

INTRODUCTION

DEFINITION OF PSYCHOLOGY

Scientific study of thought and behavior. Psychologists study how the brain creates thoughts, feelings, and actions, and how internal and external environments affect them.

RESEARCH STUDIES

- A. Studies test hypotheses:** testable explanations of observed events
- B. Studies must have reliability and validity**
- 1. Reliability:** study produces consistent results when replicated
 - 2. Validity:** study accurately measures what it claims to measure. There are 3 types of validity:
 - a. Construct:** study measures the effect it is trying to measure
 - b. Internal:** study shows that only the experimental factor caused an effect
 - c. External:** results of study apply to other situations

TYPES OF STUDIES

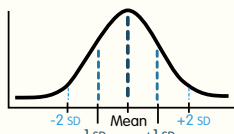
- A. Correlational study:** expresses the relationship between 2 variables; does not imply causation
- B. Experiment:** the manipulation of an independent variable to understand its effect on a dependent variable. Identifies cause-and-effect relationships.
- 1. Sampling:** the process of choosing subjects to study
 - a. Sample:** group of subjects selected for study; a subset of a population
 - b. Population:** group of people about whom the researcher wants to make conclusions. Sample should be representative of the population.
 - 2. Random assignment:** random placement of subjects into experimental or control groups
 - a. Control group:** group not subject to experimental manipulation
 - 3. Variables:** things that can vary among subjects
 - a. Independent variable:** manipulated by researcher; produces a change in dependent variable
 - b. Dependent variable:** measured by the researcher
 - c. Confounding variable:** any possible variable—other than the independent variable—that may cause the observed effect

STATISTICS

Describes data and quantifies relationships between variables

- A. Frequency distribution:** an arrangement of data points based on how frequently they occur
- 1. Normal distribution:** frequency distribution with the shape of a normal curve (a symmetrical bell-shaped curve)
 - 2. Central tendency:** measures of the center of the frequency distribution. There are 3 types.
 - a. Mean:** the arithmetic average of data points
 - b. Median:** the middle data point
 - c. Mode:** the most frequent data point

NORMAL DISTRIBUTION and standard deviation



- 3. Variability:** how the data are dispersed or spread around the mean
 - a. Range:** The distance between the highest and lowest data point
 - b. Standard deviation (SD):** average distance of a data point from the mean:

$$SD = \sqrt{\frac{\sum (\text{score} - \text{mean})^2}{\text{number of scores}}}$$

- Small SD means the scores are relatively close to the mean score
- Large SD means the scores have a wider range around the mean

- B. Statistical significance:** means that the differences observed are too big to have occurred by chance
- 1. Two types of errors in significance testing**
 - a. Type I error:** false positive; perceive an effect that is not there
 - b. Type II error:** false negative; do not perceive an effect that is there

NEUROPSYCHOLOGY

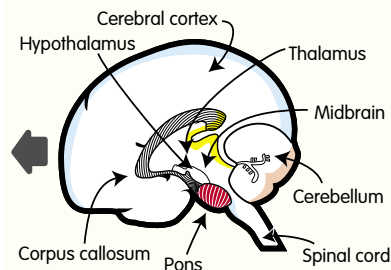
THE NERVOUS SYSTEM

Receives and transmits information

- A. Central Nervous System (CNS):** brain and spinal cord. Brain is split into right and left hemispheres. Brain exhibits **contralateral** control (each hemisphere controls opposite side of body), and **lateralization** (left and right hemispheres have different functions). The three major parts of the brain are the **hindbrain**, **midbrain**, and **forebrain**.

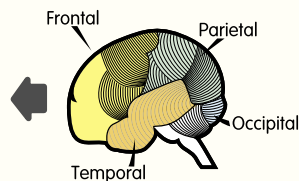
- 1. Hindbrain:** top part of the spinal cord; includes medulla, pons, and cerebellum
 - a. Medulla:** basic biological functions like breathing, swallowing, and balance
 - b. Pons:** facial expressions, sleep, and dreaming
 - c. Cerebellum:** fine motor movements
- 2. Midbrain:** coordinates basic movements with sensory information

THE INTERIOR OF THE BRAIN



- 3. Forebrain:** large in humans. Includes the cerebral cortex and subcortical structures, such as the thalamus, hypothalamus, and basal ganglia
 - a. Basal ganglia:** regulates muscle contractions and movements
 - b. Thalamus:** incorporates and relays sensory information to the cortex
 - c. Hypothalamus:** controls motivated behavior like eating, drinking, and sex
 - d. Hippocampus:** helps process and receive long-term and spatial memory
 - e. Amygdala:** emotion, evaluation of stimuli
 - f. Cerebral cortex:** receives sensory information and transmits motor information. **Corpus callosum:** nerve tract beneath cortex that connects the two hemispheres and allows them to communicate. Cerebral cortex consists of four lobes.
 - Occipital lobe:** processes vision
 - Temporal lobe:** processes sound
 - Parietal lobe:** integrates sensory systems and is involved in attention
 - Frontal lobe:** speech, learning, thinking, decision-making, and abstract thought

THE SURFACE OF THE BRAIN and the cerebral lobes



- B. Peripheral Nervous System:** Includes all nerves that spread through the body from the brain and spinal cord. Has 2 divisions.
- 1. Somatic division:** controls voluntary muscle movements and sense organs
 - 2. Autonomic division:** controls involuntary actions and the internal organs

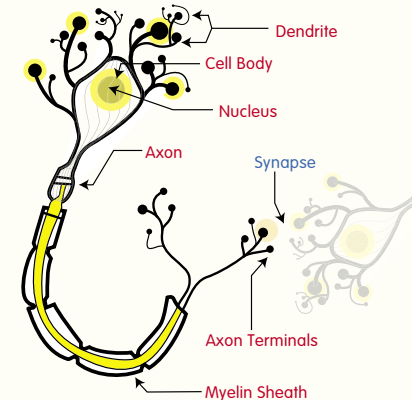
NEURONS

Neurons or nerve cells are the basic unit of the nervous system. Has 3 main parts.

- A. Soma:** cell body, stores energy for cell
- B. Dendrite:** receives messages from other neurons and conducts the messages toward the soma
- C. Axon:** sends messages to other neurons

- 1. Terminal branches (axon terminals):** end of axon that contains neurotransmitters
- 2. Myelin sheath:** insulates axons so that signals can travel quickly
 - a. Glial cell:** creates myelin, supports and guides neurons, and helps repair neurons

THE NEURON and synapse



INFORMATION EXCHANGE

Neurons communicate by receiving and transmitting nerve impulses

- A. The axon terminals of the presynaptic neuron are stimulated.** The terminals contain **synaptic vesicles**, which empty **neurotransmitters** into the **synapse** between the neurons. Neurotransmitters activate the postsynaptic neuron, changing its voltage. Once the **excitation threshold** is reached, the **action potential** begins, and a neuron fires.
- 1. Synapse:** small gap between neurons where information is exchanged
 - 2. Synaptic vesicles:** places where neurotransmitters are stored until release into the synapse
 - 3. Neurotransmitters:** chemicals that stimulate neurons so they can communicate
 - a. Excitatory:** makes neurons **more** likely to fire
 - b. Inhibitory:** makes neurons **less** likely to fire
 - 4. Excitation threshold:** the voltage difference necessary (-55 millivolts) to destabilize a neuron, causing an action potential to occur
 - 5. Action potential (nerve impulse):** the brief change in electrical charge that destabilizes a neuron. The action potential stimulates the axon terminals, restarting the process.

SENSATION

PARTS OF THE EYE

- A. Cornea:** protective covering where reflected light first enters the eye
- B. Lens:** bends (refracts) light rays. Focuses a flipped, inverted image onto the retina
- C. Retina:** thin structure at back of eye that contains 2 types of receptor cells
- 1. Rods:** cells in the periphery of the retina that respond to black and white. Better in low light, more sensitive to motion, and have less visual acuity than cones
 - 2. Cones:** centered in the **fovea** (middle of the retina). Respond to color, good for daytime vision, more visual acuity
- D. Optic nerve:** carries visual information to the lateral geniculate nucleus of the **thalamus**
- 1. Blind spot:** place where the optic nerve exits the eye. Has no receptor cells, so no vision.

VISION

- A. Light waves:** electromagnetic waves that stimulate receptors in the eye
- 1. Intensity:** amount of energy per unit of time (brightness)
 - 2. Wavelength:** distance between two wave crests (color)
- B. 2 theories of color vision**
- 1. Trichromatic theory (Young-Helmholtz):** 3 types of cones detect 3 wavelengths of light (**blue, green, red**). Theory does not explain negative afterimages.
 - a. Negative afterimage:** if you stare at one color, then look at white space, you see a color afterimage in the complementary hue of the original stimulus
 - 2. Opponent-process theory (Hering):** receptor cells arranged in pairs, **red/green, blue/yellow, black/white**. If one color is stimulated, the other is inhibited.

PARTS OF THE EAR

- A. **Outer ear (pinna):** collects sound from air and directs it through the ear canal
- B. **Tympanic membrane (eardrum):** membrane that vibrates when sound hits it
- C. **Oval window:** membrane that separates middle ear from inner ear; sends vibrations to the cochlea
- D. **Cochlea:** fluid-filled membrane in the inner ear; its pressure changes stimulate hair cells
- E. **Hair cells:** auditory receptor cells that initiate nerve impulses

AUDITION: SENSE OF HEARING

- A. **Sound wave:** vibrations (changes in air pressure) that stimulate auditory receptors
 1. **Amplitude:** height of wave (loudness). Pressure exerted by each air particle.
 2. **Frequency:** length of wave (pitch). Time between 2 points of maximum pressure.
 - a. **Place Theory:** hair cells respond to different frequencies of sound based on their location in the cochlea
 - b. **Frequency Theory:** hair cells fire at different rates (frequencies) in the cochlea, allowing us to sense pitch

CHEMICAL SENSES

- A. **Smell (olfaction):** information gathered from chemicals in the air. Inhaled molecules excite receptors in the **olfactory epithelium**. **Olfactory bulb** gathers messages from the **olfactory receptor cells** and sends them to the brain.
- B. **Taste:** sensory receptors in taste buds of tongue sensitive to salty, sour, bitter, and sweet

MECHANICAL SENSES

- A. **Skin senses:** information from the skin, including pressure, pain, warmth, and cold
- B. **Vestibular senses:** receptors in semicircular canal of inner ear sense how our body is oriented, maintains balance, and locates our head in space
- C. **Kinesthetic sense:** receptors in muscles, tendons, joints give information about our limbs

PERCEPTION

Understanding and interpreting sensations from a stimulus

MEASURING PERCEPTION

- A. **Absolute threshold:** the least amount of stimulus that is observable
- B. **Difference threshold:** the smallest amount a stimulus must change so that an observer can perceive a **just noticeable difference (jnd)**
- C. **Weber's Law:** size of the difference threshold is proportional to the stimulus's intensity

PERCEPTUAL CUES

- A. **Perceptual constancy:** we see qualities of an object as constant (size, shape, brightness)
- B. **Visual depth perception:** the perception of cues that indicate the distance of an object
 1. **Monocular cues:** cues that do not use 2 eyes
 - a. **Interposition:** things in front are closer
 - b. **Size:** larger things are closer
 - c. **Linear perspective:** objects produce smaller retinal image as they are farther away
 - d. **Texture gradients:** details of texture if the surface is closer
 2. **Binocular cues:** cues that use 2 eyes
 - a. **Binocular or retinal disparity:** the difference between two eyes' views. There is less disparity between the eyes the farther the object is from the observer.
 3. **Motion cues**
 - a. **Motion parallax:** as you move your head, images of close things change position more quickly on the retina than images of distant ones
- C. **Gestalt rules:** laws used by the brain to group or organize elements of a scene
 1. **Proximity:** things near each other belong together
 2. **Similarity:** things that resemble each other belong together
 3. **Continuity:** things that form a continuous line belong together
 4. **Closure:** things that make up something we recognize belong together
 5. **Common fate:** things moving in the same direction belong together

TYPES OF PROCESSING

How we recognize and organize stimuli

- A. **Bottom-up (feature analysis):** starts with the smaller, specific elements of a scene and uses them to create the larger units or context
- B. **Top-down:** starts with a larger context or units to recognize smaller, specific elements of the scene; uses **schemata** (mental representations of our expectations of the world)

ATTENTION

Process of perceiving some information and not other information

- A. **Cocktail party effect:** people suddenly switch attention if name is said
- B. **Stroop effect:** automatic processes can interfere with other tasks; hard to name the color of a word colored differently because reading process is more automatic (**GREEN/RED**)

LEARNING

Changes in behavior due to experience

2 TYPES OF SIMPLE LEARNING

- A. **Habituation:** tendency to respond to stimuli that become familiar
- B. **Classical conditioning (Pavlov):** creation of involuntary responses to stimuli
 1. **Elements of classical conditioning**
 - a. **Unconditioned stimulus (UCS):** from the environment; triggers natural response
 - b. **Unconditioned response (UCR):** natural reaction to UCS
 - c. **Conditioned stimulus (CS):** paired with UCS. Before pairing, the CS does not produce a response; after pairing it does
 - d. **Conditioned response (CR):** a response to a CS. CR looks the same as a UCR, but is a response to a different stimulus
 2. **Pavlov's experiment**
 - CS (bell) → no response
 - UCS (food) → UCR (salivation to food)
 - UCS (food) + CS (bell) → UCR (salivation to food)
 - CS (bell) → CR (salivation to bell)
 3. **Principles of classical conditioning**
 - a. **Extinction:** when the CS appears without UCS, the CR eventually disappears
 - b. **Spontaneous recovery:** after extinction, the CS reappears and elicits CR
 - c. **Generalization:** CR occurs to stimuli that are similar to CS
 - d. **Discrimination:** CR only occurs to CS and not unreinforced stimuli

- UCS (food) + CS (bell) → UCR (salivation to food)
- CS (bell) → CR (salivation to bell)

OPERANT/INSTRUMENTAL CONDITIONING (SKINNER)

- A. **Operant conditioning:** learning based on the association of consequences to one's behavior. **Reinforcer** only given if there is an **operant** response.
 1. **Operant:** an instrumental response (a rat pressing a lever)
 2. **Reinforcer (reward):** something that ↑ likelihood of a behavior (food). 2 types.
 - a. **Positive reinforcement:** if desired behavior occurs, then add something pleasant
 - b. **Negative reinforcement:** if desired behavior occurs, then take away something unpleasant
 3. **Punisher:** something that ↓ the likelihood of a behavior (shock)
 - a. **Learned helplessness:** occurs when one believes that unpleasant or painful stimuli are inevitable and gives up trying to change the circumstances
- B. **Principles of operant conditioning**
 1. **Shaping:** reinforcing successive steps to reach a desired behavior
 2. **Chaining:** reinforcing a series of behaviors to get a reward
 3. **Extinction:** occurs if behavioral response is no longer reinforced
- C. **Schedules of reinforcement:** pattern of reinforcing behavioral responses. 2 main types.
 1. **Continuous reinforcement:** reinforcement after every correct response
 2. **Partial reinforcement:** reinforcement after some correct responses. 4 main types.
 - a. **Fixed:** reinforcement is given a fixed amount of time after a correct response (response starts low, ↑ rapidly)
 - b. **Variable:** reinforcement is given an average amount of time after a correct response (low rates of response)
 - c. **Fixed-ratio schedules:** reinforcement is given after a fixed number of correct responses (high rates of response)
 - d. **Variable-ratio schedules:** reinforcement is given after an average number of correct responses (very high rates of response)

MEMORY

MEMORY

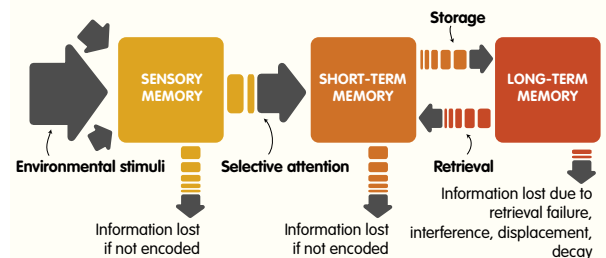
The way we record events, information, and skills

- A. **Encoding:** acquiring information from the world and storing it in memory
 1. **Levels of processing** (Craik and Lockhart): 2 types of encoding strategies
 - a. **Shallow:** encoding for surface features (less successful)
 - b. **Deep:** encoding for structural relationships and meaning (more successful)
- B. **Storage:** holding on to information for later use
- C. **Retrieval:** getting information back when it is needed. 2 ways to retrieve information
 1. **Recall:** supplying information in response to a cue or question
 2. **Recognition:** deciding whether information was encountered before

3 MEMORY SYSTEMS

- A. **Sensory memory:** where information first enters memory system. Large capacity, short duration (split secs); some of it is encoded or stored in the STM.
- B. **Short-term memory (STM) or working memory:** where we use and are aware of memories
 1. Small capacity (7 plus or minus 2 items)
 - a. **Chunking:** ↑ capacity of STM by recoding information into larger, meaningful units
 2. Short duration (30 seconds)
 - a. **Rehearsal:** ↑ duration of STM through repetition of information
- C. **Long-term memory (LTM):** relatively permanent store of information, unlimited capacity, and long duration. One can transfer memories from STM to LTM by **rehearsal**.
 1. **Implicit:** memory for skills and motor patterns
 2. **Explicit:** memory for facts, events, and meanings
 3. **Semantic:** memory for general meanings and information
 4. **Episodic:** memory of specific events
 5. **Autobiographical:** memory for events with meaning for the self

THE MEMORY MODEL: the way we process and retrieve information



FORGETTING

- A. **Decay:** memory becomes eroded because we have not used it for a while
- B. **Displacement:** items are pushed out of memory by other items
- C. **Recall task findings**
 1. **Primacy effect:** ↑ likelihood to remember earlier rather than later information (due to rehearsal)

CONTINUED ON OTHER SIDE

2. **Recency effect:** ↑ likelihood to remember last information (because it is still in STM)
- D. Interference in LTM**
1. **Proactive interference:** early learning disrupts later learning
 2. **Retrospective interference:** later learning displaces earlier learning
- E. Types of amnesia**
1. **Anterograde amnesia:** person cannot form new memories after brain injury (patient H.M.)
 2. **Retrospective amnesia:** person cannot remember events prior to brain injury

LANGUAGE, THINKING, AND INTELLIGENCE

LANGUAGE

System of symbols used to represent and communicate information

A. Elements of all language

1. **Phoneme:** smallest unit of sound in language
 2. **Morpheme:** smallest sound unit that carries meaning
 3. **Syntax:** how words are arranged into phrases and sentences; 2 types of structure
 - a. **Surface structure:** how words are organized
 - b. **Underlying structure:** meaning of sentences
- B. Language acquisition:** learning occurs in stages
1. Babies innately practice with phonemes (babbling)
 2. **Telegraphic speech:** using short phrases to form primitive sentences
- C. Language disorders: aphasias** (an absence of some part of the ability to use language)
1. **Broca's aphasia:** inability to produce fluent speech
 2. **Wernicke's aphasia:** inability to comprehend speech

THINKING

Mental activities used to reason or reflect

A. Two types of thinking

1. **Directed:** includes thought processes like reasoning, decision-making, and problem solving
 2. **Autistic:** includes fantasizing and daydreaming
- B. Mental representations:** representations of knowledge and thought
1. **Analogical:** representation has some of the qualities of what it represents
 2. **Symbolic:** representation has none of the qualities of what it represents
- C. Visual (mental) imagery:** representations of sensory experience that occurs in the brain, without the presence of sensory input
- D. Concept formation:** mentally classifying objects and events based on common features
1. **Concept:** class or category with individuals or subtypes (birds)
 2. **Prototype:** best example of a concept (sparrow)
- E. Problem solving:** using a set of information to achieve a goal. 2 main strategies.
1. **Algorithm:** systematic step-by-step method of trying every possible solution
 2. **Heuristic:** using a rule of thumb that worked in the past. Does not guarantee a solution.
 - a. **Availability heuristic:** judging a situation based on the frequency with which similar situations come to mind
 - b. **Representativeness heuristic:** judging a situation based on how similar it is to a prototypical situation, regardless of how common the situation is
- F. Decision-making:** the process of choosing between options
1. **Framing:** the way a problem is posed affects the perception of how it is best solved
- G. Reasoning:** determining the conclusions that can be drawn from examples or assertions
1. **Inductive reasoning:** constructing conclusions from particular examples
 2. **Deductive reasoning:** deciding whether a conclusion can be drawn from the premises or facts

INTELLIGENCE

A. Theories of intelligence

1. **Spearman:** 1 basic factor in intelligence, called **g factor**. Performance based on g and ability specific to a skill (writing test score depends on g and verbal skill)
2. **Sternberg:** 3 types of intelligence: analytic, practical, and experiential
3. **Gardner:** 7 types of intelligence: linguistic, logical, musical, spatial, kinesthetic, interpersonal, and intrapersonal

B. Ways of measuring intelligence

1. **Intelligence Quotient (IQ) test:** calculates the distance between a person's mental and chronological age.
$$IQ = \frac{100 \times \text{Mental Age}}{\text{Chronological Age}}$$
 - a. Normal: 90–110; mental retardation: 70 and under
2. **Stanford-Binet Scale:** tests verbal, abstract/visual, and quantitative reasoning, and short-term memory
3. **Wechsler Adult Scale:** test of general knowledge, verbal, mathematical, spatial skills

DEVELOPMENT

How humans grow and change over time

2 DEVELOPMENTAL PROCESSES

- A. Learning (nurture):** environmental influence on the growth process
- B. Maturation (nature):** genetic/biological influence on the growth process

PHYSICAL DEVELOPMENT

- A. Infant stage:** babies born with reflexes (automatic behaviors, e.g., rooting, sucking, grasping, startle)
- B. Adolescence:** more myelination of the frontal lobes may allow for greater self-control
- C. Aging:** older adults often experience a decline in short-term memory and attention

SOCIAL DEVELOPMENT

Growth in how one relates to others

- A. Attachment:** emotional connection or relationship between caretaker and baby
1. **Harlow's monkey studies:** showed that fear of unknown produces attachment
 - a. Monkeys preferred soft, cuddly surrogate mothers even if they did not have food
 - b. Monkeys raised without mothers were socially incompetent, aggressive, and unable to raise their own babies
 2. **3 styles of attachment (Ainsworth)**
 - a. **Secure attachment:** warm relationship exists between baby and mother; infant is not afraid of abandonment
 - b. **Resistant attachment:** close relationship exists between baby and mother, but baby is afraid of abandonment.
 - c. **Avoidant attachment:** distant relationship between baby and mother, and child seems indifferent to whether mother is present
- B. Socialization:** process by which one acquires the patterns of behavior of one's society
1. **Types of parenting styles:** parents are one means of socialization. 3 categories of styles.
 - a. **Autocratic:** parents are strict and rigid, and require obedience and conformity to rules
 - b. **Authoritative-reciprocal (most effective):** parents firm but fair. Make and enforce rules, but allow questions and encourage reasonable independence
 - c. **Permissive:** parents do not make many rules or enforce the ones they make
- C. Erickson's 8 stages of psychosocial development:** theory that a series of conflicts must be resolved throughout the course of development to attain a healthy personality
1. Trust vs. Mistrust (*birth–18 months*)
 2. Autonomy vs. Shame and Doubt (*18 months–3 years*)
 3. Initiative vs. Guilt (*3–6*)
 4. Competence vs. Inferiority (*6–12*)
 5. Identity vs. Role Confusion (*12–18*)
 6. Intimacy vs. Isolation (*19–40*)
 7. Productivity vs. Stagnation (*40–65*)
 8. Ego Integrity vs. Despair (*65–death*)
- D. Psychosexual development:** differentiation into gender role or sexual identity
1. **Gender role:** behavioral patterns considered appropriate for men and women
 2. **Freudian theory:** 4 stages (oral stage, anal stage, phallic stage, genital stage)

COGNITIVE DEVELOPMENT

Intellectual growth from infancy to adulthood

- A. Piaget's theory:** children construct **schemas** (mental patterns) that tell them how things relate to each other and what they should expect to experience in the world
1. **2 processes** responsible for all development
 - a. **Assimilation:** adding new items to schemas
 - b. **Accommodation:** changing schemas in response to new information
 2. **Piaget's stages of development**
 - a. **Sensory-motor intelligence (*birth–2*):** creation of **object permanence** (the understanding that objects exist independent of our own senses or interactions)
 - b. **Preoperational period (*age 2–7*):** symbolic representation, use of language; learn **conservation** (value is constant even if the appearance or arrangement changes)
 - c. **Concrete operations (*age 7–11*):** logical thinking about concrete objects; learn empathy; learn a new, complex set of schemas of ideas called **operations**
 - d. **Formal operations (*11–adult*):** abstract reasoning and hypothesis testing

MORAL DEVELOPMENT

- A. Kohlberg's stages of moral development:** what drives moral reasoning and behavior
1. **Preconventional:** avoiding punishment or desiring gain
 2. **Conventional:** internalizing outside authority; loyalty to social standards
 3. **Postconventional:** weighing alternatives and making personal choices based on universal standards of justice and human rights, not only laws or customs

MOTIVATION, EMOTION, AND STRESS

MOTIVATION

Process of acting to satisfy a goal

A. Biological reasons for motivation

1. **Homeostasis:** maintaining internal equilibrium
2. **Physiological drives** for proper temperature, water, food, sex, and to avoid pain

B. Social reasons for motivation

1. **Intrinsic:** take action because the act itself is rewarding
 2. **Extrinsic:** take action because the act is rewarded by outside factors
- C. Motivation theories**
1. **Drive-reduction theory:** motivated by need to reduce a negative bodily state
 2. **Opponent-process theory:** motivated to maintain homeostasis and counteract a deviation from normal state
 3. **Maslow's hierarchy of needs:** the order of needs we are motivated to satisfy
 - a. Bodily needs → Safety needs → Belonging/love → Esteem → Self-actualization (top of hierarchy)

EMOTION

Emotion involves physical and cognitive arousal and affects motivation

A. Theories of emotion

1. **James-Lange theory:** experiencing an emotion is a result of perceiving a bodily response to arousing stimuli
2. **Cannon-Bard theory:** we simultaneously feel emotion and a bodily response due to arousing stimuli
3. **Schacter-Singer (attribution-of-arousal) theory:** stimuli trigger a state of physiological arousal, but the emotional experience depends on interaction between the bodily response and cognitive interpretation of the stimulus

STRESS

Physical and psychological response to an event or change

- A. Stress:** refers to events (**stressors**) or how we react to the changes (**stress reactions**)
1. **Stressors** can be positive (wedding) or negative (losing a job)
 2. **General Adaptation Syndrome (Selye):** 3-stage process of stress response (alarm, resistance, exhaustion)
- B. Personality types:** affects how people respond to stress
1. **Type A:** stress triggers hostility, anger, competitiveness. ↑ risk for heart disease.
 2. **Type B:** copes well with stress, easy-going

CONSCIOUSNESS AND SLEEP

CONSCIOUSNESS

The level of awareness of our own existence, thoughts, feelings, and our environment

A. Levels of consciousness

1. **Conscious:** consists of information that is currently the subject of attention
 2. **Preconscious:** information that is not being attended to, but could be attended to later
 3. **Subconscious:** information that we are not aware of, but exists and affects us
 4. **Nonconscious:** body processes controlled by our mind that we do not attend to
 5. **Unconscious:** cognitive activity outside our awareness
- B. Drugs:** alter consciousness by increasing or blocking the effects of neurotransmitters
1. **Agonist:** drug that mimics effects of neurotransmitters
 2. **Antagonist:** drug that blocks neurotransmitters
 3. **Types of drugs:**
 - a. **Stimulants (caffeine, nicotine, amphetamines):** speed up nervous system
 - b. **Depressants (alcohol, barbiturates):** slow down nervous system
 - c. **Opioids (narcotics):** relieve pain and produce euphoria
 - d. **Hallucinogens (LSD, marijuana):** change perceptions of reality

SLEEP-WAKE CYCLE

Sleep is a state of consciousness

- A. Awake:** alpha-rhythm brain waves (resting); beta-rhythm brain waves (active thought)
- B. Slow-wave sleep:** Non-rapid eye movement (NREM) cycle (90 minutes)
- Stage 1:** light sleep, transition from waking
 - Stage 2:** deeper sleep
 - Stage 3:** slow-wave (delta) sleep
 - Stage 4:** deepest type of sleep
- C. REM sleep:** rapid eye movement cycles (10–15 minutes long, throughout sleep). Vivid dreams occur; body is paralyzed; important for memory consolidation and learning.

PERSONALITY

Unique behaviors, attitudes, and emotions that characterize an individual

TRAIT APPROACH

Emphasizes underlying traits

A. Three-factor model (Eysenck): people differ on 3 personality factors

- 1. Extraversion** (Other-focused, outgoing) vs. **Introversion** (Self-focused, quiet, shy)
- 2. Neuroticism vs. Stability**
- 3. Psychoticism vs. Self-control**

B. The five-factor model (Big Five) (Norman): personality described using 5 traits: extroversion, neuroticism, openness, agreeableness, and conscientiousness

BEHAVIORAL-COGNITIVE APPROACH

Emphasizes environment, situations

- A. Behaviorists:** reinforcement of behavior (operant conditioning) determines personality
- B. Social learning:** personality also formed by modeling (the observation of behavior)

PSYCHODYNAMIC APPROACH

A. Freud's theory: personality differences arise from unconscious conflicts and desires

1. 3 subsystems of personality

- a. Id:** most primitive; unconscious, infantile; **pleasure principle** (instant gratification)
 - b. Ego:** rational, logical; upholds the **reality principle** (it functions within reality)
 - c. Superego:** conscience; internalized social rules; punishes ego with guilt
- 2. Anxiety:** unpleasant emotional state. Defense mechanisms protect ego from anxiety.
- a. Repression:** thoughts, impulses, and memories are pushed out of consciousness
 - b. Displacement:** redirection of impulse from one channel into another
 - c. Reaction formation:** a forbidden impulse turns into its opposite
 - d. Rationalization:** unacceptable thoughts are reinterpreted
 - e. Projection:** thoughts and impulses are attributed to another person rather than self

B. Criticisms of Freud: theories not testable, do not predict behavior, not based on wide sample

HUMANISTIC THEORIES

Focus on whether people achieve their potential

A. Maslow: individual strives to fill a hierarchy of needs to attain self-actualization

- 1. Hierarchy of needs:** levels of needs with physiological needs (food, water) at the bottom; esteem and achievement higher up
- 2. Self-actualization:** Top of hierarchy; desire to realize one's fullest potential

B. Rogers: focuses on the importance of the self-concept

- 1. Self-concept:** sense of self as both an agent (I) and object (me)

PERSONALITY ASSESSMENT

A. Self-reported tests

- 1. MMPI (Minnesota Multiphasic Personality Inventory):** questionnaire used to diagnose psychological disorders
 - 2. CPI (California Personality Inventory):** nonclinical test for personality traits
- B. Projective techniques:** individual interprets ambiguous stimuli
- 1. Rorschach:** individuals discuss inkblots or unstructured forms
 - 2. TAT (Thematic Apperception Test):** individuals tell stories about scenes

SOCIAL PSYCHOLOGY

The study of how individuals relate to others

SOCIAL COGNITION

The way we interpret and understand social events

A. Social comparison: individuals judge their thoughts and behaviors by comparing selves to the group. Reduces doubt about one's beliefs (Asch's perceptual judgment task).

B. Attitudes: stable opinions that affect feelings, thoughts, and behaviors about an issue

- 1. Cognitive dissonance:** inconsistency among experiences, beliefs, or feelings. People are motivated to reinterpret experiences, beliefs, feelings so they are consistent

C. Stereotyping: beliefs about people based on their group membership

D. Prejudices: undeserved, negative beliefs about people based on their group membership

E. Attribution: how one explains one's own and others' behavior. 2 main ways.

- 1. Situational:** attribute behavior to environment
- 2. Dispositional:** attribute behavior to something within a person

3. Fundamental attribution error: the tendency to explain behavior as an effect of disposition rather than situation

4. Self-serving bias: attributing one's successes to internal causes and one's failures to external causes; taking credit for successes rather than failures

F. Social role theories: behavior is a function of a person's social role (such as gender or race)

- 1. Role:** social position governed by norms (conventions). A role is more relevant when person is away from the group
- 2. Zimbardo's prison study:** students assigned to guard or prisoner roles and behavior changed to fit the assigned role (guards=abusive, prisoners=passive, scared)

THE SELF

A. Self-concept: one's thoughts about the self

B. Self-esteem: one's judgment about the value and worth of the self

C. Self-consciousness: tendency to pay attention to what the self is doing, thinking, and feeling

D. Self-monitoring: ability to shape one's own behavior to conform to the demands of the group or situation

E. Self-perception theory (Bem): one indirectly infers one's own attitudes and feelings by observing one's own behavior and using attribution processes

ONE-ON-ONE INTERACTIONS

A. Exchange relationships: most human relationships built on give-and-take

B. Love relationships

- 1. Romantic:** passionate, obsessive
- 2. Companionate:** trust, caring, affection

GROUP DYNAMICS

A. Group polarization: tendency of a group to express more extreme views than members would express as individuals

B. Social facilitation effect: tendency for people to perform better when others are watching

C. Bystander effect: diffusion of responsibility when a large group of people is present (Kitty Genovese attack)

D. Conformity: people follow behavior of the group

- 1. Milgram** studied obedience to authority
 - a. Subjects** were assigned as teachers and told to shock learners if they answered incorrectly
 - b. Many subjects** continued to follow instructions even when they believed they were delivering dangerous levels of shock

ABNORMAL PSYCHOLOGY

WHAT IS INSANITY?

A. Five ways to define abnormality

- 1. Condition** considered abnormal in the person's culture
- 2. Condition** causes personal distress to the subject
- 3. Condition** prevents functional living in society
- 4. Condition** makes the person a danger to self or others
- 5. Condition** calls into question a person's legal responsibility for actions

B. Rosenhan sanity study: showed difficulty in diagnosing insanity

- 1. Rosenhan** and associates (all sane) reported hallucinations to gain admittance to psychiatric ward
- 2. Once admitted,** "plants" were treated as insane patients

TYPES OF DISORDERS

Psychological disorders are defined by the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV)

A. Anxiety disorders

- 1. Phobias:** intense, irrational fears of specific items or situations
 - a. Agoraphobia:** fear of open, public spaces
 - b. Social phobia:** fear of embarrassing social situations
- 2. General Anxiety Disorder (GAD):** chronic, pervasive low-level anxiety
- 3. Panic disorder:** intermittent anxiety, characterized by panic attacks
 - a. Panic attacks:** episodes of frightening mental and physical symptoms
- 4. Obsessive Compulsive Disorder (OCD)**
 - a. Obsessions:** uncontrollable, repetitive internal thoughts cause anxiety
 - b. Compulsions:** behaviors performed to counteract obsessive thoughts

B. Mood disorders

- 1. Major depression:** characterized by unhappiness, fatigue, loss of appetite, and low self-esteem
 - 2. Bipolar Disorder (Manic Depression):** periods of depression followed by periods of mania (high energy, inhibition)
 - 3. Seasonal affective disorders:** mood affected by time of year, and/or lack of sunlight
- C. Dissociative disorders:** includes **amnesia** (person loses memory for personal identity); and **identity** (2 or more distinct personalities in one person)

D. Somatoform disorders: disorders that take bodily form (such as hypochondriasis and conversion)

E. Schizophrenia

1. Positive symptoms: hallucinations, disorganized thought and speech, and delusions (false beliefs)

2. Negative symptoms: lack of speech and emotional expression, and social withdrawal

3. Types of schizophrenia

- a. Catatonic:** people are motionless, suddenly frenzied, and hold contorted postures
- b. Disorganized:** people are incoherent and show inappropriate emotional reactions
- c. Paranoid:** people have delusions of persecution and grandeur

TREATMENT OF PSYCHOPATHOLOGY

PSYCHOTHERAPY

5 main psychological therapies

A. Classical psychoanalysis (Freud): helps clients (patients) uncover and resolve repressed, unconscious childhood conflicts; involves 4 main techniques

- 1. Free association:** client says whatever comes to mind; technique uncovers unconscious meanings and preoccupations
- 2. Transference:** client transfers conflicts and emotions onto psychoanalyst; shows client how they feel about important people
- 3. Resistance:** focuses on what client refuses to talk about; helps client recall repressed memories
- 4. Dream analysis:** therapy involves interpreting dream imagery, because unconscious conflicts manifest as symbols in dreams

B. Psychodynamic therapy: modified version of psychoanalysis that explores unconscious conflicts based on cultural or interpersonal factors, not childhood

C. Humanistic therapies: treats the the whole person; involves 2 main techniques

- 1. Person-centered therapy (Rogers):** based on belief in fundamental goodness of humans. Therapist encourages client to achieve self-actualization using 3 main non-directive techniques.
 - a. Unconditional positive regard:** person is valued no matter what
 - b. Authenticity:** therapist is always honest
 - c. Empathy:** therapist must feel what the patient is feeling
- 2. Existential therapy:** tries to imbue meaning in client's life. Helps client take responsibility and exercise free choice. Goal to make client feel life is authentic.

D. Behavior therapies: treatments that involve changing behavior with little or no attention to the causes of the behavior. Effective for phobias; involves 3 main techniques.

- 1. Exposure techniques:** breaks connection between stimuli and the resulting fears
 - a. Extinction:** therapist presents a stimulus without the threatening response, so that the associated fear will eventually disappear
 - b. Systematic desensitization:** therapist teaches client to replace feelings of fear with relaxation; exposes client to hierarchy of stimuli called **anxiety hierarchy**
- 2. Aversion therapy:** pairing a client's habit with an unpleasant stimulus so that client breaks the habit
- 3. Operant conditioning:** the control of behavior through reinforcement; enforces the connection between behavior and consequences. Involves 2 main techniques.
 - a. Token economy:** provides rewards for desired behaviors
 - b. Contingency management:** client learns that behaviors have strict consequences

E. Cognitive therapies: treatments that change the client's thought patterns

- 1. Rational-Emotive therapy (Ellis):** confronts and changes client's irrational beliefs
- 2. Cognitive therapy (Beck):** replaces negative thoughts with positive thoughts

BIOLOGICAL/MEDICAL TREATMENT

3 main medical therapies

A. Drug therapy (Psychopharmacology): drugs can be effective but can also have bad side effects. There are 3 main categories of drugs.

- 1. Antidepressants:** 2 main types of drugs that treat depression
 - a. SSRIs** allow serotonin to stay in synapses, increase activity of serotonin (Prozac)
 - b. MAO-inhibitors** prevent the breakdown of monoamines (serotonin)
- 2. Anxiolytics:** type of drug that treats anxiety
 - a. Benzodiazepines:** tranquilizers (Valium)
- 3. Antipsychotics:** drugs used to treat symptoms of schizophrenia such as delusions and agitation (Clozapine)

B. Electroconvulsive therapy (ECT): treatment for major depression. Doctor uses electric shocks through brain hemisphere(s) to induce seizures. Side effects include muscle aches and memory loss.

C. Surgery: treatment that physically changes the brain (such as prefrontal lobotomy)

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