave permanent neural traces that are physical representations of information.*
 - **Neural plasticity** – refers to the malleability of the brain’s pathways and synapses based on behavior, the environment, and neural processes. For example, shortly after someone becomes blind, neurons devoted to vision take on different roles, improving other sensory perception.
 - **Neurogenesis**—the birth of new neurons, has been found to occur to a small extent in the hippocampus and cerebellum. Previously thought impossible.
 - **Neural nets** – patterns of activation. Nearby neurons that fire impulses simultaneously form associations with each other. If any part of the neural net is activated, a memory may be recalled. The process of learning and memory through the lifetime does not involve enlarging of the brain or gaining of neurons, but rather involves increased interconnectivity of the brain through increasing the synapses between existing neurons.
- Memory and learning
- Long-term potentiation
 - Persistent strengthening of synapses based on recent patterns of activity

Language (PSY)

- Theories of language development (e.g., learning, Nativist, Interactionist)
- **Behaviorists** who argue that language is just another example of conditioned behavior are **empiricist** in their approach, believing that the study of psychology should focus on directly observable environmental factors as opposed to abstract mental states. **Nativists**, who argue that language is a human ability prewired into the brain, are **rationalist** in their

approach—they hold that certain ideas and capabilities cannot come from experience and must be innate. Still others take a **materialist** approach to language, believing that we should only **look at what is happening in the brain** when we study thought and words.

- Social interactionist theory is an explanation of language development emphasizing the role of social interaction between the developing child and linguistically knowledgeable adults. It is based largely on the socio-cultural theories of Soviet psychologist, Lev Vygotsky.
- Theories of Language Development
- Language acquisition- the way infants learn to understand and speak in their native language
- **B.F. Skinner's behaviorist model** of language acquisition—holds that infants are trained in language by **operant conditioning**. Argued that language use is a form of behavior like any other
- **Noam Chomsky** – suggested that we all possess an innate feature unique to the human mind that allows people to gain mastery of language from limited exposure during the sensitive developmental years in early childhood. This idea was named “**universal grammar**”. Chomsky provided no anatomical evidence for the exact location or structure of this language acquisition device.
- **Influence of language on cognition**
- Influence of Language on Cognition
- Some believe that speech is not developmentally equivalent to thought.
- **Linguistic relativity hypothesis (Sapir Whorf)** – asserts that not only do language and thought overlap, but cognition and perception are determined by the language one speaks. Native speakers in different language groups conceptualize the world differently.
- **Brain areas that control language and speech (PSY, BIO)**

Different Brain Areas Control Language and Speech

Broca's area – located in dominant hemisphere (usually left) of the frontal lobe of the brain, involved in the complicated process of speech production.

- Broca's aphasia – injury to this area, leading to the loss of the ability to speak. People know what they want to say, but are unable to say it.

Wernicke's area – located in the posterior section of the temporal lobe in the dominant hemisphere, involved in the comprehension of speech and written language

- Wernicke's aphasia – do not have a problem producing speech, but are incapable of producing intelligible, meaningful language. The speech production retains a natural sounding rhythm and syntax, but is completely meaningless

Emotion (PSY)

Three components of emotion (i.e., cognitive, physiological, behavioral)

Physiological arousal – physical aspect of emotion, excitation of the body's internal state (heart pounding, palms sweaty, breathing rapid)

Behavioral aspect – screaming, brining hands over your mouth

Cognitive Aspect – an appraisal or interpretation of the situation describes how the situation is interpreted or labeled.

Many emotions share the same or very similar physiological and behavioral responses; it is the mind that interprets differently

Universal emotions (i.e., fear, anger, happiness, surprise, joy, disgust, and sadness)

Universal Emotions: Happiness, Sadness, Surprised, Fear, Disgust, Anger (HSSFDA)

Most people can readily identify these emotions simply by observing facial expressions - universal

Adaptive role of emotion

Adaptive Role of Emotion – performance and emotional arousal

Yerkes-Dodson Law – relationship between performance and emotional arousal is a U-shaped correlation: people perform best when moderately aroused

Theories of emotion

- **James-Lange theory** : Stimulus → physiological → emotion
- **James-Lange Theory** – proposes that first we experience the physiological response and then the emotion. Suggests that the emotional experience is the result of the physiological response. Evidence to back it up: breathing patterns can lead to certain emotions. Does not explain all scenarios. Problems: it assumes that each emotion originates from a distinctive physiological state, but emotions share very similar physiological profiles. Also, the physiological state can be interpreted differently based on context.
- **Cannon-Bard theory** : Stimulus → Physiological : Emotion
- **Cannon-Bard Theory** – criticizes James-Lange theory. Proposes instead that in response to a stimuli, experience of the emotion and physiological/behavioral response occurs at the same time, **independently**. A problem arises because it fails to explain how controlling for physiological responses (i.e. breathing) can help make us feel calm.
- **Schachter-Singer theory**: Stimulus → Physiological → Cognition → Emotion

- **Schachter-Singer Theory** – Stimulus first produces a physiological response, which we then interpret cognitively to produce an emotion. Like the James-Lange Theory, it proposes that physiological response comes first after stimulus, but emotions *aren't a one-to-one correlate* of the physiological response.

The role of biological processes in perceiving emotion (PSY, BIO)

- Brain regions involved in the generation and experience of emotions
- Biology in Emotion
- Widespread areas of the brain appear to be associated with specific emotions. Instead of emotion centers, there appear to be emotional circuits which involve many brain structures.
- The role of the limbic system in emotion

Limbic System – collection of brain structures that lies on both sides of the thalamus; appear to be primarily responsible for emotional experiences.

Amygdala – main structure involved in emotion in limbic system; an almond-shaped structure deep within the brain. Can communicate with the **hypothalamus** (controls physiological aspects of emotion), and prefrontal cortex (behavioral aspects of emotion)

Hippocampus – structure in limbic system that plays a key role in the formation of memories. When memories are formed, often the emotions that are associated with these memories

The **Olfactory bulb** is also a part of the limbic system, which is why smell is so essential to our processes of memory

The **prefrontal cortex** is associated with a reduction in emotional feelings, the soft voice that calms down the amygdala

- **Phineas Gage** – railroad worker who in an accident, lost a part of his prefrontal cortex. He became impulsive, unable to stick to plans, and unable to demonstrate empathy.
- Emotion and the autonomic nervous system
- Hypothalamus
 - SNS and PNS
- Physiological markers of emotion (signatures of emotion)

Stress (PSY)

The nature of stress

- Appraisal
- **Appraisal** – how a stressor is interpreted by the individual. When stressors are appraised as challenges, they can be motivating. If they are appraised as threatening aspects of our identity, well-being, or safety, they cause severe stress
- Different types of stressors (e.g., cataclysmic events, personal)

Different types of Stressors

- **Catastrophes** – unpredictable large-scale events
- **Significant life changes** – moving, job, marriage, death
- **Daily hassles** – everyday irritations in life including bills, traffic, etc

Learned helplessness – sense of exhaustion and lack of belief in one's ability to manage situations

- Effects of stress on psychological functions
-

Stress outcomes/response to stressors

- Physiological (PSY, BIO)
- Physiological Response to Stressors
- **Sympathetic Nervous System** – release of epinephrine and norepinephrine, fast-acting
- **Hypothalamus** – releases CRH, which stimulates the anterior pituitary to release ACTH, which signals adrenal cortex to release Cortisol, which shifts the body from using sugar as a source of energy to using fat instead—helps keep blood sugar levels high for the brain. **Prolonged cortisol release can lower immune response.**
- Emotional
- Emotional stresses can be correlated with worse medical outcomes. For example, anger can trigger cardiac events such as heart attacks, arrhythmias, and sudden death
- High levels of stress can contribute to the development of anxiety and depressive disorder
- Behavioral
- Individual may respond differently to the same stressor depending on the circumstances
 - sometimes we confront stressful situations, while at other times we avoid them
 - PTSD – involves avoidance, hyperarousal, and re-experiencing

Managing stress (e.g., exercise, relaxation, spirituality)

Emotional and behavior responses are also complicated and important

Aerobic exercise is an effective way of coping with stress.

Biofeedback – means of recording and feeding back information about subtle autonomic responses in an attempt to train the individual to control those involuntary response. Like, people can be trained to adjust their muscle tension, heartbeats, and respiratory rates.

Social support – associated with lower blood pressure, lower stress hormones, and stronger immune system

Foundational Concept 7

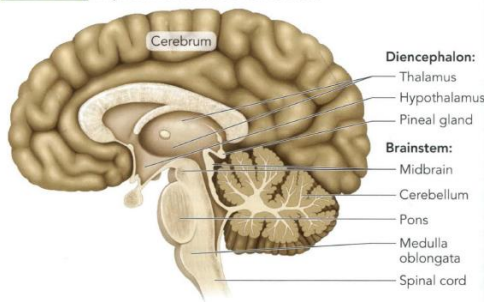
Biological Bases of Behavior (PSY, BIO)

The nervous system

- Neurons (e.g., the reflex arc)
 - Sensory neurons are afferent neurons, and they travel up dorsally in the spine to higher cortical regions. All somatic sensory neurons have a long dendrite extending from a sensory receptor toward the soma, **which is located just outside the CNS in a dorsal root ganglion**. There is a pair of dorsal root ganglia for every segment of the spinal cord. These dorsal root ganglia are protected within the vertebral column but are outside the meninges (protective sheath of the brain and cord). Motor neurons are efferent, and they travel down from higher cortical regions ventrally in the spine. Thus, the central nervous system almost acts as an intermediary between the afferent and efferent neurons.
 - Crossing over
- For starters, all preganglionic neurons have cell bodies in the spine.
- For somatic neurons, which innervate skeletal muscle, there is no pre/post nonsense. This one neuron projects directly onto the neuromuscular junction and releases acetylcholine.
- For autonomic, it's a little more complicated. For the sympathetic nervous system, the preganglionic neuron is short, and projects onto a postganglionic neuron that is close to the spine. The postganglionic neuron is long, and projects onto whatever gland. For the parasympathetic nervous system, the preganglionic neuron is long, and projects onto a postganglionic neuron that is short. This allows for sympathetic nervous system to have more general effects, while the parasympathetic nervous system has more specific effects. This makes sense, because the sympathetic nervous system acts in times of stress, and the body doesn't have time to be too specific; just a general effect would be more effective. In regularly maintaining homeostasis, however, we can afford to be more specific in our innervation. Think in terms of the location of the ganglia, in between the preganglionic and postganglionic neurons. The fact that the ganglion is closer to the effector organs for the parasympathetic system reflects its closer degree of control.
- Every synapse releases ACh except for the synapse between the postganglionic receptor and the effector, which releases epinephrine. I'm also pretty sure that the receptor on the postganglionic receptor is nicotinic and the receptor on the effectors are muscarinic.
- Neurotransmitters
- Structure and function of the peripheral nervous system
 - Parasympathetic is rest and digest. It stimulates glands in the digestive and urinary system, constricts airways in the bronchial smooth muscle, decreases cardiovascular activity, constricts the eyes and accommodates "near" vision, and stimulates erection/lubrication. Sympathetic is fight of flight. It inhibits the digestive system and the urinary system, opens airways, increases cardiovascular activity and blood flow to skeletal muscle, **induces sweating**, dilates the eyes and accommodates for far vision, stimulates the adrenal medulla to release epinephrine, and causes ejaculation/orgasm.
 - It is also worth noting that all sympathetic preganglionic efferent neurons have their cell bodies in the thoracic or lumbar regions of the spinal cord. This is in between the regions that the parasympathetic preganglionic efferent neurons have their cell bodies in: the brainstem or the sacral portion. To remember this, think of the parasympathetic system acting as a "parenthesis", enclosing the region that the sympathetic efferent neurons emanate from. The **sympathetic system** is known as the **thoracolumbar system**, and the **parasympathetic system** is known as the **craniosacral system**
- Structure and function of the central nervous system
 - The brain
 - Forebrain
 - Higher brain – contains cerebrum, or cerebral cortex
 - location of many higher level functions—consciousness, memory, cognition, planning, and emotion
 - Frontal lobe – location of higher-level executive functions such as planning and impulse inhibition
 - includes motor cortex – creates map of parts of body, such that specific sets of neurons control certain body parts
 - the amount of the motor cortex that is devoted to each part of the body depends on the complexity of movement required
 - parietal lobe – contains the somatosensory cortex, which maps the body's sensation of touch
 - also creates a map of the body—large portions of somatosensory cortex make their corresponding regions particularly sensitive

- Occipital lobe – site where visual information is processed
- Temporal lobe – concerned with auditory and olfactory information
- **Cortical brain also contains the hippocampus and amygdala**—structures central to the function of the limbic system, which is primarily concerned with memory and emotion
- Cerebrum is physically divided into two halves (cerebral hemispheres, connected by the corpus callosum)
 - for the most part, the two hemispheres carry out the same functions
 - however, brain does exhibit some lateralization of cortical functions
 - lateralized functions take place primarily in one hemisphere of the other
 - Ex: the production and comprehension of language are localized to two areas in left hemisphere
- **Midbrain**
- **Hindbrain**
- lower brain – earlier stage of evolutionary development
 - consist of brainstem, cerebellum, and diencephalon
 - integrates unconscious activities such as the respiratory system, arterial pressure, salivation, emotions, and reaction to pain and pleasure
 - **Brainstem** – basic involuntary functions necessary for survival
 - medulla, pons, and midbrain

FIGURE 2.13 Major structures of the Lower Brain



- medulla – important role in regulation of cardiovascular and respiratory systems
 - Chemoreceptors in medulla monitor lvls of CO₂ in the bloodstream and trigger changes in respiration rate accordingly
 - receives information about blood pressure and can respond by altering levels of sympathetic and parasympathetic innervation of the heart
- **pons** – coordinates communication between motor cortex and cerebellum
- **midbrain** – relay station for auditory and visual signals
- Cerebellum – heavily involved in coordination and planning of movement
- **Diencephalon** – consists of thalamus and hypothalamus
 - thalamus – control center / waystation because it processes almost all sensory information (except olfactory) before it reaches higher cortical centers, as well as receiving motor commands from these cortical areas on their way to the spinal cord
 - hypothalamus – regulates many of the body’s basic physiological needs by maintaining homeostasis in multiple systems such as temperature and water balance
 - hypothalamus and pituitary gland form a major site of interaction between the nervous and endocrine systems
- **Lateralization of cortical functions**
- Vocabulary skills tend to be lateralized to the left hemisphere
- Visuospatial skills, music perception, and emotion processing tend to be lateralized to the right hemisphere
- **Methods used in studying the brain**

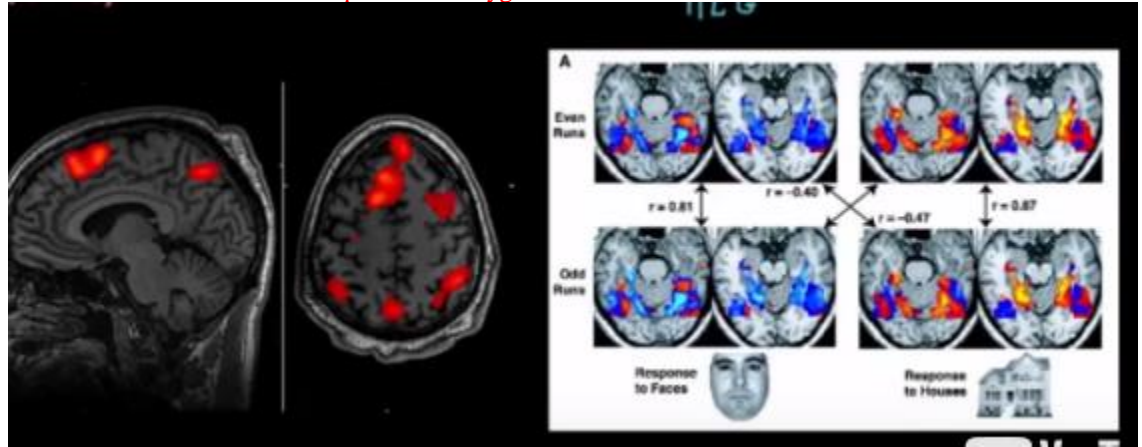
Lesion Studies and Experimental Ablation

- Purposely destroying parts of the brain in lab animals
- Tissue removal, radiofrequency lesions, neurochemical
 - Neurochemical – acid, hydroxydopamine
 - Neurochemical can be temporary
- Cortical cooling – use of a cryoloop
 - Temporary

Modern Ways of Studying the Brain

- Brain Structure
 - CAT Scans (CT scans)
 - X rays – tumor, abnormal bleeding
 - Can’t tell us which areas are active
 - MRI
 - Radiowaves – much more detailed than CAT scans
 - Also doesn’t tell us which areas are active
- Brain function
 - EEG – electrodes placed on scalp
 - Can’t tell us activity of individual neurons
 - Only sum totals of electrical activity in brain
 - Generate wavy lines – can tell if person is having a seizure, is asleep, etc
 - MEG – magnetic fields
 - Higher resolution, special shielding, large room, etc

- Combined methods – both function and structure
 - fMRI
 - neurons that are more active require more oxygen



- Positron emission tomography (PET Scans) (Radioactive glucose releases positrons)
 - Radioactive glucose
 - More glucose = more active
 - More invasive than fMRI (you need to inject someone with glucose)

- The spinal cord

Neuronal communication and its influence on behavior (PSY)

- Dopaminergic neurons are stimulated by dopamine (a neurotransmitter that affects mood -> affects behavior)
- Defective neurons can cause Parkinson's disease (impaired motor movements, loss of feeling) and Alzheimer's disease (changes in mood, impaired movement and memory)

Influence of neurotransmitters on behavior (PSY)

The endocrine system

- Components of the endocrine system
 - Hypothalamus- controls the actions of the endocrine system.
 - Adrenal gland- release adrenaline during "fight or flight" situation.
 - Hypophysis (Pituitary gland)- secretes growth and reproduction hormones. Also secretes neurotransmitters.
 - Reproductive organs- Ovaries produce estrogen and progesterone, testes produce testosterone.
 - Thyroid gland- regulates consumption of energy/ metabolism.
 - Parathyroid gland- controls release of parathyroid hormone (PTH) and levels of calcium within the body (high levels of PTH cause the body to increase levels of calcium in the blood, where it becomes available to the bones).
 - Pineal body (gland)- regulates levels of melatonin (hormone that plays a role in sleep cycles). Allows the nervous system to send signals to the endocrine system.
 - Pancreas- secretes digestive enzymes (exocrine pancreas) and insulin (endocrine pancreas).
- Effects of the endocrine system on behavior
 - Hormones and neurotransmitters affect mood, sexual arousal, and circadian rhythm (wake-sleep cycles).

Behavioral genetics

Behavioral Genetics – attempts to determine the role of inheritance in behavioral traits

- Twin studies – compare traits in monozygotic (identical) and dizygotic (fraternal) twins
- Adoption studies – creates two groups: genetic relatives and environmental relatives
 - adopted individuals compared with both groups to determine if they are more similar to their genetic relatives or their environmental relatives
- Adoption studies can help elucidate the impact of both heredity and environment on phenotype. Twin studies can only examine the impact of genetics because the environment is so similar for each twin
- Adopted children have personalities more similar to their biological parents than their adopted parents; traits such as agreeableness, extraversion, introversion, etc
- Adopted children are more similar to their adoptive families in terms of attitudes, values, manners, faith, politics
- Also instances of identical twins separated at birth and raised independently by different adopted families

Heritability does not pertain to an individual, but rather to how two individuals differ. For example, the heritability of intelligence is roughly 50%. This does not mean that your genes are responsible for 50% of your intelligence, rather, it means that heredity is responsible for 50% of the variation in intelligence between you and someone else.

- Genes, temperament, and heredity

- Temperament is “emotional excitability”. Infants who are considered “difficult” have a temperament that is more irritable and unpredictable, while infants who are considered “easy” have a more placid, quiet, and easygoing temperament. While heredity might predispose infants towards these temperament differences, an easy baby will be treated differently than a difficult baby, and studies have shown that temperament persists through childhood and beyond.
- **Adaptive value of traits and behaviors**
 - Your traits and behaviors are capable of changing and adapting in response to different experiences and environments.
- **Interaction between heredity and environmental influences**
 - The characteristics of someone's personality that are encoded by genetics collaborate with the person's environment to create their behavior (and more long-term, personality).
 - Studies have shown that when twins were raised separately (in different environments), they behaved more similarly than a pair of randomly chosen people, but still exhibited different personalities.
 - Phenylketonuria (PKU) is a genetic disease in which the afflicted individual is unable to break down the amino acid phenylalanine, leading to extreme mental retardation. The treatment: create an environment that completely avoid all foods containing phenylalanine.

Influence of genetic and environmental factors on the development of behaviors

- **Experience and behavior (PSY)**
 - While it is true that our genes play an important role in our behavior, our individual experiences and our social experiences also shape our behavior in important ways. As social animals, we learn ways of thinking and behavior from our families and peer groups. An individual's development, then, is determined by a complex interplay of biology, psychology, society, and culture.
- **Regulatory genes and behavior (BIO)**
 - Regulatory genes- control the expression of other genes (e.g. encoding for various proteins and microRNAs).
 - Epigenetics- Genes that modify their expression without changing the overall genetic code. This changes the phenotype without changing the genotype. Epigenetics are largely influenced by the environment, but can also be inherited.
 - Example: DNA methylation, the process by which a methyl group is added to a strand of DNA, preventing the expression of some genes.
- **Genetically based behavioral variation in natural populations**
 - Within animal and human populations there are different genes that encode for various behaviors.
 - e.g., Within a population of wolves, some are genetically programmed to behave more aggressively. These wolves will likely kill more prey.

Human physiological development (PSY)

- **Prenatal development**
 - Prenatal Development
 - **Placenta** transfers nutrients and oxygen to the developing fetus, and transports waste and carbon dioxide away from fetus
 - acts as a barrier, protecting the fetus from harmful substances, but some substances like alcohol can still cross this barrier and have a negative impact on neurological development
- **Motor development**

Infancy

Newborns have some automatic behaviors, **reflexes**, which are useful for survival

- **Moro (startle) reflex** – startle in response to loud sound or sudden movement
- **Rooting reflex** – in response to touching or stroking cheeks, the baby will turn its head in the direction of the stroke
- **Sucking Reflex** – in response to anything that touches the roof of the baby's mouth, it will begin to suck
- **Babinski reflex** – in response to the sole of the foot being stroked, baby's big toe moves upward, and other toes fan out
- **Tonic neck reflex** – in response to its head being turned to one side, the baby will stretch out its arm on the same side and the opposite arm bends up at the elbow
- **Palmar grasp reflex** – in response to stroking the baby's palm, the baby's hand will grasp
- **Walking/stepping reflex** – in response to the soles of the baby's feet touching a flat surface, they will attempt to walk
- **swimming reflex**

Motor Development

Reflexive movements – 0-1 years. Primitive, involuntary movements that serve to “prime” the neuromuscular system and forms the basis for the more sophisticated movement to come. For example, the palmar grasp reflex primes the nervous system for the more controlled grasping learned at later stages. Overlaps with the stage in which rudimentary movements are learned.

Rudimentary movements – 0-2 years. The first voluntary movement performed by a child. Include rolling, sitting crawling, standing, walking

Fundamental Movement – 2-7 years. Involves running, jumping, throwing, catching. Highly influenced by the environment

Specialized Movement – 7-14 years. Involves combining fundamental movements to apply them in specific tasks. For example, grasping, throwing, and jumping are combined to shoot a basketball.

Lifelong Application Stage – from 14+. Movements are continually refined and applied

- **Developmental changes in adolescence**

Parenting Styles

Authoritarian – involves attempting to control children with strict rules, expected to be followed unconditionally. Will utilize punishment or discipline. Children grow up to display more aggressive behavior, or may act shy and fearful. Lower self esteem.

Permissive – allow their children to lead the show, few rules and demands. Responsive and loving, but rather lenient. Children lack self-discipline and may be self-involved and demanding.

Authoritative – listen to their children, encourage independence, place limits on behavior, consistently follow through with consequences, express warmth and nurturing, allow children to discuss their opinions. Is the best parenting.

Adolescence – transitional stage between childhood and adulthood. Involves important physical, psychological, and social changes. Puberty occurs. The brain undergoes three major changes: cell proliferation in certain areas, synaptic pruning of unnecessary connections, and myelination (strengthens connections). Prefrontal cortex develops, and the limbic system develops even more rapidly, explaining behavior that appears to be emotionally rather than rationally driven.

Adulthood and Later life – marked by a feeling of comfortable independence. Less clearly defined.

Personality (PSY)

Theories of personality

Personality, while very hard to precisely define, is essentially the individual pattern of thinking, feeling, and behavior associated with each person.

- **Psychoanalytic (Unconscious)**

Psychoanalytic Perspective

- **Psychoanalytic theory** – personality is shaped by a person's **unconscious thoughts**, feelings, and memories. These unconscious elements are derived from past experiences, primarily by early caregivers. The existence of this unconscious is inferred from behaviors such as dreams, slips of the tongue, posthypnotic suggestions, and free associations
- **Sigmund Freud** – two instinctual drives motivate human behavior
 - **libido** – **life instinct**, drives behaviors focused on survival, growth, creativity, pain avoidance, and pleasure. **Includes more than just sexual energy**
 - **Death instinct** – drives aggressive behaviors fueled by an unconscious wish to die or to hurt oneself or others
- **Psychic energy** is distributed among three personality components:
 - **id** – largely unconscious, source of energy and instincts. Ruled by the pleasure principle—seeks to reduce tension, avoid pain, and gain pleasure. Does not use logical or moral reasoning. Young children function almost entirely from the id. Only one that's entirely unconscious.
 - **Ego** – ruled by the reality principle—uses logical thinking and planning to control consciousness and the id. Tries to find realistic ways to satisfy the id's desire for pleasure.
 - **Superego** – inhibits the id and influences the ego to follow moralistic and idealistic goals rather than just realistic goals; the superego strives for a higher purpose. Strives for perfection, seeks to gain psychological rewards such as feelings of pride and self-love and avoidance of guilt
- In the **Iceberg model**, there are three levels of consciousness: the conscious level, the preconscious level, and the unconscious level. The Ego and Superego operates on all three levels, while the Id mainly resides in the unconscious level.
- **Ego Defense mechanisms** – unconsciously deny or distort reality. Are normal, and are only unhealthy when taken to extremes
 - **Repression** – lack of recall of an emotionally painful memory
 - **Denial** – Forceful refusal to acknowledge an emotionally painful memory
 - **Reaction Formation** – Expressing the opposite of what one really feels, when it would feel too dangerous to express the real feeling (such as acting hateful toward someone you love)
 - **Projection** – Attributing one's own unacceptable thoughts or feelings to another person
 - **Displacement** – redirecting aggressive or sexual impulses from a forbidden action or object onto a less dangerous one (going home and kicking the dog instead of your boss)
 - **Rationalization** – explaining and intellectually justifying one's impulsive behavior
 - **Regression** – reverting to an earlier, less sophisticated behavior (child reverts to bedwetting after trauma)
 - **Sublimation** – Channeling aggressive or sexual energy into positive, constructive activities, such as producing art
- At each developmental stage, certain need and tasks must be satisfied.
 - Freud's 5 psychosexual stages – mainly based on sensual urges
 - **Oral stage** (birth to 1 year)– child seeks sensual pleasure through sucking and chewing
 - **Anal stage** (1-3 yrs) – child seeks sensual pleasure through control of elimination

- **Phallic stage** (3-6 yrs)– child seeks sensual pleasure through genitals. He/she is sexually attracted to the opposite-sex parent and hostile toward the same-sex parent (Oedipus and Electra Complex). Girls experience **penis envy**.
 - **Latency Stage (6-puberty)**– Sexual interests subside and are replaced by interests in other areas—school, friends, sports
 - **Genital Stage** – begins in adolescence, when sexual themes resurface
 - Freud claims that adult personality is largely determined during first three psychosexual stages. If a stage’s requirements are not met, the child becomes psychologically fixated at that stage and will continue to seek sensual pleasure through behaviors related to that stage
 - Erik Erikson – extended Freud’s theories. 8 stages:
 - 1st Stage (0-1): **Trust vs Mistrust**. Infant’s physical and emotional needs must be met, otherwise will later mistrust the world and relationships
 - 2nd Stage (1-3): Toddler must resolve crisis of **autonomy vs shame and doubt**. Needs to explore and make mistakes, otherwise will be dependent as an adult.
 - 3rd Stage (3-6): Preschool-age must resolve the crisis of **initiative vs guilt**. Needs to be let to make decisions, or may be guilty taking initiative and will allow others to choose, as an adult.
 - 4th Stage (6-12): School-age child must resolve crisis of **industry vs inferiority**. Needs to succeed in school and attain personal goals, or may feel inadequate as an adult
 - 5th Stage (12-18): adolescent child must resolve crisis of **identity vs role confusion**. If he does not test limits and clarify his identity, goals, and life meaning, he will develop role confusion.
 - 6th Stage (18-35): Young adult faces the crisis of **intimacy vs isolation**. If a person does not form intimate relationships at this stage, he may become alienated and isolated
 - 7th Stage (35-60): middle age person must resolve crisis of **generativity vs stagnation**. If he does not feel productive by helping the next generation and resolving differences between actual accomplishments and earlier dreams, he may become stuck in psychological stagnation.
 - 8th Stage: later life, person must resolve crisis of **integrity vs despair**. If person looks back with regrets and a lack of personal worth, he may feel hopeless, guilty, and self-loathing
- **Psychoanalytic therapy** – uses various methods to help a patient become aware of his unconscious motives and to gain insight into the emotional issues and conflicts that are presenting difficulties. Another goal is to strengthen the ego, so that choices can be based on reality rather than on instincts (id) or guilt (superego). Sometimes is referred to as talk therapy because sessions usually focus on patients talking about their lives. The therapist will look for patterns or significant events that may play a role in the client’s current difficulties. **The type of therapy Melfi used on Tony Soprano was psychoanalytic.**
 - **Problem** – unconscious forces, childhood experiences
 - **Therapy Goals** – reduce anxiety through self – insight
 - **General Method** – Analysis and interpretation
- **Humanistic perspective (Free Will)**

Humanistic Perspective

- **Humanistic theory** – focuses on healthy personal development. Humans are seen as inherently good and as having free will.
- **Actualizing tendency** – innate drive to maintain and enhance the organism, most basic motive of all people
- A person will grow toward **self-actualization**—realizing his or her human potential, as long as no obstacle intervenes.
- **Carl Rogers (Mr. Rogers)**
 - When a child receives disapproval from a caregiver, he senses that the caregiver’s positive regard is conditional. In order to win his approval while still seeing both himself and the caregiver as good, the child introjects the caregiver’s values, taking them on as part of his own self-concept
 - **Self-concept** – made up of all the child’s conscious, subjective perceptions and beliefs about himself.
 - The discrepancy between conscious introjected values and unconscious true values is the root of psychopathology. This discrepancy leads to tension, not knowing oneself, and the feeling that something is wrong.
- **Attachment Theory** – parent-child relationships strongly influence the child’s attitudes about the self and the world
- **Incongruence** – felt when you encounter experiences that contradict your self-concept
- **Humanistic therapy** – provide an environment where **clients** trust and accept themselves and their emotional reactions, so they can learn and grow from their experiences. Therapist is on an equal level with the client. Active listening and unconditional positive regard.
 - **Problem** – barriers to self-understanding and self-acceptance
 - **Therapy Goals** – Personal growth through self-insight
 - **General Method** – active listening, unconditional positive regard
- **Trait perspective**
- **Trait Perspective**
- **Personality trait** – generally stable **predisposition** toward a certain behavior
- **Surface traits** – evident from a person’s behavior (talkative, exuberant, other adjectives for describing human behavior)
- **Source traits** – factors underlying personality and behavior; fewer and more abstract.

- **Raymond Cattell** – used factor analysis to identify 16 surface traits, reducing 15 of them to five **global factors** (source traits): **extroversion, anxiety, receptivity, accommodation, and self control**. Some surface traits are associated with more than one global factor. Problem solving, one of the 16 primary factors (surface traits), is not part of any global factors.
- **McCrae and Costa** – described **Five-Factor Model**, similar to Cattell's
 - **Openness, conscientiousness, neuroticism, agreeableness, extraversion**
- Social cognitive perspective **Environment – genetic interbalance, probably most reasonable: Reciprocal interaction**
- **Social Cognitive Perspective** – personality is formed by a reciprocal interaction among behavioral, cognitive, and environmental factors
 - **behavioral component** – patterns of behavior learned through classical and operant conditioning
 - **Social component** – observational, or vicarious, learning
- **Cognitive behavioral therapy (CBT)** – person's feelings and behaviors are seen as reactions **not to actual events, but to the person's thoughts about those events**. Each person lives by self-created subjective beliefs about himself, other people, and the world, and these beliefs color the person's interpretations of events. These beliefs are often unconscious. The goal of cognitive psychotherapy is to help client become aware of irrational beliefs and substitute rational beliefs and thoughts.
 - **Problem** – Maladaptive behavior, self defeating thoughts
 - **Therapy Goals** – Extinction and relearning of undesired thoughts/behaviors and healthier thinking and self-talk
 - **General Method** – reconditioning, desensitization, reversal of self-blame
- **Biological perspective** **Clear, visible abnormalities in brain**

Biological Perspective – heritability of basic personality traits

Hans Eysenck – proposed that a person's level of **extroversion** is based on individual differences in the **reticular formation** (which mediates arousal and consciousness). Introverts are more easily aroused and therefore require and tolerate less external stimulation, whereas extroverts are less easily aroused and are therefore comfortable in more stimulating environments. **Neuroticism** is based on individual differences in the **limbic system**. Correlation has been found between **extroversion** and the volume of brain structures involved with processing rewards, and between neuroticism and volume of brain regions involved with processing negative emotions and punishments

Jeffrey Alan Gray – proposed that personality is governed by interactions among three brain systems that respond to rewarding and punishing stimuli

- fearfulness and avoidance are linked to **sympathetic nervous system**, worry and anxiety are linked to the **behavioral inhibition system**, and optimism and impulsivity are linked to the **behavioral approach system**

C. Robert Cloninger also linked personality to brain systems involved in learning reward, motivation, and punishment. Proposed that personality is linked to the level of activity of certain neurotransmitters in three interacting systems.

- Low dopamine – higher impulsivity and novelty seeking
- low norepinephrine – higher approval seeking and reward dependence
- Low serotonin – risk avoidance
- Behaviorist perspective **Reinforcement-punishment, deterministic**

Behaviorist Perspective – personality is a result of learned behavior patterns based on a person's environment.

- **Deterministic** – proposing people begin as blank slates, and that environmental reinforcement and punishment completely determine an individual's behavior and personalities.
- Development of personality occurs through classical or operant conditioning.
- **Behavioral therapy** – uses *conditioning* to shape a client's behaviors in the right direction.
 - **ABC model**: determine Antecedents and Consequences of the Behavior. Proceeds by changing antecedents and consequences. Example: client is helped to relax while repeatedly being exposed to something that provokes anxiety

Situational approach to explaining behavior **It all depends**

Situational Approach to Explaining Behavior

Person-situation controversy (trait vs state) – considers the degree to which a person's reaction in a given situation is due to their personality or due to the situation itself

Traits – internal, stable, and enduring aspects of personality, should be consistent

States – situation; unstable, temporary, and variable aspects of personality that are influenced by external environment

People tend to modify their behavior based on **social cues**—verbal or nonverbal hints that guide social interactions

people do not act with predictable consistency – in unfamiliar situations, people tend to modify their behavior based on social cues. specific traits may remain hidden.

Psychological Disorders (PSY)

Understanding psychological disorders

A set of behavioral and/or psychological symptoms that are not in keeping with cultural norms, and are severe enough to cause significant personal distress and impairment to social, occupational, or personal functioning

Sometime cultural norms can be rules out as a source of behavior; for example, when what appears to be a delusion or even a hallucination can be better understood in terms of religious or spiritual practice, that belief or experience would not count as a symptom of a psychological disorder.

A psychological disorder is diagnosable based on specific symptoms and symptom threshold, and treatable (at least manageable) with various types of medication and or therapy

Classifying Psychological Disorders

Diagnosical and Statistical manual of Mental Disorders, fifth edition: DSM-5

Etiology – cause or set of causes or causal conditions for a particular disease

- Biomedical vs. biopsychosocial approaches
- **Biopsychosocial approach** to health and illness claims that illness cannot be understood by only examining biological factors; considers social factors to be integral to functioning at the level of individual biology
- **Biomedical approach** – focuses narrowly on the physical aspects of illness
- Classifying psychological disorders
- DSM 5
- Rates of psychological disorders
- In America, roughly **1 in every 4 adults** meets the diagnostic criteria for a psychological disorder.
- Serious psychological disorders are less common, affecting 1 in 17 people in the US

Types of psychological disorders

- Anxiety disorders **Phobias, Panic, Social Anxiety**

Anxiety Disorders—anxiety is intense, frequent, irrational, and uncontrollable

- **Panic disorder** – have suffered from at least one panic attack and is worried about having more of them
 - panic attack – person experiences intense dread, along with shortness of breath, chest pain, choking sensation, and rapid heartbeat/palpitations
- **Generalized anxiety disorder (GAD)** –feeling tense or anxious much of the time, but does not experience panic attacks. May be no identifiable source
- **Phobias** – can be specific and social
 - Specific – persistent, strong, unreasonable fear of a certain object or situation
 - situational (flying), Natural environment (thunderstorms), Blood-Injection-Injury (surgical procedures), Animal (spiders)
 - Social Anxiety Disorder – unreasonable, paralyzing fear of feeling embarrassed or humiliated while one is seen or watched by others
- Obsessive–compulsive disorder **Obsession → Compulsion**

Obsessive-Compulsive and Related Disorders

- **OCD** – person has obsessions, compulsions, or both
 - **obsessions** – repeated, intrusive, uncontrollable thoughts or impulses that cause distress or anxiety
 - **Compulsions** – repeated physical or mental behaviors that are performed in response to an obsession or in accordance with a strict set of rules, in order to reduce distress or prevent something dreaded from occurring.
 - An obsession may be an irrational fear of contamination by dirt, and a compulsion may be washing yourself repeatedly, perhaps with a lengthy ritual
- Trauma- and stressor-related disorders **PTSD**

Trauma- and Stressor-Related Disorders

- **Posttraumatic Stress Disorder (PTSD)** – can arise when a person feels intense fear/horror while experiencing/witnessing an extremely traumatic event. Most people will experience at least one traumatic event in their life, but only few will develop PTSD. The traumatic event is often relived through dreams and flashback in which the person feels as though the event is currently happening. Person is also chronically physiologically hyperaroused, and hypervigilant. The symptoms must be present for at least a month.
- **Acute Stress Disorder** – similar to PTSD, but its symptoms are present for less than a month
- **Adjustment Disorder** – less severe and shorter-term version of the condition, in which the causes include a **stressor as opposed to a trauma** and the symptoms last less than six months once the stressor is gone
- Somatic symptom and related disorders **Hypochondriasis, imagined pain**

Somatic Symptom and Related Disorders

Psychological disorders characterized by distress and decreased functioning due to persistent physical symptoms and concerns, which may mimic physical disease but are not rooted in any detectable pathophysiology

- **Somatic Symptom Disorder** – central complaint is one or more somatic symptoms and diagnosis also requires evidence of diminished functioning stemming from excessive preoccupation and anxiety about the symptoms
- **Illness Anxiety Disorder** – distress is predominantly psychological, with people experiencing persistent preoccupation with their health (hypochondriasis). Somatic aspect of illness is not as central, or can be nonexistent

- **Conversion Disorder** – experience of a change of sensory or motor function (weakness, tremors) that has no discernible physical or physiological cause and that seems to be significantly affected by psychological factors. The emotion or anxiety is “converted” into a physical symptom
- **Factitious Disorder** – “Munchausen Syndrome” when imposed on yourself or “Munchausen by Proxy” when imposed on someone else. When imposed on oneself, a person has not just fabricated an illness, but also falsified evidence or symptoms of illness, or inflicts harm to himself to induce injury or illness
- **Bipolar and related disorders** **Poles: Depression and Mania**

Bipolar and Related Disorders

Bipolar disorder (formerly called manic depression) – people experience cyclic mood episodes at one or both extremes or “poles”: depression and mania

Manic episode – for at least one week, person experiences an abnormal euphoric, unrestrained, or irritable mood, and marked increase in goal-directed activity or in psychomotor agitation (when there is no opportunity to pursue goal-directed activity)

Bipolar I disorder – diagnosed only if there has been a spontaneous manic episode not triggered by treatment for depression or caused by another medical condition/medication. **Person has experienced at least one manic or mixed episode**

- **Mixed episode** – person has met the symptoms for both major depressive and manic episodes nearly every day for at least a week, and the symptoms are severe

Bipolar II Disorder – **manic phases are less extreme**. Cyclic moods—include at least one major depressive episode and one hypomanic episode, but has not met criteria for a manic or mixed episode

- **Hypomanic episode** – for at least four days, person has abnormally euphoric or irritable mood, but at a less severe level. Impairment or distress is less serious, and there is no psychosis or hospitalization
- **Major depressive episode** – person has felt worse than usual for most of the day for at least two weeks straight
 - **Has at least five of following symptoms:** depressed mood, decreased interest, significant increase/decrease in weight, excessive/insufficient sleep, fatigue, impaired decision making, thoughts of death

Cyclothymic disorder – **moods are less extreme** than bipolar disorder, with symptoms not meeting criteria for either a manic or major depressive episode

Dysthymic syndrome – at least two years, similar symptoms to **depression, more of a chronic mood** state or syndrome, not as discrete

- **Depressive disorders**
- **Depressive Disorders**
- Persistent pattern of abnormal and often painful mood symptoms severe enough to cause significant personal distress and/or impairment to social, occupational, or personal functioning
- **Affect** – person’s observable emotion in the moment
- **Mood** – person’s sustained internal emotion that colors his view of life
- **Major Depressive Disorder (MDD)** – has suffered one or more major depressive episodes. 10% attempt suicide and many more contemplate it or devise a suicide plan. These symptoms do not indicate major depression if they occur within two months of bereavement
- **Persistent Depressive Disorder (Dysthymia, PDD)** – less intense, more chronic form of depression, no major depressive episode. Most often starts during adolescence or early adulthood
- **Premenstrual Dysphoric Disorder** – only diagnosed in women, many symptoms of a major depressive episode are present, with the caveat that they intensify in the final week before the onset of menses and then improve and in many cases disappear in the week after menstruation has ended
- **Schizophrenia** **Delusions / hallucinations**

Schizophrenia Spectrum and other Psychotic Disorders

Diagnosed when someone has been experiencing one or more of the following symptoms: delusions, hallucinations, disorganized thinking, disorganized or abnormal motor behavior, and one or more negative symptoms: **decreased emotional expression**, avolition (lack of motivation), alogia (decreased or absent speech)

Note also that while schizophrenia literally means “split mind,” it refers to a **split in mental functions, or a split from reality; it does not indicate a split in identity**

- **Delusional Disorder**
 - **Delusion** – false belief that is not due to culture, and is not relinquished despite evidence on the contrary
 - One or more delusions have been present for at least a month, and counterevidence is generally denied or distorted to keep the delusion intact
 - Common: Erotomania (believing that someone is in love with you), grandiosity, and persecution (being persecuted)
- **Brief Psychotic Disorder**
 - Positive symptoms (delusions, hallucinations, disorganized speech, disorganized behavior) are present for at least one day, but less than a month

Hallucination – false sensory perception that occurs while person is conscious. Can be auditory or visual

- **Schizophreniform Disorder** – occupies a middle position on the schizophrenia spectrum: person experiences at least one positive symptom, but can also experience one or more negative symptoms, for at least a month but not longer than six months

- **Schizophrenia** – at the end of the spectrum – diagnosed when someone has been experiencing positive and negative symptoms for longer than six months. NO complete remission without medication
- **Schizoaffective Disorder** – combines mood and psychotic symptoms of schizophrenia and a major depressive, manic, or mixed episode, for at least a month. Person experiences delusions/hallucinations at times in the absence of mood symptoms and in their presence. Resembles a chronic psychotic disorder with an overlapping bipolar or depressive disorder
- **Catatonic Schizophrenia** - negative symptoms, such as flat affect and rigidity, are the dominant type.
- Dissociative disorders **Split Identity, forgetting**

Dissociative Disorders

Some of a person's thoughts, feelings, and memories are separated from conscious awareness and control, occurring sometimes as a defense against a traumatic situation. These disruptions in awareness are extreme and cause distress

Dissociative Identity Disorder – person alternates among two or more distinct personality states, only one of which interacts with other people at a given time. Involves amnesia for one or more of the personality states. Many people incorrectly label this as schizophrenia

Dissociative Amnesia – person has had at least one episode of forgetting some important personal information, creating gaps in memory that are usually related to severe stress or trauma. Person wanders aimlessly during the episode—**dissociative fugue**. Begins and ends suddenly, with full recovery of memory, though it may also linger with some information only gradually coming back to consciousness. “Selective Forgetting”

Depersonalization/Derealization Disorder

- **Depersonalization** – has a recurring or persistent feeling of being cut off or detached from his body or mental processes—an “out of body experience”
- **Derealization** disorder – person experiences a feeling that people or objects in the external world are unreal, even though person knows this feeling to be inaccurate
- Personality disorders

Personality Disorders

Enduring, rigid set of personality traits that deviates from culture norms, impairs functioning, and causes distress either to the person with the disorder or to those in his or her life. Many personality disorders are **egosyntonic**—generally in harmony with a person's ego or self-image. It is usually the consequences of the personality disorder, not its symptom structure that causes a person to seek treatment. A difficult or rigid personality becomes a disorder when the pattern causes significant distress or impairment, has been present since adolescence, affects nearly all personal and social situations, and creates dysfunction

Cluster A – paranoid, schizoid, and schizotypal personality disorders associated with irrational, withdrawn, cold, or suspicious behaviors

Cluster B – antisocial, borderline, histrionic, and narcissistic personality disorders associated with emotional, dramatic, and attention-seeking behaviors

Cluster C – avoidant, dependent, and obsessive-compulsive personality disorders, associated with tense, anxious, over-controlled behaviors

Personality Disorders

- **Paranoid** – mistrusts and misinterprets others' motives and actions without sufficient cause
- **Schizoid** – a loner with little interest or involvement in close relationships
- **Schizotypal Personality Disorder** – has several traits that cause problems interpersonally, including limited or inappropriate affect; magical/paranoid thinking, and odd beliefs, speech, and perceptions. Can develop schizophrenia **Schizoid not really by choice --schizotypal**
- **Antisocial** – history of serious behavior problems, including significant aggression against people or animals, property destruction, lying, or rule violation. Disregards rights of others
- **Borderline** – suffers from enduring or recurrent instability in his or her impulse control, mood, and image of self and others. Involves impulsive and reckless behavior, extreme mood swings, etc. Terrified of abandonment, tends to devalue or demonize
- **Histrionic** – strongly desires to be the center of attention. Expressions of emotion are dramatic, yet the emotions themselves are shallow and shifting
- **Narcissistic** – feels grandiosely self-important, with fantasies of beauty, brilliance, and power. Arrogant and haughty
- **Avoidant** – feels inadequate, inferior, and undesirable, preoccupied with fears of criticism and conflict
- **Dependent** – feels need to be taken care of by others and an unrealistic fear of being able to take care of himself
- **Obsessive-Compulsive** – may not have true obsessions or compulsions, but may instead accumulate money or worthless objects. Perfectionistic, rigid, and stubborn, with a need for control. Resists authority and will not cooperate. Often a workaholic

Biological bases of nervous system disorders (PSY, BIO)

- Schizophrenia

Schizophrenia – neurological disorder with a strong genetic basis. If an identical twin has schizophrenia, the other has a 50% chance of having it

- **Stress-Diathesis theory** – suggests that genetic inheritance provides biological predisposition, and stressors elicit the onset of disease

- **Dopamine hypothesis** – suggests that the pathway for the neurotransmitter dopamine is hyperactive in people with schizophrenia, due to both **overabundance of dopamine and hypersensitive dopamine receptors**
- Individuals with schizophrenia have also been found to have smaller brains due to atrophy. Brains have increased ventricles (cavities in brain) and enlarged sulci and fissures (less folding)
- Depression
- **Depression** – **strong genetic basis**—there is increased risk of developing depression when a first-degree family member has it. Linked to diminished functioning in pathways of brain that involve dopamine, serotonin, and norepinephrine.
- Alzheimer’s disease
- **Alzheimer’s disease** – most prevalent form of **dementia**—the loss of cognitive ability beyond what is expected due to aging. Alzheimer’s is characterized by **anterograde amnesia** (inability to form new memories) and **retrograde amnesia**, with more recent memories degrading first. It is a **cortical disease, affecting the cortex, the outermost tissue**. It is caused by formation of **neuritic plaques**—hard formations of beta-amyloid protein, and **neurofibril tangles**—clumps of tau protein. When these plaques build up, they reach a critical mass and begin to cause cell death by “gunking up” neuronal connections, preventing nutrients and waste from exchanging. Also, there is some evidence of abnormalities in activity of **acetylcholine in the hippocampus**
- Parkinson’s disease
- **Parkinson’s Disease** – movement disorder caused by **death of cells that generate dopamine in basal ganglia and substantia nigra, two subcortical structures in the brain**. Symptoms involve resting tremor, slowed movement, rigidity of movements and facial expressions. Most patients eventually experience dementia. Patients given **L-dopa treatments**, as it is a precursor to dopamine that is able to pass through the blood-brain barrier (dopamine is not able to do this)
- Stem cell-based therapy to regenerate neurons in the central nervous system (BIO)
- It has been theorized that neural stem cells, which have the capacity to differentiate into any of the cell types in the nervous system, hold the key to curing damage to the central nervous system

Motivation (PSY)

Factors that influence motivation

- Instinct
- **Instincts** – behaviors that are unlearned and present in fixed patterns throughout a species
- Arousal
- Arousal – some behaviors may be motivated by a desire to achieve an optimal level of arousal
- Drives (e.g., negative feedback systems) (PSY, BIO)

Drives/Negative Feedback Systems

- **Drive** – an urge originating from a physiological discomfort such as hunger, thirst, or sleepiness
 - often work through **negative feedback systems**—maintains stability or homeostasis
- Needs
- Needs – includes basic biological needs, also includes higher-level needs

Theories that explain how motivation affects human behavior

- Drive reduction theory
- **Drive Reduction theory** – suggests that a physiological need creates an aroused state that drives the organism to reduce that need by engaging in some behavior
- Incentive theory
- **Incentive Theory** – motivation through external stimuli, objects, and events in the environment that either help induce or discourage certain behaviors

Maslow’s Hierarchy of Needs

- Abraham Maslow created this pyramid
 - At the base are **physiological** needs, followed by **safety**, then **love/belongingness**, **Esteem needs**, and then **Self-actualization**
 - **First, you want food and water. Then you want to be safe. Then you want to have friends, belong somewhere (you need a family), Then you want esteem, and after you want all that, you want self actualization.**
- Other theories (e.g., cognitive, need-based)
- Cognitive theories of motivation
 - **Expectancy theory**- states that our behavior is a result of conscious choices that we make to minimize pain and maximize pleasure.
 - **Goal-Setting theory**- states that there is a link between goal setting and task performance, and that by setting and achieving small goals (and receiving positive feedback), we are more likely to accomplish more difficult goals later.
- Need-based theory of motivation- "Maslow's Hierarchy of Needs", developed by Abraham Maslow, states that there are five levels of human needs (from low-level to higher-level needs). Levels include:

1. Physiological needs- includes the need to maintain homeostasis (food, water, body temperature, oxygen, ability to reproduce).
2. Safety needs- includes the need to feel safe and protected in one's environment.
3. Social needs- includes the need to feel like you belong (feelings of love and appreciation, avoidance of loneliness).
4. Esteem needs- includes the need to achieve independence, self-esteem, and to receive respect from peers.
5. Self-actualization- when all these needs are met, one can realize one's full potential, and find external meaning.

Biological and sociocultural motivators that regulate behavior (e.g., hunger, sex drive, substance addiction)

Biological Factors that Regulate Motivation

Our bodies have a “sweet spot” at which things are in homeostasis

Hypothalamus is the primary control center for detecting changes in temperature and receives input from skin receptors. It causes **vasoconstriction** (conserving heat) and shivering when cold. Hypothalamus also regulates the intake of nutrients into the body. The **lateral hypothalamus** brings on hunger, while the **ventromedial hypothalamus** depresses hunger. **Ghrelin**, released by the stomach and pancreas, heightens the sensation of hunger, while **leptin**, a hormone released by white adipose tissue, reduces hunger

Sociocultural: body weight (thinner is better), experience

Attitudes (PSY)

Components of attitudes (i.e., cognitive, affective, and behavioral)

Attitude – person’s feelings and beliefs about other people or events around them, and their tendency to react behaviorally based on those underlying evaluations. Have three components: **Affect (emotion), behavior tendencies, and cognition** - doesn’t really make any fucking sense

- **Cognitive**- involves someone's beliefs and knowledge. What someone knows to be true can affect one's attitude towards certain issues. E.g., If you know that lions are dangerous, your attitude towards them may be negative and fearful.
- **Affective**- involves someone's feelings or emotions, which largely shape our attitude. E.g., If you love someone, you will most likely address them with a positive, loving attitude.
- **Behavioral**- involves someone's actions. Our behavior is greatly dependent on our attitude. E.g., If we have a positive attitude, we are more likely to behave productively.

The link between attitudes and behavior

- Processes by which behavior influences attitudes (e.g., foot-in-the door phenomenon, role-playing effects)

Processes by which Behavior Influences Attitudes

- **Role-playing**. Most famous example is Philip Zimbardo’s Stanford prison experiment
- **Public Declarations** – in order to please others, people may feel a pressure to adapt what they say. Saying something publically can become believing it—as we continue to express ourselves, we become more and more entrenched in believing what we say. Is the basis for political correctness—“saying can become believing
- **Justification of Effort** – For example, a student who works hard to study for the MCAT and earns a fantastic score, only to feel a calling towards becoming an actor. In order to justify the effort already put into the process, he will feel pressured to go to medical school. Sunk Cost Fallacy. Also the basis of the **Foot in the Door phenomenon**—while people may have agreed to the earlier steps because they required minimal commitment, they will find themselves feeling internal pressure to consent to larger requests to justify their acceptance of the smaller requests. Another example is finding that doing favors for someone increases feelings of liking for that person.
- **Processes by which attitudes influence behavior**

Behavior does not accurately reflect attitudes at times. The relationship between who we believe we are and what we do is complex. There are some situations in which attitudes to accurately predict behavior:

- When social influences are reduced (people being more honest in a secret ballot)
- When general patterns of behavior, rather than specific behavior, are observed. This reflects the **principle of aggregation** – an attitude affects a person’s aggregate or average behavior, but not necessarily each isolated act.
- When specific, rather than general, attitudes are considered. For example, belief in a healthy lifestyle is not as important as say, an attitude of eating properly, in predicting what a person will eat.
 - **Specific attitude, but general behavior—makes sense**
- When attitudes are made more powerful through self-reflection. People are more likely to behave in accordance with their attitudes if they are **given some time** to prepare themselves to do so, rather than acting automatically.

Icek Ajzen's theory of planned behavior states that one's behavioral beliefs influences one's attitude towards the behavior, which then affects how someone decides to behave.

- e.g., If someone believes that they should behave quietly while attending church, they would feel happy to comply with this behavior, and, when in church, behave quietly.
- Cognitive dissonance theory

- **Cognitive Dissonance Theory** – explains that we feel tension, or dissonance, when our attitudes and behaviors don't match. We may feel like hypocrites when this happens. An important application of this principle is in internal attitude changes. Consider a child receiving 100\$ for an A and another receiving 10\$. The one that receives 10\$ is more likely to feel that working hard is intrinsically valuable.
- Also, imagine a woman choosing between two suitors—one romantic but undependable, the other subdued but dependable. According to Cognitive Dissonance Theory, she will change her attitudes to accentuate the positive qualities of the man she chooses, along with the negative qualities of the other man.

Content Category 7B: Social processes that influence behavior

How the Presence of Others Affects Individual Behavior (PSY)

Social facilitation

Social Facilitation

Mere presence – most basic level of experience between members of society, means that people are simply in each other's presence, either completing similar activities or apparently minding their own business. The mere presence of others has a measurable effect on an individual's performance

- People tend to perform simple, well-learned tasks better when other people are present—**Social facilitation effect**
 - Explanation—arousal. Presence of others stimulates arousal, which serves to activate our dominant responses, and the practiced responses come most easily to us.

Deindividuation

Deindividuation

When situations provide a high degree of arousal and a very low sense of responsibility, people may act in startling ways. They lose their sense of restraint and their individual identity in exchange for identifying with a group or mob mentality. Disconnection of behavior from attitudes

- Results from a confluence of several factors:
 - Group size – larger groups create diminished sense of identity and responsibility
 - physical anonymity – using facepaint, masks, or costumes
 - arousing activities; rather than beginning with a frenzy, deindividuating circumstances usually start with arousing activities that escalate

Bystander effect

Bystander Effect

Kitty Genovese – involved stabbing of a woman in NYC late at night, with a lack of effect of neighbors to help her while she cried for help

Bystander effect – finding that a person is less likely to provide help when there are other bystanders—creates a diffusion of responsibility

Social loafing

Social Loafing

Applies to circumstances when people are working together toward common goals—there is a tendency for people to exert less effort if they are being evaluated as a group than if they are individually accountable

When being part of a group increases concerns over evaluation, social facilitation occurs. When being part of a group decreases concerns over evaluation, social loafing occurs

Social control (SOC)

Sociologists identify two basic forms of social control:

- **Informal means of control** – **Internalization of norms and values by a process known as socialization**, which is defined as "the process by which an individual, born with behavioral potentialities of enormously wide range, is led to develop actual behavior which is confined to the narrower range of what is acceptable for him by the group standards".[2]
- **Formal means of social control** – **External sanctions enforced by government** to prevent the establishment of chaos or anomie in society. Some theorists, such as Émile Durkheim, refer to this form of control as regulation.

Peer pressure (PSY, SOC) You want to be accepted by society, so you do stuff that your peers do

Conformity (PSY, SOC) Changing your behavior because of peer pressure

Obedience (PSY, SOC) Changing your behavior because of authority

Conformity and Obedience

Solomon Asch – tested the effects of group pressure on individual's behavior

- Subjects were asked to determine which of three lines were most similar to a comparison line
 - when done alone, everyone got perfect scores
 - when placed in a room with **confederates** (part of the experiments), and all of them saying the wrong lines, more than a third of the subjects conformed
- **Conformity** – phenomenon of adjusting behavior or thinking based on the behavior or thinking of others

Stanley Milgram – fake shock study

- Participants believed they were in control of equipment that delivered shocks to a student who was attempting to pass a memory test (no shocks were actually used)
 - researcher directed him to administer levels of increasing shock, when student answered incorrectly
 - participant could hear shouts of pain, but were still obedient

Three ways that an individual's behavior may be motivated by social influence:

Compliance – compliant behavior is motivated by desire to seek reward or to avoid punishment

Identification – motivated by the desire to be like another person or group (Asch)

Internalization – motivated by values and beliefs that have been integrated into one's own value system – most endearing motivation

Group Decision-making Processes (PSY, SOC)

Group polarization (PSY)

Group Polarization

Groups tend to intensify the preexisting views of their members—the average view of a member of the group is accentuated. It does not mean that the group becomes more divided on an issue, but suggests that the entire group tends toward more extreme versions of the average views they initially had. When you consider group polarization phenomenon with the fact that people tend to preferentially interact with like-minded people, you can see why group negotiations are so difficult.

- Reasons that this occurs:
 - **informational influence** – in group discussion, the most common ideas to emerge are the ones that favor the dominant viewpoint, persuading others to take a stronger stance toward this viewpoint and providing an opportunity to rehearse and validate these opinions, strengthening them
 - just thinking about an opinion by yourself for a couple minutes is likely to strengthen it, because we usually just think of things that support it
 - **Normative influence** – based on social desirability, wanting to be accepted or admired by others
 - **Social comparison** – evaluating our opinions by comparing them to those of others

Groupthink

Groupthink

A state of harmony within a group, can lead to some pretty terrible decisions; manifests when certain factors come together:

- Group is overly optimistic of its capabilities, has unquestioned belief in its stances
- Group becomes increasingly extreme by justifying its own decisions while demonizing those of opponents
- Some members of the group prevent dissenting opinions from permeating by filtering out information that goes against the beliefs of the group—**mindguarding**
- There is a pressure to conform, so individuals censor their own opinions in favor of consensus

Normative and Non-normative Behavior (SOC)

Social norms (PSY, SOC)

Norms – spoken/unspoken rules and expectations for the behavior of its members, posited by a society

Normative behavior – social behaviors that follow these expectations

Formal norms – written down (laws)

Informal norms – generally understood but less precise, often carry no specific punishments (handshake)

- **Sanctions (SOC)**
- **Sanctions** – rewards and punishments for behaviors that are normative or not normative (ex: disapproving, uncomfortable look)
- **Folkways, mores, and taboos (SOC)**
- **Mores** (“more-ays”) – norms that are highly important for the benefit of society, **strictly enforced** (no treason or animal abuse)
- **Folkways** – less important but shape everyday behavior (styles of dress, ways of greeting)
- **Taboo** – behaviors that customs forbid, results in disgust toward the violator. Often a moral or religious component (eating pork, cannibalism, incest, murder).
- **Anomie (SOC)**

Anomie – concept that describes the social condition in which individuals are not provided with firm guidelines to norms and values, and there is minimal moral guidance or social ethic—state of **normlessness**

- Emile Durkheim's research suggested that suicide rates were lower in cultures that valued communal ties, as this provided a form of support during times of emotional distress. Anomie is characteristic of societies in which social cohesion is less

pronounced—for example, may be more likely to occur in societies where individualism and autonomous decision-making predominate, at the expense of the greater social order

Deviance

- Perspectives on deviance (e.g., differential association, labeling theory, strain theory)

Deviance

Describe cases where individuals do not conform to the expectations implicit in social structure—**non-normative behavior** – challenged shared values and institutions, threatening social structure

Deviance – actions that dominate social norms, whether formal or informal

- Is also a social construct, situational and contextual
 - murder is acceptable in war and self-defense
 - subject to change
- Often studied through the lens of crime

Functionalist Perspective

- Edwin Sutherland's **differential association** – argues **that deviance is a learned behavior resulting from interactions between individuals and their communities**. When an individual participates in communities that condone deviant behaviors, it becomes easier for the individual to learn these behaviors and become deviants
 - Criticism: people are reduced to their environments, not considered as independent, rational actors with personal motivations

Conflict Theory

- Howard Becker's **labeling theory** – suggests that deviance is the **result of society's response to a person rather than something inherent in the person's actions**—it assumes that the act itself is not deviant for intrinsic moral reasons. The use of negative labels can have serious consequences—**self-fulfilling prophecies**
 - individual exhibits more deviant behaviors to fulfill expectations of his label
 - It is the most dominant groups labeling the subordinate groups
 - agents of social control
 - reinforces power structures and hierarchies
 - Criticism: deviance is assumed to be an automatic process: people may be able to ignore social expectations

Symbolic Interactionism

- Robert Merton's **structural strain theory** – perspective purports that deviance is the result of experienced strain. Merton specified that anomie is the state in which there is a mismatch between the common social goals and the structural, institutionalized means of obtaining these goals. In this state, they experience strain, and there is pressure to use deviant methods to prevent failure **Stringer Bell and Avon Barksdale**
 - Lower class expected to use deviant methods of reaching economic success

Aspects of collective behavior (e.g., fads, mass hysteria, riots)

Collective Behavior – social norms for the situation are **absent or unclear**. Collective behavior **is more short-lived than group behavior**, and less conventional values influence the group's behavior

- Do not reflect the existing social structure but are **instead spontaneous situations** in which individuals engage in actions that are **otherwise unacceptable** and violate social norms
- Loss of individual and independent moral judgement in exchange for sense of group (mobs)

Herbert Blumer – sociologist who identified four main forms of collective behavior

- **Crowds** – **group that shares a purpose**, can influence herd behavior
 - not all crowd behavior is irrational
 - include acting crowds (for a specific goal), casual crowds, conventional crowd (gathered for planned event), expressive crowds (gathered to express an emotion, like at a funeral)
 - panic – situation in which fear escalates to the point that it dominates thinking and affects entire groups
- **Publics** – group of individuals **discussing a single issue, ceases as the discussion ceases**
- **Masses** – group whose formation is prompted through the efforts of **mass media**, share common interest
- **Social movement** – collective behavior with intention of **promoting change**
 - **active** – attempt to foster social change (revolutions)
 - **expressive** – attempt to foster individual change (support groups)

Fad – collective behavior in which something experiences a rapid and dramatic incline in reputation, remains popular among a large population for a brief period, and experiences a rapid and dramatic decline in reputation

Trends – are longer-lived and often lead to more permanent social changes (hippie trend), not a form of collective behavior

Mass hysteria – collective behavior that refers to the **collective delusion** of some threat that spread through emotions and escalates until it spirals out of control (**Salem Witch Trials**)

- Differ from outbreaks, epidemics, and pandemics (actual spread of infectious disease, with outbreaks being the smallest in scope and pandemics being the largest)

Riots – collective behavior, occur as a result of **general dissatisfaction with social conditions**, like in response to hunger or oppression. there is no specific end. Increase in criminal behavior and unrest

Socialization (PSY, SOC)

Agents of socialization (e.g., the family, mass media, peers, workplace)

Agents of Socialization

- Family – teach children customs, beliefs, and traditions of their cultures
- Schools – value logic and linear thinking, creativity, (can differ)
- Peer Groups – more important as children grow older
- Workplace – through written codes and rules, as well as through informal norms
- Religion/Government – create “rites of passage” like coming of age and marriage, legal rules (drinking, voting)
- Mass Media/Technology – television, cell phones, educational programming (can be positive or negative)

Content Category 7C: Attitude and Behavior Change

Habituation and Dishabituation (PSY)

Nonassociative – occurs when an organism is repeatedly exposed to **one type of stimulus**

- **Habituation** – forming a habit—an action that is performed repeatedly until it becomes automatic; you “tune out” the stimulus **Note that this really isn’t forming a habit, it’s more of not doing something**
 - **Dishabituation** – occurs when the previously habituated stimulus is removed. After a person has been habituated to a given stimulus, and the stimulus is removed, this leads to dishabituation: the person is no longer accustomed to the stimulus. If the stimulus is presented again, the person will react to it as if it was a new stimulus
- **Sensitization** – the opposite of habituation; there is an increase in the responsiveness due to either a repeated application of a stimulus or a particularly aversive or noxious stimulus—the stimulus actually produces a more exaggerated response.
 - **Desensitization** – occurs when a stimulus that previously evoked an exaggerated response no longer evokes an exaggerated response.
 - Ex: going to a rock concert may make you more sensitive to loud noises, even right after a concert, but gradually regular loud noises won’t bother you as much (desensitization)

Associative Learning (PSY) – describes the process of learning which one event, object, or action is directly connected with another

Classical conditioning (PSY, BIO)

- Neutral, conditioned, and unconditioned stimuli
- Conditioned and unconditioned response
- Processes: acquisition, extinction, spontaneous recovery, generalization, discrimination
- **Classical conditioning** – **two stimuli** are paired in such a way that the response to one of the stimuli changes
 - **Pavlov’s dogs** – trained to salivate at the sound of a ringing bell
 - **Neutral stimulus** – stimulus that initially does not elicit any intrinsic response (sound of the bell)
 - **Unconditioned Stimulus (US)** – stimulus that elicits an unconditioned response (UR). Presentation of food is the US and salivation is the UR.
 - **Conditioned Stimulus (CS)** – an originally neutral stimulus (bell) that is paired with an unconditioned stimulus (food) until it can produce the conditioned response without the unconditioned stimulus
 - **Conditioned Response (CR)** the learned response to the conditioned stimulus. **The same as the unconditioned response**
 - **Acquisition** – process of learning the conditioned response. The time during experiment when the bell and food are always paired
 - **Extinction** – occurs when conditioned and unconditioned stimuli are no longer paired, so the conditioned response eventually stops occurring
 - **Spontaneous Recovery** – when an extinct conditioned response occurs again when the conditioned stimulus is presented after some period of time (without the pairing of the unconditioned stimuli)
 - **Generalization** – process by which stimuli other than the original conditioned stimulus elicit the conditioned response (dog’s salivating to the sound of a chime or doorbell)
 - **Discrimination** – opposite of generalization, occurs when the conditioned stimulus is differentiated from other stimuli (dogs do not salivate at the sound of a buzzer or horn)
 - **Taste-aversion** – powerful and very long-lasting association in most animals, caused by nausea. Quick acquisition phase, indefinite extinction phase

Operant conditioning (PSY, BIO) uses reinforcement and punishment to mold behavior

- Processes of shaping and extinction
- uses reinforcement and punishment to mold behavior
- Types of reinforcement: positive, negative, primary, conditional
- **Operant Conditioning** – uses reinforcement and punishment to mold behavior
 - **B.F. Skinner** – rats and lever—food or stopping shock

- **Reinforcement** – anything that will increase the likelihood that a preceding behavior will be repeated
 - **positive reinforcement** – a desirable stimulus that occurs immediately following a behavior (food pellet)
 - **Negative Reinforcement** – removing an undesirable stimulus (shock)
 - *The amygdala is important in negative reinforcement, the hippocampus is important in positive conditioning*
- **Primary reinforcers** – innately satisfying or desirable (food, avoiding pain/danger)
- **Secondary reinforcers** – those that are learned to be reinforcers; neutral stimuli paired with primary reinforcers to make them conditioned (receiving stamps for reading, exchanging those stamps for pizza)
- **Reinforcement schedules: fixed-ratio, variable-ratio, fixed-interval, variable-interval**
 - **Reinforcement schedule**
 - **continuous** – every occurrence of the behavior is reinforced
 - results in rapid acquisition, but also rapid extinction
 - **intermittent** – occurrences are sometimes reinforced, sometimes not
 - results in slower acquisition, but greater persistence (resistance to acquisition)
 - It is possible to initially condition a behavior using continuous schedule, maintain with intermittent reinforcement
 - Intermittent schedules
 - **fixed-ratio** – provides the reinforcement after a set number of instances of the behavior (rats receiving a food pellet every 10 times it pushes the lever). After being conditioned, the rat will demonstrate a high rate of response, pushing the lever rapidly, many times to get the food
 - **variable-ratio** – provides the reinforcement after an unpredictable number of occurrences (gambling). Produces high response rates like fixed-ratio
 - **Fixed-interval** – provides the reinforcement after a set period of time that is constant. Behavior will increase as the reinforcement interval comes to an end
 - **variable-interval** schedule – provides the reinforcement after an inconsistent amount of time. Produces a slow, steady behavior response rate
 - Overall, a continuous schedule produces slow response rates and fast extinction rates. It is the most efficient way to learn a behavior. Fixed schedules produce medium extinction rates, while variable schedules produce the slowest rates of extinction
- **Punishment**
 - **Punishment** – opposite effect as reinforcing
 - **positive** – involves the pairing of an undesirable stimulus with the behavior
 - **negative** – removal of a desirable stimulus after the behavior has occurred
 - Reinforcement is more effective than punishment because it tells what to do, while punishment just tells you what not to do
- **Escape and avoidance learning**
 - **Escape** – individual learns how to get away from an aversive stimulus by engaging in a particular behavior (child does not want to eat her vegetables, so she throws a temper tantrum)
 - **Avoidance** – person performs a behavior to ensure an aversive stimulus is not presented in the first place
 - Escape: you touch a caterpillar, it stings you, you jerk away
 - Avoidance: you learn to not touch a caterpillar

The role of cognitive processes in associative learning

Cognitive Processes that affect Associative Learning

Behaviorism – all psychological phenomena are explained by describing the observable antecedents of behaviors and its consequences (conditioning). Views the brain as a “black box” which does not need to be incorporated into the discussion

Cognitive psychology – formed in response to behaviorism, researchers began to focus on the brain, cognitions, and their effects on how people navigate the world

- **Insight learning** – previously learned behaviors are suddenly combined in unique ways
- **latent learning** – something is learned but not expressed as an observable behavior until it is required

Biological processes that affect associative learning (e.g., biological predispositions, instinctive drift) (PSY, BIO)

Biological Factors that Affect Nonassociative and Associative Learning

Biology serves as a constraint for learning—we can not learn to do simply anything/everything. Learning occurs more quickly if it is biologically relevant, i.e., essential to survival. The process of learning results in physical changes to the central nervous system.

Certain synaptic connections develop in the brain when a memory is formed. **Short-term memory** lasts for seconds to hours, and can potentially be converted into **long-term memory** through a process called **consolidation**.

Long-Term Potentiation – occurs when, following brief periods of stimulation, and increase in the synaptic strength between two neurons leads to stronger electrochemical responses to a given stimuli. The sending neuron needs less prompting to fire its impulse

and release its neurotransmitter, and the receiving neurons have more receptors for the neurotransmitter (increased sensitivity means either of these two possibilities occurring). Can last for hours or even weeks. After long-term potentiation occurs, passing an electric current through the brain doesn't disrupt the memory associations between the neurons involved, although other memories will be wiped out (like in a concussion). Long-term memory storage involves more permanent changes to the brain, including structural and functional connections between neurons. Visual imaging studies suggest that there is greater branching of dendrites in regions of the brain thought to be involved with memory storage.

Instincts: mother goose will protect her eggs. If you try to teach a goose to abandon eggs, it won't work because it goes against their instinct, this process is called instinctive drift

Observational Learning (PSY)

Observational learning (social or vicarious learning) – learning through watching and imitating others

Modeling

Modeling – observer sees the behavior being performed by another person. Later, the observer imitates the behavior.

- Albert Bandura – experiment with Bobo doll showed that individuals may choose to imitate behaviors even if they do not observe the consequences of the model's behavior

Biological processes that affect observational learning

- Mirror neurons
- **Mirror Neurons** – fire when we perform a task, as well as when we observe another performing the task. Believed to be activated by **connecting the sight and action** of a movement.
- Role of the brain in experiencing vicarious emotions
- Feeling what other feel. Empathy = feeling an emotion that you share. Vicarious = feeling an emotion even if you don't share it. Eg: seeing someone skateboard, you're like wow that must be so fun, even though you never skateboarded before.

Applications of observational learning to explain individual behavior

Loving family makes someone a loving person. Abusive family makes someone an abusive person.

Theories of Attitude and Behavior Change (PSY)

Elaboration likelihood model

Elaboration likelihood model – explain when people will be influenced by the content of the speech, and when people will be influenced by other, more superficial characteristics like the appearance of the orator, or length of the speech

Three key elements of persuasion

- **Message characteristics** – logic, number of key points, length of speech, grammatical complexity
- **Source characteristics** – of the person or venue delivering the message, like expertise, trustworthiness, importance
- **Target characteristics** – of the person receiving the message, such as self-esteem, intelligence, mood

Two cognitive routes that persuasion follows

- **Central route** – people are persuaded by the content of the argument
- **Peripheral route** – people focus on superficial or secondary characteristics of the speech or orator

Elaboration likelihood model argues that people will choose the central route only when they are interested in the topic and are not distracted. If not, they will choose the peripheral route.

Social cognitive theory

Social Cognitive Theory – theory of behavior change that emphasizes the interactions between people and their environment.

Focuses on how we interpret and respond to external events, and how our past experiences, memories, and expectations influence our behavior. Unlike behaviorism, where the environment controls us, cognition (how we process our environment) is also important in determining our behavior.

Reciprocal determinism – interaction between a person's behaviors (conscious actions), personal factors (individual motivational forces or cognitions), and the environment (situational factors). Three different ways that individuals interact with their environment:

- People choose their environments, which in turn shape them (choose which college you go to)
- Personality shapes how people interpret and respond to their environment (people with depression view their jobs as pointless)
- Personality influences the situation to which he then reacts (how you treat someone else influences how they treat you)
 - In these three ways, people both shape and are shaped by their environments

Factors that affect attitude change (e.g., changing behavior, characteristics of the message and target, social factors)

- Changes in your behavior -> observed by others -> Changes attitude
- Message -> influences target -> affects attitude
- Social = environment -> influences individual attitudes

Foundational Concept 8

Content Category 8A: Self-identity

Self-Concept, Self-identity, and Social Identity (PSY, SOC)

Broadly defined as the sum of an individual's knowledge and understanding of himself. Differs from **self-consciousness** (an awareness of oneself) because it includes physical, psychological, and social attributes, which can be influenced by the individual's attitudes, habits, beliefs, and ideas. It is the answer you would give to the question, "Who am I?"

Self Concept is how an individual defines himself based on beliefs that person has about himself—known as **self-schemas**.

The role of self-esteem, self-efficacy, and locus of control in self-concept and self-identity (PSY)

- Self esteem = how you feel about yourself
- Self efficacy = your confidence in succeeding
- Locus of control = who controls your fate
 - Internal locus = you control your fate
 - External locus = others, luck control your fate

Carl Rogers – founder of the humanistic psychology perspective, believed that personality is composed of ideal self and real self

- **Ideal self** – constructed out of your life experiences, societal expectations and the things you admire about role models
 - The person you ought to be, where the real self is the person you actually are
 - If ideal self is similar to real self, the result is a positive self-concept
 - Usually, ideal self is an impossible standard, and the result is **incongruity**

Self-Esteem, Self-Efficacy, and Locus of Control in Self-Concept and Identity

- **Self-efficacy** – belief in one's own competence and effectiveness. Improves performance
- **Locus of Control** – can be internal or external
 - **internal** – belief that they are able to influence outcome through their own efforts
 - **External** – perceive outcomes as controlled by outside forces
 - can lead to **learned helplessness** – phenomenon where people have a lack of action, even in areas in which they can exert some control
- **Self-esteem** – one's overall self-evaluation of one's self worth. Self-efficacy can improve self-esteem if one has it for an activity that one values. However, if it is in an area that one does not value, it will not help self-esteem

Self identity

- Self-verification – tendency to seek out (and agree with) information that is consistent with one's self concept

Different types of identities (e.g., race/ethnicity, gender, age, sexual orientation, class)

Different Identities—Social and Personal

Personal identity – consists of one's own sense of personal attributes (smart, funny)

Social identity – consists of social definitions of who you are (race, gender, occupation)

Different aspects of one's identity: ADDRESSING: Age, Disability status, Religion, Ethnicity/Race, Sexual Orientation, Socioeconomic status, Indigenous status, National identity, Gender

Self-reference effect – tendency to better remember information relevant to ourselves. Inconsistent information is more difficult. It is easier to externalize information that opposes a self concept (blaming a bad test score on bad sleep rather than on intelligence). When people have positive self-concepts (I am intelligent), they tend to act positively and have more optimistic perceptions of the world

Formation of Identity (PSY, SOC)

Theories of identity development (e.g., gender, moral, psychosexual, social)

Stages of Identity Development

Identity formation, or **individuation**, is the development of a distinct individual personality.

- Moral = Kohlberg = development of moral thinking by cognitive reasoning, resolving moral dilemmas and the concept of right and wrong.
 - Preconventional morality (preadolescent): centered on consequences
 - Obedience: fear of punishment
 - Self-interest: desire to gain reward
 - Conventional morality (adolescent): social roles
 - Conformity: seeks approval of others. Eg. Good boys don't steal.
 - Law and order: social order. Eg. If everyone steals, then society wouldn't function.
 - Postconventional morality (adult): social rules
 - Social contract: individual rights. Eg. Everyone has a right to live.

- Universal human ethics: abstract principles. Eg. Bribing the teacher for a good grade just feels wrong...
- Psychosexual = Freud = our sexuality and libido (sex drive) influences our psychology, and manifests differently as we develop. Fixation (overindulgence or frustration) during a stage leads to problems later on.
 - Oral state (0-1): we like to feel orally, like sucking, biting, putting things in our mouth. Fixation at this stage leads to excessive dependency later on.
 - Anal stage (1-3): we like to feel anally, like defecating. Fixation can lead to excessive orderliness or sloppiness.
 - Phallic stage (3-5): males love mom and envy dad (Oedipal conflict). Females love dad and envy mom (Electra conflict). To resolve these conflicts, the child identifies with the same-sex parent and focuses energy on other things like school.
 - Latency stage: upon resolution of the Oedipal/Electra conflict
 - Genital stage: enters heterosexual relationship starting at puberty. Sexual traumas in early stages lead to homosexuality, asexuality or fetishism.
- Psychosocial = Erikson = social interactions shapes psychology. Conflicts caused by social demands causes problems later on.
 - Trust/mistrust (0-1): can I trust others? Conflict leads to later paranoia
 - Autonomy vs shame and doubt (1-3): can I be myself? Conflict leads to external locus of control.
 - Initiative vs guilt (3-6): can I act? Conflict leads to either being too afraid to act or overcompensating by showing off
 - Industry vs inferiority (6-12): can I be competent? Conflict leads to low self esteem and self efficacy
 - Identity vs role confusion (12-20): who am I? Conflict leads to lack of personality/identity.
 - Intimacy vs isolation (20-40): can I love? Conflict leads to isolation and inability to form true relationships.
 - Generativity vs stagnation (40-65): can I make a difference? Conflict leads to boredom or self-centeredness.
 - Integrity vs despair (65+): did I live a good life? Conflict leads to bitterness and fear of death.

Influence of social factors on identity formation

- Influence of individuals (e.g., imitation, looking-glass self, role-taking)

Influence of Social Factors on Identity Formation

Influence of Individuals

- Imitation: we imitate role models, peers, especially those similar to us and those we identify with
- **Charles Cooley** – American sociologist, posited idea of **looking glass self** – idea that person’s sense of self develops from interpersonal interactions with others in society and the perceptions of others; people shape their self-concepts based on their understanding of how others perceive them
- ou’re friends see you as funny. Your boss sees you as lazy. Your ex sees you as dumb. Your looking-glass self is a combination of all of these different perceived versions of you by other people.
- **George Herbert Mead** – American sociologist, developed idea of **social behaviorism**: mind and self emerge through process of communicating with others. The idea that the mind and self emerge thorough the social process of communication or use of symbols was the beginning of the **symbolic interactionism** school of sociology.
 - Specific path of development:
 - Preparatory stage – children merely imitate others
 - Play stage – children take on roles of other through playing (ex: “Mom”)
 - Game stage – children learn to consider multiple role simultaneously, and can understand the responsibilities of multiple roles
 - Finally, develops understanding of the **generalized other**—the common behavioral expectations of general society
 - Also characterized the “me” and the “I”
 - “me” – how the individual believes the general other perceives it—the social self
 - “I” – **the response** to the “me”; in other words, the “I” is the response of the individual to the attitudes of others.
 - The “I” is the self as subject, the “me” is the self as object
 - **“Me” is responsible for preventing the “I” from responding to society in a way that will violate social norms**
 - It is not possible to directly reflect on the “I” since the “I” is the part of the self that is doing the reflecting
-
- Influence of groups (e.g., reference group)
 - **Reference group** – standard measure that people compare themselves to

Influence of culture and socialization on identity formation

Influence of Culture and Socialization

- **Socialization** – process through which people learn to be proficient and functional members of society
 - a lifelong process
 - **Feral children** – not raised with human contact or care; proof of the importance of human contact

Content Category 8b: Social Thinking

Attributing Behavior to Persons or Situations (PSY)

Attributional processes (e.g., fundamental attribution error, role of culture in attributions)

Beliefs about others

Attribution theory – line of research into the causes that people use to explain the observed behaviors of others

Dispositional attribution – assigning the cause of an action to an inherent quality or desire

Situational attribution – deciding that environmental forces were responsible

Fundamental attribution error – tendency to automatically **favor dispositional attributions over situational ones when judging other** people; dispositional attribution happens quickly, requires less information and attention **Only refers to others**

Self-serving bias – tendency to attribute one's success to internal factors while attributing one's failures to external factors; thereby functions to serve self-esteem

Different cultural patterns of thought affect the process of attribution; the fundamental attribution error may be characteristic of Western viewpoints (individualistic). East Asian show a lower bias towards dispositional attributions, and may have a tendency to be biased towards situational attributions, when situational factors are emphasized

How self-perceptions shape our perceptions of others

Influence of our self perceptions: group identification also has an effect; in-group members are viewed more positively and are thought to have a greater variability on assorted personality traits.

When put ourselves in other people's shoes and assume they feel the same way we feel. Bem's original experiment: test subjects see a video of a man raving about doing a boring task. If Bem told the subjects the man was bribed \$20 to do this, the subjects came to the conclusion that the man hated the task in reality. On the other hand, if Bem told them the man was only paid \$1, the subjects assumed the man actually enjoyed the task. Note, all these are assumptions based on self-perception, as the subject never met the man in the video.

How perceptions of the environment shape our perceptions of others

Perceptions of the environment also affect our attributions and perceptions of other people

Examples: body language changes the way you feel about someone. You are also more likely to perceive someone positively if you are in a relaxed, comfortable environment.

Prejudice and Bias (PSY, SOC)

Processes that contribute to prejudice

In group – group with which an individual shares identity and toward which she feels loyalty

Out group – group with which she does not identify and toward which she may feel competition or hostility

Bias – individual favors the in-group and devalues out-groups

Prejudices – strict generalizations about other groups of people

- developed through **schemas** – organizing patterns of thought used to categorize and interpret information
- Schematic processing is relevant to explaining response times during IAT because the speed with which memory schemas (organized clusters of knowledge) are activated and processed is presumed to indicate the participant's implicit attitude
-
- **Power, prestige, and class (SOC)**
 - Power – ability to get other people to do something
 - Prestige – reputation in society
 - Privilege – set of unearned benefits one receives because of some attribute largely outside of their control, like gender, race, class, sexual identity, citizenship status, or ability
- **The role of emotion in prejudice (PSY)**
- **The role of cognition in prejudice (PSY)**

Emotion and Cognition in Prejudice (which is an attitude)

At the core of prejudice is often fear or frustration, when someone is faced with something intimidating or unknown

- Displaced aggression often falls on marginalized people, or **Scapegoats**

When you see an unfamiliar person of another race, **emotion processing centers in the brain become more active automatically**. It is only through active self-monitoring that people are able to inhibit prejudiced responses. These self-inhibitions weaken with age, which explains your racist grandma

Cognition – our brains seek to categorize and organize data based on similarities—lead to stereotypes

- Our brains also hone in on differences. People who are seen as distinctive draw more attention and are often likely to be seen as representative of groups (seeing Michael Jordan, concluding that black people are athletic)

- **illusory correlation** – created between a group of people and a characteristic based on unique cases

Attributional biases – the sick or disadvantaged often face prejudice because others believe that they have done something wrong

Stereotypes

Stereotypes – oversimplified ideas about groups of people, based on characteristics; can be positive or negative; basically putting things/people into categories

Discrimination – involves acting a certain way toward a group (prejudice involves thinking)

- Processes like affirmative action can lead to **reverse discrimination**

Racism – prejudices and actions that discriminate based on race

Institutional discrimination – refers to unjust and discriminatory practices employed by large organizations that have been codified into operating procedures (“don’t ask, don’t tell” policy)

Stigma (SOC)

Stigma and Deviance

Deviance – violation of society’s standards of conduct or expectations

- can involve negative or positive (Rosa Parks) acts

Stigma – assigning demeaning labels to devalue deviant members (ex: fob)

Ethnocentrism (SOC)

- Ethnocentrism vs. cultural relativism
- Ethnocentrism Versus Cultural Relativism
- **Ethnocentrism** – tendency to judge people from another culture by the standards of your own. An example of favoritism for one’s in-group or out-groups
- **Cultural Relativism** – judging another culture by its own standards

Processes Related to Stereotypes (PSY)

Self-fulfilling prophecy

if a race is stereotyped a certain way, people will have those expectations from you and create conditions to fit those stereotypes. Eg: if the stereotype is your race being good at basketball, people will expect you to be good at it without even knowing you, TV ads will show your race playing basketball / wearing Air Jordans. In the end, this makes it easy for you to become that stereotype, thus, a self-fulfilling prophecy

Stereotype threat

Self-Fulfilling Prophecy and Stereotype Threat

Self-Fulfilling prophecy – stereotypes can lead to behaviors that affirm the original stereotypes. Refers to the individual making the stereotypes—that he will engage in behaviors that strengthen his beliefs

Stereotype Threat – refers to self-fulfilling fear that one will be evaluated based on a negative stereotype

- Females performing worse at a math test after getting told that males are better at math

Content Category 8C: Social Interactions

Elements of Social Interaction (PSY, SOC)

Status (SOC)

- Types of status (e.g., achieved, ascribed)
- Statuses and Roles
 - **Status** – broad term in sociology that refers to all the socially defined positions within a society
 - president, parent, resident of Wisconsin, etc
 - **master status** – the one that dominates the others and determines that individual’s general position in society
 - **Ascribed status** – those assigned to a person by society regardless of the person’s own efforts
 - race, gender
 - **Achieved statuses** – considered to be largely due to the person’s efforts (doctor)

Role

- Role conflict and role strain (SOC)
- Role exit (SOC)
- Roles
 - **Social roles** – expectations for people of a given social status
 - **Role conflict** – happens when there is a conflict in society’s expectations for multiple roles held by the same person (male nurse, or gay priest)
 - **Role strain** – when a **single status** results in conflicting expectations
 - Homosexual man may feel pressure to avoid being “too gay” and also “not gay enough”
 - **Role exit** – process of disengaging from a role that has become closely tied to one’s self identity to take on another

Groups

- Primary and secondary groups (SOC)
- In-group vs. out-group
- Group size (e.g., dyads, triads) (SOC)

Primary groups – play a more important role in an individual’s life; usually smaller and include those with whom the individual engages with in person, in long-term, emotional ways (family, friends, peer groups)

- meet for **expressive functions**, meeting emotional needs

Secondary Group – larger and more impersonal, may interact for specific reasons for shorter periods of time

- meet for **instrumental functions**, meeting pragmatic needs

in-group – a group that an individual belongs to and believes to be an integral part of who he is

out-group – a group that an individual does not belong to

- We tend to have favorable impressions of our in-groups and negative impressions

Reference group – standard measure that people compare themselves to

Group size

- **dyad** – 2 people
 - more intimate and intense
 - can be equal or unequal
- **triad** – three members, are apparently more stable than dyads??
 - can be hierarchical or unequal

Networks (SOC)

- Networks and Organizations
 - **Social network** – a web of social relationships, including those in which a person is directly linked to others as well as those in which people are indirectly connected through others (Facebook)
 - **Social network theory** – posits that **people’s networks are important and necessary** for the spread of ideas and resources; there is much strength in weak ties because weak ties allow the sharing of new resources to a vast network
 - It is more likely for participants to find jobs through an acquaintance (weak tie) compared to a close friend (strong tie)

Organizations (SOC)

- **Organization** – large, more impersonal groups that come together to pursue particular activities and meet goals efficiently
 - businesses, governments, religious groups
 - serve the purpose of increasing efficiency, predictability, control, and uniformity in society
 - **Utilitarian organizations** – those in which members get **paid** for their efforts, like businesses
 - **Normative organizations** – motivate membership based on **morally** relevant goals (mothers against drunk driving)
 - **Coercive organizations** are those for which members do not have a choice in joining (**prisons**)

- **Formal organization** - secondary groups that serve a specific need or goal. Ex: Governments, corporations, universities, hospitals

- **Bureaucracy**

Bureaucracy – term used to describe an administrative body and the processes by which this body accomplishes work tasks

- arise from an advanced division of labor in which each worker does his or her small task
 - **Characteristics of an ideal bureaucracy**
- **Max Weber** considered bureaucracy to be a necessary aspect of modern society
 - Ideal bureaucracy:
 - Covers a fixed area of activity
 - hierarchically organized
 - workers have expert training in area of specialty
 - organizational rank is impersonal, advancement depends on technical qualification
 - Workers follow set procedures to increase predictability and efficiency
 - Perspectives on bureaucracy (e.g., iron law of oligarchy, McDonaldization)
- **Rationalization** – describes process by which tasks are broken down into component parts to be efficiently accomplished by workers within the organization
 - **Ford’s assembly line**
 - **McDonaldization** – rationalization of fast food production
 - Four components
 - efficiency
 - calculability (assessing performance through quantity and/or speed of output)
 - predictability

- control (automating work where possible in order to make results more predictable)
- Problems: set procedures (something might change, unprepared), may lose sight of overall target, and inflexibility
- As bureaucracies become more complex, it becomes more conservative and less able to adapt
 - revolutionary organizations inevitably become less revolutionary as their organizational structures develop and become entrenched—**Iron Law of Oligarchy** – tend to shift toward being ruled by an elite group

Self-presentation and Interacting with Others (PSY, SOC)

Expressing and detecting emotion

Social Interactions

- Expressing and Detecting Emotion
 - vital in explaining how we react to situations and others
 - Some emotional responses, such as likes/dislikes, involve no conscious thought. More complex emotions, like hatred, love, and guilt, can have important influences on our memories, expectations, and interpretations
- The face is very revealing in conveying emotion
 - if we glimpse a face for a mere tenth of a second, we can accurately judge the emotion it portrays
 - eyes and mouth convey the most emotion
 - fear and anger in the eyes
 - happiness in the mouth
- The role of gender in the expression and detection of emotion

Gender shapes expression

- Women may surpass men at reading emotional cues
 - greater emotional literacy, or ability to describe their emotions
 - also demonstrate greater emotional responsiveness in positive and negative situations, with the exception being anger—considered a masculine emotion
- **Empathy** – ability to identify with others' emotions, relatively equal between the sexes
 - women, however, are more likely to express empathy by crying or reporting genuine distress at another's misfortune
- The role of culture in the expression and detection of emotion

Culture Shapes Expression

- Different ways to express common emotions across different cultures
- Gestures vary widely between cultures
 - thumbs up is positive in American culture, negative in others
- Certain facial expressions seem to be universal
- Cultures that promote individuality also encourage emotional expressiveness

Presentation of self

- Impression management

Impression Management

- Impression management/self-presentation – conscious or unconscious process whereby people attempt to manage their own images by influencing the perceptions of others
- Expressing parts of oneself, depending on the person on the receiving end of the interaction
 - **Assertive strategies** – use of active behaviors to shape our self-presentations, such as talking oneself up and showing off flashy status symbols to demonstrate a desired image
 - **Defensive strategies** include avoidance or self-handicapping
 - **Self-handicapping** – a strategy in which people create obstacles and excuses to avoid self blame when they do poorly
 - Ex: student loudly declaring he didn't study
- Front stage vs. back stage self (Dramaturgical approach) (SOC)
- Front Stage vs Back Stage Self
- **Dramaturgical perspective** – stems from symbolic interactionism and posits that we imagine ourselves as playing certain roles when interacting with others. *Our identities are not necessarily stable, but dependent on our interactions with others*
- **Front Stage** – we play a role and use impression management to craft the way we come across to other people
- **Back stage** – we can let down our guard and be ourselves

Verbal and nonverbal communication

Verbal and Nonverbal Communication

Nonverbal communication involves all of the methods for communication that we use that do not include words

- include gestures, touch, body language, eye contact, expressions, etc
- act of communicating verbally also employs a lot of nonverbal cues, like pitch, volume, intonation, etc

Animal signals and communication (PSY, BIO)

Animal signals and communication

Visual cues

- poisonous animals have **warning colors** – bright colors meant to advertise their toxicity
 - mimicry – mimicking the color of an actual poisonous animal, even though they are not

Auditory communication

Chemical signals

- pheromones – chemical messengers employed by animals to communicate with each other

Touch or movement

- mating dances

Social Behavior (PSY)

Attraction

Attraction between members of the same species is a primary component of love

- **Appearance** – physical attractiveness is an important predictor of attraction
- **Similarity** between people impacts attraction

Aggression

Aggression – broadly defined as behavior that is forceful, hostile, or attacking

- Considered an innate instinct
- Three predictors: genetic, neural, and biochemical
- Frustration-aggression principle – suggests that when someone is blocked from achieving a goal, this frustration can trigger anger, which can lead to aggression

Attachment

Proximity – most powerful predictor for friendship

- Mere exposure effect – people prefer repeated exposure to the same stimuli—familiarity breeds fondness

Social Development and Attachment

Stranger anxiety – from approximately 8-12 months, young children display this, crying and clinging to the caregiver. Faces that do not fit an already developed schema leads to distress. Gradually declines around 13 months.

Harry Harlow and **Margaret Harlow** – infant monkeys were separated from mothers at birth and provided with a baby blanket. When blankets were removed, they became distressed. This physical attachment seemed to counteract the idea that attachment was formed base on nourishment. Two artificial mothers, one nourishing, and the other not nourishing (only had blanket). The monkeys still preferred the blanket mother, rather than the nourishing mother.

Mary Ainsworth- “strange situation experiments.” Mothers leave their infants in an unfamiliar environment to see how the infants react. **Securely attached infants** will play and explore in the presence of their mother, but become distressed when mother leaves, and is easily consoled when she returns. **Insecurely attached infants** in the presence of their mother are less likely to explore their surroundings, and when mother leaves, they will cry loudly, and will remain upset or become indifferent when she returns.

Securely attached infants grow up to demonstrate better social skills, a greater capacity for effective intimate relationships, and are better able to promote secure attachments in their children.

Altruism

Social support (PSY, SOC)

Social support – major determinant of health and wellbeing for humans and other animals

Biological explanations of social behavior in animals (PSY, BIO)

- Foraging behavior (BIO)
- Foraging behavior – describes the search for food resources by animals
- Mating behavior and mate choice

Mating Behavior and Mate choice – involve courtship rituals, copulation, and the building of nests

- **random mating** ensures the largest amount of genetic diversity, and protects against genetic drift and bottlenecking
- **Associative mating** is nonrandom – similar genotypes or phenotypes mate more frequently
- **Negative assortative mating** – nonrandom, more likely between disparate traits
- Applying game theory (BIO)

Applying game theory

- **Game theory** – used to try and predict large, complex systems, such as the overall behavior of a population
- might be useful in predicting behavior of a large crowd of people in an enclosed space during a disaster, for instance
- Altruism

Inclusive fitness – defined by the number of offspring that an organism has, how it supports its offspring, and how its offspring support others in a group

- **inclusive fitness theory** proposes that an organism can improve its overall genetic success through altruistic social behaviors
- **altruistic behavior** – one that helps ensure the success or survival of the rest of a social group
- Inclusive fitness (BIO)

Discrimination (PSY, SOC)

Discrimination – involves acting a certain way toward a group (prejudice involves thinking)

- Processes like affirmative action can lead to **reverse discrimination**

Individual vs. institutional discrimination (SOC)

Institutional discrimination – refers to unjust and discriminatory practices employed by large organizations that have been codified into operating procedures (“don’t ask, don’t tell” policy)

The relationship between prejudice and discrimination

Prejudice – refers to the **thoughts**, attitudes, and feelings someone holds about a group that are not based on actual experience. Can be subconscious

Discrimination – involves acting a certain way toward a group (prejudice involves thinking)

How power, prestige, and class facilitate discrimination (SOC)

power (ability to obtain goals), prestige (respect), and class (socioeconomic status) divides people into haves and have-nots. This leads to prejudice and discrimination.

Foundational Concept 9: Cultural and social differences influence well-being

Content Category 9A: Understanding social structure

Theoretical Approaches (SOC)

Microsociology vs. macrosociology

Society – group of people who share a culture and live with each other in a definable area

Sociology - attempts to *understand the behavior of groups*, studying how individuals interact with, shape, and are shaped by the society in which they live

Macro-sociologists – interested in how large-scale structures effect individual actions

Micro-sociologists – interested on the effects of individuals on the social structure

Functionalism

- **Functionalism** (macro)– views the society as a living organisms with many different parts and organs
 - Championed by Emile Durkheim, the father of sociology
 - argued that complex societies involved many different but interdependent parts working together to maintain stability, a type of **dynamic equilibrium**
 - **Manifest functions** – **intended**, obvious consequences of a structure
 - **Latent functions** – **unintended**, less recognizable consequences—can be beneficial, neutral or harmful
 - Manifest function of a hospital may be to heal people, latent function may be to reduce crime by providing jobs

Conflict theory

- **Conflict Theory** (macro)– views society as a competition for limited resources
 - those with most power and influence maintain their positions of power by suppressing the advancement of others
 - **Karl Marx** – looked at the economic conflict between different social classes; believed capitalism produced internal tensions that would ultimately lead to self-destruction, replaced by socialism
 - **Ludwig Gumplowicz** – expanded Marx’s ideas, proposed society is shaped by war and conquest
 - **Max Weber** – did not believe collapse of capitalism was inevitable; argued that there are more sources of conflict present than just economics, like political power or social status

Symbolic interactionism

- **Symbolic Interactionism** (micro)– looks at society from a micro perspective
 - championed by **George Herbert Mead**
 - Interested in the symbols that people use to contribute values and beliefs to others
 - Ex: dress codes at the workplace can communicate a sense of whether the setting is casual or formal
 - Holds the principle of meaning to be the central aspect of human behavior
 - we ascribe meaning to things, language allows humans to generate meaning, etc
 - Dramaturgical approach – people are theatrical performers and everyday life is a stage

Social constructionism

Social Constructionism – argues that people shape their reality through social interactions—society is constructed, not inherent

- **Social construct** – concept or practice that is a construct of a group, no internal value
 - Marriage—exists entirely within human society, containing own specific rules, morals, etc.

Exchange-rational choice

Rational Choice and Social Exchange Theories

- Economics plays a role in sociology—its viewpoint is that individuals make rational decisions
 - **Cost-benefit analysis** – individuals make rational economic decisions to **minimize costs and maximize benefits**
- **Rational Choice theory** – concerned with decisions made between multiple courses of actions, with the decision made providing the greatest reward at the lowest cost

- more concerned with measurable resources (extrinsic costs rather than intrinsic, emotional costs)
- **Social Exchange Theory** – applies rational choice theory to social interactions
 - Profit from interaction – reward – punishments
 - also concerned with emotional rewards and costs, not just economical
- **Methodological individualism** – argues that all social realities are the result of **individual actions and interactions**
- Fails to consider large-scale structures

Feminist theory

Feminism

- Concerned with differences in social experiences of men and women
- Collection of social movements with purpose of establishing men and women as equals in terms of social rights
- **Glass ceiling** – invisible barrier that limits opportunities for the promotion of women in professional contexts
- **Wage gap** – men and women report consistent differences in income

Social Institutions (SOC)

Social institutions – complexes of roles, norms, and values organized into a relatively stable form

Ex: family, religions, health care system

Education

Education

Contains both manifest and latent functions

- **Manifest**: passing down knowledge, giving a status
- **Latent**: socialization, social control

Helps maintain cultural norms

- **Hidden curriculum**
- **Hidden Curriculum** – lessons learned in school that may not be stated in the lesson plan
- **Teacher expectancy**
- **Teacher Expectancy Theory** – students perform in accordance with the teacher's expectations
 - Teachers quickly form expectations of individual students and act toward the student with these expectations in mind
 - Can help children exceed their own expectations of themselves
 - Can also underestimate students
- **Educational segregation and stratification**
- **Education segregation** – widening disparity between children from high-income neighborhoods and those from low-income neighborhoods
- **Educational Stratification** – a social arrangement that becomes entrenched through educational segregation and is reproduced in new generations of children

Family (PSY, SOC) \

Family

Five functions: Reproduction/Sex, Protection, Socialization (passing down norms), Companionship, Social Status

Nuclear family – direct blood relations

Extended family – grandparents, aunts, uncles, etc

Monogamy – two individuals

Polygamy – multiple wives/husbands

Polygyny – one man, more women

Polyandry – one woman, more men

Endogamy – practice of marrying within a particular group

Exogamy – refers to a requirement to marry outside a particular group

- **Forms of kinship (SOC)**

Kinship – how we think about who we are related to

- **Kin** is considered a cultural group rather than a biological one
 - Can include extended family and members of the community or friends (like godparents and close family friends that are referred to as “aunts” and “uncles”)

Forms of kinship

- Primary kins = next to each other on a pedigree = husband-wife, parent-child, siblings
- Secondary kins = separated by one kin on a pedigree = your parent's parent (grandparents), your parent's sibling (aunts/uncles)
- Tertiary kins = separated by two kins on a pedigree = your parent's sibling's children (cousins)
-
- **Bilateral descent** – if kin groups involve both maternal and paternal relations
 - preference for paternal and maternal relations is called **patrilineal** and **matrilineal descent**

- **There are two basic kinds of kinship ties: those based on blood ties that trace descent and those based on marriage, adoption, or other connections.**
- Diversity in family forms
- **Patriarchy** – Men have more power
- **Matriarchy** – Women have more power
- **Egalitarian family** – spouses are treated as equals
- Marriage and divorce
- Violence in the family (e.g., child abuse, elder abuse, spousal abuse) (SOC)
- Child abuse – involves violence directed toward child target
 - four categories: physical, emotional, sexual, and neglect
- Domestic abuse – also referred to as spousal abuse, involves violence directed toward one partner of an intimate relationship, where the abuser is the second partner
- Elder abuse – involves violence directed toward an older target
 - Added element: there is an expectation of trust from the older person, which is violated in the course of violence

Religion

- Religiosity
- **Religiosity** – refers to the extent of influence in a person's life
- Types of religious organizations (e.g., churches, sects, cults)

Forms of religious organization:

- **Ecclesia** – dominant religious organization that includes most members of society, is recognized as the national or official religion, and tolerates no other religions (like **Iran, where Islam is the official state religion**)
- **Church** – a type of religious organization that is well-integrated into the larger society. Membership tends to occur by birth, but most churches allow people to join. If independent of the state, is known as a denomination
- **Sect** – a religious organization that is distinct from that of a larger society, often occurring by breaking away from larger religious institutions (**Mormons, Amish**)
- **Cult / New religious movement** – religious organization that is far outside society's norms and often involves a very different lifestyle (**Branch Davidians, Heaven's Gate**)

Five major world Religions:

- **Christianity** – largest faith in the world, about 30% of the population across the globe, 80% of people in the US
- **Islam** – second largest religions in the world, 20-25% of world population, often do not separate church and state
- **Hinduism** – developed in India, polytheistic, 14% of world population, belief in reincarnations
- **Buddhism** – based on teachings of Siddhartha, believe in overcoming cravings for physical or material pleasures primarily through meditative practices
- **Sikhism** – monotheistic religion, believes in one god and the teachings of the ten Gurus
- **Judaism** – formed the historical basis for Christianity and Islam; believe that God formed a covenant with Abraham and Sarah, and that if certain rules were followed (Ten Commandments), God would bring paradise to earth
- Religion and social change (e.g., modernization, secularization, fundamentalism)

Modernization – the transformation from traditional social structures to more rational or economics-driven ones

Classic sociologists predicted that as societies became more modern, there would be a decline in religious practice in favor of more rational thought

- **Secularization** – process through which religion loses its social significance in modern societies

Fundamentalism – **second response** to modernist societies in which there is strong attachment to traditional religious beliefs and practices

- argue that religions should be an integral part of social life
- Ex: Westboro Baptist Church

Government and economy

- Power and authority

Forms of Authority

- **Rational-Legal Authority** – legal rules and regulations are stipulated in a document like the Constitution
- **Traditional Authority** – power due to custom, tradition, or accepted practice
- **Charismatic Authority** – leaders are powerful due to their charisma
- Comparative economic and political systems

Forms of Government:

Aristarchic governments – controlled by a small group of people, selected based on specific qualifications, with decision-making power

- **Aristocracies** – ruled by elite citizens, like those with noble births
- **Meritocracies** – ruled by the meritorious

Autocratic governments – controlled by a single person, or a selective small group, with *absolute* decision-making power

- **Dictatorship** – ruled by a single person
- **Fascist** – ruled by a small group of leaders

Monarchic governments – controlled by a single person, or a selective small group who **inherited** their leadership role, like kings and queens

How leadership is elected:

Authoritarian governments – consists of unelected leaders; public has **no control over representation**

- **Totalitarianism** – unelected leaders regulate **both public and private** life through **coercive** means of control

Democratic governments – consists of elected leaders

- **Direct democracies** – governments in which there is direct public participation
- **Representative democracies** – governments in which there is indirect public participation through the election of representatives
- **political parties** – formal groups of people that share the same principle political beliefs and organize with a common purpose of ensuring governance that supports these principle through appropriate policies

Oligarchic governments – leaders can be elected or unelected; controlled by a small group of people with shared interests

- people have little influence in directing decisions and social change
- Ex: **Theocracies** – governments ruled by **a religious elite**

Structure of Governments

Republican governments – consider their countries to be public concerns, are **democratic** in nature

Federalist governments – include a governing representative head that shares power with constituent groups

- There is the **division** between the **central** government, or the federal government, and the **constituent** governments, or the state, provincial, and local governments

Parliamentary governments – include both executive and legislative branches that are interconnected; members of the executive branch are accountable to members of the legislature

Presidential governments – also include organizing branches, as well as a head of state

Other political concepts:

Anarchy – refers to societies without a public government

Economics – concerned with the production, distribution, and consumption of resources, **both goods and services**

- **Command economies** (planned economies) – economic decisions are based on a **plan of production** and the means of production are often public
 - include **socialism** and **communism**
- **Market economies** – economic decisions are based on the market (supply and demand) and the means of production are often private
 - include **laissez-faire** and **free market economies**
- **Mixed economies** – blend elements of command and market economies with both public and private ownership
 - **public oversight of private production, like in the US**
- **Traditional economies** – consider social customs in economic decisions
 - common in rural areas and often involves **bartering** and **trading**

Capitalism – economic system in which resources and production are mainly **privately owned**, and goods/services are produced for a **profit**. Driving force is the pursuit of personal profit

Socialism – economic system where resources and production are collectively owned; includes a system of production and distribution designed to satisfy human needs (goods/services are produced for direct use instead of for profit). Driving force is collective goals, and economy is usually centrally controlled and run by the government

- **Communism** – specific socialist structure in which there is common ownership of the means of production, but also the **absence of currencies, classes, and states**, based on shared economic, political, and social ideologies

Most nations incorporate both capitalist and socialist ideas

Welfare capitalism – system in which most of the economy is private with the exception of extensive social welfare programs to serve certain needs within society. **Most countries in Western Europe demonstrate welfare capitalism because most of their economies are based on capitalist principles, but universal health care is provided by the state**

State capitalism – system in which companies are privately run, but work closely with the government in forming laws and regulations. For example, **in the US< most businesses are privately owned, but the government runs many operations, such as schools, the postal service, and the military**

Professions – highly esteemed white-collar occupations that require a great deal of education.

- **Division of labor**

Division of labor – occurs as societies become so complex that it is not possible for an individual to meet all of his or her needs alone; different occupations emerge as a response

Two forms of solidarity in relation to economic approaches

- **Mechanical solidarity** – allows society to remain integrated because individuals have common beliefs that lead to each person having the **same fundamental experience**

- individuals share a **collective conscience**, which presumes the existence of a greater social order that guides individual actions through shared beliefs, morals, and values
- common in **primitive, traditional societies**, like agricultural societies
- **Organic solidarity** – allows society to integrate through a division of labor, which leads to each person **having a different personal experience**; thus, each movement is distinguishable and separate
 - arises out of the need of individuals for one another's services
 - common in advanced, modern societies

Health and medicine

- **Medicalization**

Medical model of disease – emphasizes **physical or medical factors** as being the cause of all illness

Medicalization – process by which a **condition comes to be reconceptualized as a disease with a medical diagnosis** and a medical treatment

- Looks for the ultimate cause of a person's illness (bacterium)

Social model of disease – emphasizes the effect one's social class, employment status, neighborhood, exposure to environmental toxins, diet, and many other factors can have on a person's health

While someone working from the perspective of the medical model might look for the ultimate cause of a person's illness (bacterium), someone working from the social model would be attuned to a more proximate cause—something about the patient's life circumstances that put him at greater risk of exposure to the bacterium

- **The sick role**

Sick role – concept developed by sociologist Talcott Parsons; when a person is ill, he is not able to be a contributing member of society. *Being ill is a type of deviance*. Others must consider the person's illness to be legitimate to take up the extra work. The sick person should seek medical care and make an attempt to get well.

- implies a passive patient and an authoritative physician
- **Delivery of health care**

Delivery of health care in the US is accomplished by teams of health-care providers with different training backgrounds and specialty areas, such as physicians and nurses of all specialties, hospitalists, social workers, etc.

- **Primary care** – describes care provider responsible for ongoing preventative care or disease management
- **Secondary care** – includes acute care (emergency department), as well as specialty care, which is often received following a referral from a primary care provider
- **Tertiary care** – very specialized form of health care, based on consultations with specialist care providers and often occurs in facilities designed just for the purpose of caring for patients with a limited set of conditions
 - Ex: cancer hospitals, burn centers, and end-of-life care facilities
- **Illness experience**
- **illness experience** – takes the patient's subjective experience of illness as its main concern; encompasses both the individual's understanding of his or her condition as well as the material impact being ill has on that person's daily life
- **Social epidemiology**

Social model of disease – emphasizes the effect of one's social class, employment status, neighborhood, exposure to environmental toxins, diet, and many other factors

- looking for a more proximate cause (something about patient's life causes that puts him/her at greater risk of exposure to bacterium)

Social epidemiology – field that studies how social organization contributes to the prevalence, incidence, and distribution of disease across and within populations

Food desert – area where healthy, fresh food is difficult to find because there are no proper grocery stores

On a macroscopic level, first-world countries have a greater focus on treating chronic conditions, while lower-income nations focus more on treating acute conditions

Culture (PSY, SOC)

Culture refers to a shared way of life, including the beliefs and practices that a social group shares

Elements of culture (e.g., beliefs, language, rituals, symbols, values)

Language – symbolic system that is codified for communications

Sapir-Whorf hypothesis – asserts that people understand their world through language and that language in turn shapes how we experience our world

High culture – often limited to the consumption of the elite, like ballet or opera

Cultural icons – signs that represent their meaning in a given culture (single crystal glove is representative of MJ)

Cultural universals – patterns or traits that are common to **all people (food and shelter, birth, death, illness)**

Values – culture's standard for evaluating what is good or bad

Beliefs – convictions or principles that people hold

Norms – visible and invisible **rules** of social conduct within a society

Material vs. symbolic culture (SOC)

Symbolic culture consists of symbols that are recognized by people of the same culture; include rituals, gestures, signs, and words that help people within a society communicate and understand each other (wedding ring, statue of liberty, etc)

Material culture – involves physical objects or artifacts (clothing, hairstyles, food, design of homes)

Non-material culture – specific to social thoughts and ideas, such as values

Culture lag (SOC)

Cultural lag – when the creation of new social rules lags behind new innovation (**Material** culture changes faster than symbolic)

Culture shock (SOC)

Culture shock – when disorientation is the result of individual being subjected to alternative cultures or foreign environments

Reverse culture shock – involves same experiences, but upon an individual's return to initial environment

Assimilation (SOC)

Assimilation – process in which an individual forsakes aspects of his or her own cultural tradition to adopt those of a different culture

Common concept that comes up: more assimilated groups will have lower levels of support and worse overall health. Strong social support in local immigrant communities may partly explain the relatively good health of individuals from some immigrant groups in the US (when compared to US born individuals with otherwise similar demographic characteristics. more assimilated groups are likely to have less social support over time

Multiculturalism (SOC)

Multiculturalism (pluralism) – perspective that endorses equal standing for all cultural traditions, promotes idea of cultures coming together in a melting pot, not a hierarchy. Each culture able to maintain its practices

Subcultures and countercultures (SOC)

Subcultures – segment of society that shares a distinct pattern, differs from that of the larger society (bike enthusiasts)

Counterculture - a way of life and set of attitudes opposed to or at variance with the prevailing social norm.

Mass media and popular culture (SOC)

- Mass Media/Technology – television, cell phones, educational programming (can be positive or negative)
- **Popular culture** – describes features of culture that appeal to the masses, often communicated through mass media like TV

Evolution and human culture (PSY, BIO)

Sociocultural evolution – set of theories describing the processes through which societies and culture have progressed over time

Transmission and diffusion (SOC)

Cultural transmission – the process through which this information is spread across generation, or the mechanisms of learning

- meme – element of culture that spreads from person to person; cultural transmission is concerned with how this occurs
- much transmission occurs through socialization processes

Cultural diffusion – transfer of elements of culture from one social group to another; can also occur within a single culture, leading to some similarities across different levels of society

- transmission = vertical = passing culture down from generation to generation
- diffusion = horizontal = spreading culture to other places. Eg: westernization of the world.

Content Category 9B: Demographic characteristics and processes

Demographic Structure of Society (PSY, SOC)

Age

- Aging and the life course
- **Juveniles (0-19), Young Adults (20-39), Middle Adults (40-59), Late Adults (60+)**
- **life course perspective** - is a multidisciplinary approach to understanding the mental, physical and social health of individuals, which incorporates both **life span and life stage** concepts that determine the health trajectory.
- **Dependency ratio** – ratio of the number of economically dependent members of the population
- Age cohorts (SOC)
- **Age cohorts** – example of statistical cohorts in which a group of subjects share the characteristic of age
- **Cohort studies** – longitudinal studies, which conduct research for extended periods of time to better understand the different perspectives of those in the cohort and those in the general population
- **Generational cohorts (generations)** – groups of people born in the same period
- Social significance of aging
- **Population aging** – occurs when there is a disproportionate amount of older people in a population
- **Ageism** – prejudice or discrimination against a person based on age, often against older people
- **Social aging** – reflects the biological changes in a multidimensional process in which individuals experience complex emotional and social changes

- **Rites of Passages** – rituals that reflect important life transitions and also include more personal changes such as marriage
- Social significance of aging: elderly = needs social security and medicare = taken care of by young workforce. Baby boomers = large aging population.
 - increased fertility rate after WWII lasted from 1945-1965

Gender

- Sex versus gender
- **Sex** – biological characteristic that is assigned at birth and permanent; based on chromosomes, external genitalia, gonads, and hormones
- **Gender** – social construction that is learned and flexible, based on behavioral role expectation; categories are masculine and feminine
- The social construction of gender (SOC)
 - **Gender roles** – describe the social and behavioral expectations for men and women
 - **Gender expression** – the external manifestation of these roles
 - **Sexism** – prejudice or discrimination against a person based on gender or sex
 - **Transsexuals** – have gender identities that are inconsistent with their biological sex divisions
- Gender segregation (SOC)
 - **Gender segregation** – social structures contribute to the separation of genders; based on biological distinctions rather than gender identities

Race and ethnicity (SOC)

race = your outward appearance. Ethnicity = the culture you identify with.

- The social construction of race

Race – description of a distinct social group based on certain shared characteristics; often inherited biological traits but can also be cultural, ethnic, and geographical in nature

- Black, White, Asian, American Indian, Native Hawaiian, or Other

Ethnicity – also a description of a distinct social group based on certain shared characteristics; include common ancestral, cultural, geographical, historical, linguistic, or national experiences; share similar appearances

- Han Chinese, Hindustani people, Arabs, Bengalis, and Russian
- Distinct from nationalities

Ethnogenesis – social process that results in the creation of separate ethnicities

Tribes – small sub-ethnic groups, develop into independent ethnic groups

Both Race and ethnicities are social constructs

Racism – prejudices and actions that discriminate based on race, or hold that one race is inferior to another

- Racialization
 - **Racialization, or ethnicization** – social process in which the dominant group ascribes racial or ethnic identities to groups that do not otherwise relate to the labels (ex: **identification of Jews as an ethnic group**)
- Racial formation
 - **Racial formation perspective** – explains **that race is not genetic but constructed** through economic, political, and social forces that have the social control to create categories of race

Immigration status (SOC)

- Patterns of immigration
- Intersections with race and ethnicity

Sexual orientation

Sexual Orientation

Pansexual – attracted to people irrespective of gender or sex

Bisexual – usually a preference for one or the other

Asexuality – involves lack of sexual attraction

Sexual orientation exists along a continuum:

- **Kinsey Scale**, also called the Heterosexual=Homosexual Rating Scale

Heterosexism – prejudice/discrimination against a person based on their sexual orientation toward the same sex

Heteronormative beliefs consider heterosexual behavior to be the preferred sexual orientation, and often enforce strict gender

Demographic Shifts and Social Change (SOC)

Theories of demographic change (i.e., Malthusian theory and demographic transition)

Theories of Population Change

Demographic transition (DT) – transition from overall higher to overall lower birth and death rates as a result of a country's development from pre-industrial to industrial framework due to both economic and social changes

Thomas Robert Malthus – argued that population is the result of available resources for sustenance, such as productive farmland; argued that the possible rate of population increase exceeds the possible rate of resource increase, and the rules of nature make it impossible for population to increase unchecked without serious distress due to insufficient resources

- **Positive checks** – raise the death rate, like disease, disasters, hunger, and wars
- **Preventative checks** – lower the birth rate, like abstinence, birth control, late marriage, same-sex relationship
- **Malthusian Catastrophe** – occurs when the means of sustenance are not enough to support the population, resulting in population reduction through actual or predicted famine
- **Neo-Malthusianism** – movement based on these principles that advocates for population control in order to reduce the negative effects of population strain, such as environmental effects

Population growth and decline (e.g., population projections, population pyramids)

Population – collection of people in a defined geographical area, also refers to this number of people

Population growth rate – rate of population change in a specified time period, reported as percent of initial population

Overpopulation – point at which there are more people than can be sustained

Carrying capacity – total possible population that can be supported with relevant resources

- Populations tend to increase and decrease until **population equilibrium** is met at this maximum load

Population predictions – estimates of future populations made from mathematical extrapolations of previous data

- Population pyramids: bottom heavy = population growth. Top heavy = population decline. Side skew = gender imbalance.

Population pyramids – represent population distributions

- Expansive population pyramid is wide at the base, representing a high birth rate and a high death rate
- x axis is population, y axis is different age groups (cohorts)

Fertility, migration, and mortality

- Fertility and mortality rates (e.g., total, crude, age-specific)
- **Crude birth rate (CBR)** – annual number of births per 1000 people in a population (10-20 is low, 40-50 is high)
- **Crude death rate (CDR)** – annual number of deaths per 1000 persons in a population (below 10 is low, above 20 is high)
- **Rate of population change** – difference between CBR and CDR
- **Age-specific birth rates and age-specific death rates** (also per 1000)
- Patterns in fertility and mortality

Fertility – ability of a woman to reproduce

Fecundity – potential reproductive capacity of a woman

General fertility rate – annual number of births per 1000 women

Total fertility rate – predicts the *total number births per single woman* in a population, with the assumption that the woman experiences the current recorded age-specific fertility rates and reaches the end of her reproductive life

Replacement fertility rate – fertility rate at which the population will remain balanced

Sub-replacement fertility – indicates that the birth rate is less than the death rate, thus the population size will not be sustained

Population-lag effect – refers to the fact that changes in total fertility rates are often not reflected in the birth rate for several generations

- **population momentum** – children produced during periods of higher fertility rates reproduce; there are more women of reproductive age and thus more births overall, regardless of the number of births per women

Mortality – refers to the death rate in a population, includes both general and specific measures

Morbidity – refers to the **nature and extent of a disease in a population**

Prevalence rate – measures the **number of individuals experiencing a disease**

Incidence rate – measures the **number of new cases of a disease**

Case fatality rate – measures **deaths as a result of a set diagnosis** or procedure, sometimes specific to the beginning or late stages

Infant mortality rate – annual number of deaths per 1000 infants under one year of age

Life expectancy – number of years an individual at a given age can expect to live at present mortality rates

Developed regions tend to have lower birth rates and death rates

- **Push and pull factors in migration**

Migration – geographic movement of individuals, families, or other small/large groups of people; implies the intention of permanent relocation

Nomadism – traditional method of continuous travel in search of natural resources as a method of sustenance (hunting and gathering), not considered migration

External migration – involves migration to another nation

Internal migration – involves migration to another region of the same nation

Voluntary migration – result of internal factors (a personal decision)

Involuntary migration – forced migration, the result of external factors that pose a threat to the individual in their initial environments and are often a form of social control, such as ethnic cleansing

Settlers – those who migrate to unsettled areas

Refugees – those who migrate to settled areas as a result of displacement

Colonization – involves migration to settled areas in which dominance is exerted over the foreign state; often exploitation of the indigenous peoples with the use of harsh tactics

Immigration – involves entering a new area, and these people are called immigrants

Emigration – involves leaving an old area, and these people are called emigrants

Reverse migration – return migration, the return of individuals to their former homes

Everett Lee – differentiated in between push and pull factors in migration

- **Push factors** – those things that are unattractive about an area and push people to leave
 - genocide – mass execution with the intention of eliminating a specific social group
- **Pull factors** – those things that are attractive about an area and “pull” people there

Social movements

- **Relative deprivation**
- **Relative deprivation** – refers to the conscious experience of individuals or groups that do not have the resources needed for the social experiences and services that are seen as appropriate to their social position
- **Organization of social movements**
- **Social movement** – collective behavior with intention of promoting change
 - **active** – attempt to foster social change (revolutions)
 - **expressive** – attempt to foster individual change (support groups)
- Proactive = promote change
- Reactive = resist change
- Organizations = facilitate social movements = NAACP, PETA, etc
-
- **Movement strategies and tactics**
- advertising, protests, formation of organizations, etc

Globalization

Globalization – process of increasing interdependence of societies and connections between people across the world

- **Factors contributing to globalization** (e.g., communication technology, economic interdependence)
- **Telecommunications** – use modern technologies to ease the challenges of communication across distances
- **Economic interdependence** – can be thought of as the division of labor on a global scale; countries might have the demand for products without the internal means of production
- **Outsourcing** – involves the contracting of third parties for specific operations; can be domestic or foreign
- **Non-governmental organizations (NGOs)** – those organizations without an official government affiliation with the intention of contributing to the lessening of global issues
- **Perspectives on globalization**
- proponents: economic growth and development
- criticisms: colonialism, inequality, cultural assimilation
-
- **Social changes in globalization** (e.g., civil unrest, terrorism)
- **Civil unrest** – involve forms of collective behavior in which there is public expression of the group’s concern, often in response to major social problems
- **Terrorism** – involves the use of violence with the intention to create fear in the target communities

Urbanization

- **Industrialization and urban growth**
- Urban Growth, Decline, and Renewal
- **Social geography** – spatial distribution of individuals and social groups
- **Urbanization** – refers to the growth of urban area, as people move from rural to urban areas
- **Industrialization** – process through which societies transform from agrarian to industrial in nature
- **Rural flight** – studies the migration from rural to urban areas
- **Suburbanization and urban decline**
- **Suburbanization** – refers to population growth on the fringes or urban areas, leads to urban decline
- **Suburbs** – residential satellite communities located in the peripheral regions of major urban centers
- **White flight** – historical example of suburbanization that involved the migration of whites from cities to more racially homogenous suburbs
- **Urban sprawl** – migration of people from urban areas to otherwise remote areas
- **Urban blight** – occurs when **less functioning areas of large cities degrade as a** result of urban decline
- **Gentrification and urban renewal**
- **Gentrification** – refers to the **renovation or urban areas in a process of urban renewal**; often specific to the introduction of wealthier residents to the cities who then help to restore the existing infrastructure

- raises rent and property values
- **Urban renewal** – redevelopment of urban areas

Foundational Concept 10: Social Stratification and access to resources influence well-being

Content Category 10A: Social inequality

Spatial Inequality (SOC)

Residential segregation

Residential segregation – an instance of social inequality on the local scale

- food deserts – areas where it is difficult to find affordable healthy food options
 - fewer grocery stores, etc

Neighborhood safety and violence

Environmental justice (location and exposure to health risks)

Environmental justice – equal treatment of all people regardless of race, gender, or other social grouping with regard to prevention and relief from environmental and health hazards

Social Class (SOC)

Aspects of social stratification

social class – system of stratification that groups members of society according to similarities in social standing

- tied to status and power
- socioeconomic status

Privilege – advantages of power and opportunity over those who lack privilege

Prestige – relative value assigned to something within a particular society

- Social class and socioeconomic status

Social stratification – refers to the way that people are categorized in society (by wealth, race, education, wealth, and income)

Caste system – describes a closed stratification where people can do nothing to change the category that they are born into

Class system – considers both social variables and individual initiative; groups together people of similar wealth, income, education, etc.

Meritocracy – uses merit to establish social standing; this is an idealized system—no society solely stratifies based on effort

Socioeconomic status – defined in terms of power, property, and prestige

- Three components: occupation, income, and education

US:

- Upper Class: the top 3% of the population who earn millions to billions in annual income
- Middle Class: the top 40% of the population who earns \$46,000 up to the cut-off for the “upper class”
- Working Class: the 30% of the population who earns between \$19,000 and 45,000
- Lower class: the 27% of the population who earn less than \$18,000
- Class consciousness and false consciousness

Class consciousness – an individual’s active awareness of his/her membership in a social class

- Members of the Bourgeoisie take capitalism for granted instead of seeing it as a historically situated and transient economic system
- The communist revolution is based on promoting class consciousness of the lower class

False Consciousness – failure to recognize the state of class relations under capitalism

- Cultural capital and social capital
- Cultural capital – refers to the **non-financial social assets** that promote social mobility (Education)
- Social Capital – the potential for **social networks** to allow for upward social mobility
- Social reproduction
- Social reproduction – refers to the structures and activities in place in a society that serve to transmit and reinforce social inequality from one generation to the next
- Power, privilege, and prestige
- Power = control over other people
- Privilege = perks
- Prestige = reputation, how much respect people have of you
-
- Intersectionality (e.g., race, gender, age)

Intersectionality – analytical approach that seeks to highlight the ways different identities intersect within individuals and social groups to produce unique social groups

- For example, a **black lesbian** cannot be understood by considering her blackness and then her non-heterosexuality; the unique social position of black lesbian must be considered in its own right
- **Socioeconomic gradient in health**
 - inequalities in healthcare exists. The lower socioeconomic class has worse health than the upper class.
 - Socioeconomic gradient in health = graded relationship between social class and health
- **Global inequalities**
 - Global stratification – compare the wealth, economic stability, and power of various countries
 - Global inequality
 - certain countries hold a majority of the resources
 - access to resources among countries seriously impacts other social factors, such as mortality
 - burden of inequality is placed on certain segments of the population

Patterns of social mobility

Social mobility – refers to the ability to move up or down within the social stratification system

Upward mobility – refers to an increase in social class

Downward mobility – decrease in social class

Intergenerational mobility – occurs when there is an increase or decrease in social class between parents and children within a family

Intragenerational mobility – the differences in social class between different members of the same generation

- Intergenerational and intragenerational mobility
- Vertical and horizontal mobility
 - Horizontal mobility = individual changes social identity but maintains similar level of income
- Meritocracy

Poverty

- Relative and absolute poverty
 - Relative poverty – inability to meet the average standard of living within a society
 - Absolute poverty – inability to meet a bare minimum of basic necessities (clean water, food, safe housing)
- Social exclusion (segregation and isolation)
 - excluding/blocking off someone or a group of people from society's opportunities, rights and resources that other groups have access to.

Health Disparities (SOC) (e.g., class, gender, and race inequalities in health)

Healthcare Disparities (SOC) (e.g., class, gender, and race inequalities in health care)

Health care disparities – include population-specific differences in the presence of disease, health outcomes, and quality of health care across different social groups

Social epidemiology – study of the distribution of health and disease across a population, with the focus on using social concepts to explain patterns of health and illness in a population

RANDOM:

Hawthorne effect – describes changes in research participants as a result of their awareness that they are being observed

Thomas Theorem – if an individual believes something to be real, then it is real in its consequences

General Adaptation Syndrome - **Hans Selye** described three predictable stages the body uses to respond to stressors, called **general adaptation syndrome (GAS)**. The first stage is the **alarm stage**, which provides a burst of energy. In the second stage, known as the **resistance stage**, the body attempts to resist or adapt to the stressor. The last stage is known as the **exhaustion stage** because energy is depleted.

