

Historical Approaches

Structuralism. Study of the brain structure, the mental process and other bio stuff.
Functionalism. Study of functionality over structure.
Behaviorism. Analysis of observable behavior learnt in an environment.

Definition

Psychology. Systematic, scientific study of behaviors and mental processes.
Behaviors. Observable actions or response in living things.
Mental processes. Not directly observable; refers to a wide range of complex mental processes like thinking.

Research Methodology

Survey. Obtain info by asking many individuals to answer a fixed set of questions. Prone to error and bias based on how questions are phrased and who asks them. Easy to collect info leading to a large sample.
Case study. Analyse the thoughts, feelings, expressions of a single person. Bias and memory errors - observations of a person's own experience and belief. Better understand the person's life.
Naturalistic observation. Observing without interfering. Bias interpretation, time-consuming and lack of controlmake it impossible to assign a cause for such behavior. Reduce social desirability since its more natural.
Rule following. Ask to validate hypothesis. Identify treatments, choose samples, assign experimental and control groups, manipulate by using double blind, the individuals in the group, measure the behavior analyse using statistical methods. Can identify cause and effects, helps to eliminate extra variables. Not representative of population, biases and ethical concerns.
Debriefing. Explain purpose and method of experiment, asks participants their feelings about participating and helping participants deal with guilt, doubts that arise from their behaviors.
Concerns. Code of ethics and conduct that needs to be followed. Spells out responsibilities of psychologists and rights or participants.

Explaining Observations

Scientific method. Review literature, formulate hypothesis, design study, collect data, draw conclusions and report findings.

Anxiety

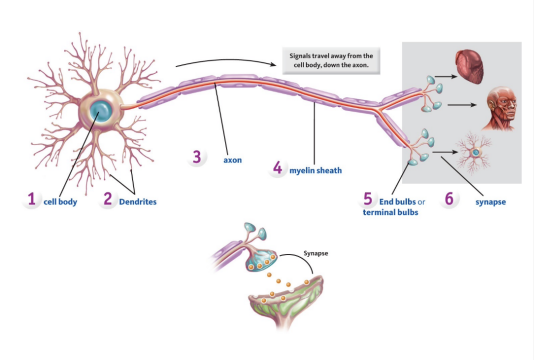
Behavioral Approach. How we learn new/modify behaviors depending on environment to reward or punish.
Biological Approach. Response includes elevated heart rate, dry mouth and sweaty palms.
Cognitive Approach. Understanding functions and structures during performance of cognitive processes.

Autism

Psychoanalytic Approach. How childhood experience affect brain development. Unconscious fears, desires and motivationsa dn the development of traits and psych problems.
Biological Approach. Social problems linked to less activity in mirror neurons, which are the cells associated with human experience of empathy.

Cognitive Approach. How we process, store and use information; what we attend to perceive,learn, remember, believe and feel.

Brain structure



Dendrite. Receives signals from other neurons, sense organs, muscles - pass these signals onto cell body.
Axon. Single thread structure that extends/carries signals away from the cell body to neighboring neurons/organs/muscles.
Myelin sheath. Fatty material insulates axon, prevents interference from electrical signals in adjacent axons.
Terminal bulbs. Stores chemicals call neurotransmitter.
Synapse. Small space between end of bulb and adjacent organ.

Central Nervous System. Neurons located in the brain and spinal cord.
Peripheral Nervous System. Nerves located throughout the body, except in the brain and spinal cord. Axons and dendrites that come from the spinal cord are held together by connective tissue. Carry info from senses, skin, muscles, and body organ to and from spinal cord. **PNS ability to regrow or reattach if damaged.**
Somatic. Responsible for voluntary movement.
Autonomic. Responsible for involuntary (heart beat).

Sympathetic. Responsible for fight/flight response.
Parasympathetic. Responsible for rest and relax.

Neural Communication

Neurotransmitter. Chemicals made by neurone are used for communication between neurons during activities.
Alcohol Molecules. Imitate and resembles GABA and able to access GABA receptors, making people feel less anxious. GABA reduces anxiousness.
Reflex Sequence. Withdrawal reflex triggered.

Sensory neurons carry info from sensors to spine. Interneurons make connections between other neurons. Efferent neuron carry info away from spine to produce response.
Phantom Limb. After limb amputated, still feel like its there. Brain generate sensations from its image of the body it was rather than now. Treatments includes using a mirror.
Action Potential Sequence. Skin sense and transform electrical signals. Signals sent by axon to spine and brain. Brain interprets. Axion membrane gates open to allow electrical charges to enter or close

to keep these ions out. Opposite charges attrach and like charges repel.

Human Brain

Forebrain. Learning and memory, speaking, emotional responses, thinking, decisions (higher functioning)
Midbrain. Connects hind to fore. Reward/pleasure center.
Hindbrain. Fundamental to survival. Pons to connect messages between spine and brain. Medulla for reflexes/respiration/heart rate. Cerebellum for motor movements/balance.
Frontal Lobe. Personality, emotions, motor cortex. Narrow strip of cortex located on the back edge of the frontal lobe and extends down the side. Initiation of all voluntary movements. Right side control left and vice versa. Organisation and function of motor cortex. Executive function and memory (frontal shrinks with age).
Parietal Lobe. Perception and sensory experiences. Somatosensory cortex is the narrow strip of cortex loacted on the front edge of the parietal lobe and extend down its side. Spatial orientation, language abilities, visual and auditory attention.
Temporal Lobe. Primary auditory cortex. Receive electrical signals from recpetors in the ears, transform signals into meaningless sound sensations. Auditory association area then translates basic sensory information into recognisable auditory information.

Broca's area. Left of frontal lobe, combining sounds into words and arranging words into meaningful sentences. Damage means people can't speak in fluent sentences but can understand written and spoken words.
Wernicke's area. Left temporal lobe. Speaking in coherent sentences and for understanding speech. Damage leads to difficulty in understanding spoken/written words and putting them into sentences.
Occipital Lobe. Primary visual cortex - receives electrical signals from receptors in the eyes and transforms these signals into meaningless basic visual sensations. Visual association area transforms basic sensations into meaningful visual perceptions.

Visual Agnosia. Individual fails to recognise some object/person/color. Cannot combine individual parts into an image.
Neglect Syndrome. Cannot recognise other side, only one side.
Limbic system. Interconnected structures that make up core of forebrain, regulating motivational behaviors and organising emotional behaviors. Involves hypothalamus, amygdala, thalamus, hippocampus. Fight or flight response and homeostasis (balance body's arousal level for optimum functioning).

Sense Organs

Transduction Process. Specific sense organ transforms physical energy into electrical signals that become neural impulses which may be sent to the brain for processing.
Adaptation. Decreasing response of sense organs as they are exposed to continuous level of stimulation.
Sensations. Meaningless bits of information that result when the brain processes electrical signals that come from the sense organs.

Perceptions. Meaningful sensory experiences that result after the brain combines hundreds of sensations.

Vision

Stimulus is light waves. Invisible (too short) includes gamma rays, x-rays, ultraviolet rays. Visible (just right) waves are right length to stimulate receptors in the eye. Invisible (too long) radar, FM, TV, shortwave, AM.
Vision Process. Gather and focus light into precise area in the back of eye. Area absorbs and transform light waves into electrical impulses (transduction).

- **Image reversed.** In the back of the eye, objects appear upside down. Somehow the brain turns the object right side up.
- **Light waves.** Light waves are changed from broad to narrow focused ones.
- **Cornea.** Rounded, transparent covering over the front of the eye, curved to focus light waves into narrower beam.
- **Pupil.** Round opening at the front of th eye that allows light waves to pass into the eye's interior.
- **Iris.** Circular muscle that surrounds pupil and control the amount of light entering the eye.
- **Lens.** Transparent, oval structure whose curved surface bends and focuses light waves into an even narrower beam.
- **Retina.** Located at the back of the eyeball; thin film that contains cells that are extremely sensitive to light (photoreceptor) begin the process of transduction by absorbing light waves.

Transduction. 2 kinds of photoreceptors. Rods located primarily in the periphery (very light sensitive) to see dim light. Cone primarily in the center of the retina called the fovea for bright light and to see color. Chemeical breakdown in rods and cones trigger nerve impulse in neighboring ganglion cells, completing transduction. Nerve impulses in ganglion cells exit the eye through optic nerve. Optic nerve creates blind spot at its exit point.
Visual Pathway. Optic nerve exit from the back of the eye and pass through thalamus. Thalamus relay impulse to back of occipital lobe. Primary visual cortex transform nerve impulses into visual sensations. Sends sensations to neighboring association areas.

Theory of Color Vision. Sunlight contains all light wave. Shorter wavelengths of violet, blue, green. Longer wavelengths of yellow, orange and red.
Trichromatic theory. 3 types of cones and each contain different light-sensitive chemicals called opsins. Opsins are responsive to wavelengths of the 3 primary colors.

Opponent-process theory. Visual sensation that continues after the original stimulus is removed. Ganglion cells in retina and cells in thalamus respond to red-green and blue-yellow. When excited, respond to 1 color of pair. When inhibited, respond to complementary pair.

Audition

Amplitude for volumn, frequency for pitch.
External Ear. Picks up sound waves and send down the auditory canal.
Auditory Canal. Funnels sound waves down so that the waves strike the tympanic membrane.

Middle Ear. Eardrum is the boundary between outer and middle ear. Bone cavity sealed at each end by membranes that are connected by 3 tiny bones. Hammer at the back of the tympanic membrane. Anvil receives vibrations from hammer. Stirrup makes connection to oval window.

Inner Ear. Recpetors for hearing transforms vibrations into nerve impulses and sent to the brain for processing into auditory information. Basilar membrane has hair cells, vibrations in the cochleear tubes cause waves in the fluid, bending the hair cells and triggering a nerve impulse.

Auditory Perception. Primary auditory cortex transforms nerve impulses into basic auditory sensations. Auditory association area combines meaningless auditory sensations into perceptions.

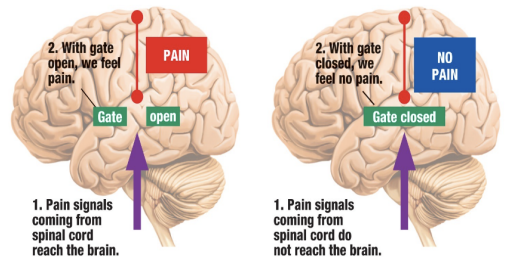
Vestibular sense. Sense the position of the head and maintain balance. Motion sickness.

Kinesthetic sense. Informs about body position and motions relative to gravity.

Taste. Taste buds perform transduction. Chemicals dissolve in saliva activates taste buds. Produces nerve impulses that reach areas of the brain's parietal lobe which is then transformed into sensations of taste.

Smell. Mucus in nasal passages dissolves volatile molecules and stimulates the olfactoory cells. Cells trigger nerve impulses to the brain and interpret the impulses as smells.

Pain



Endorphins. Chemicals secreted in response to injury or stress.

Acupuncture. Insert needles to manually/electrically stimulate needles. Scans reflect to pathway of pain, dull pain by releasing endorphins.

Absolute Threshold. Smallest amount of stimulus energy that can be experienced, will have a 50% chance of detecting it.

JND Weber's Law. Smallest change in intensity of a stimulus that a person is able to detect.

Subliminal Stimulus. Stimulus with energy levels below a person's absolute threshold, not consciously aware of the stimulus.

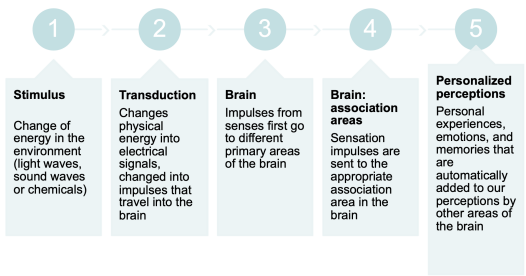


Figure-ground. Automatically distinguish between figure and ground.

Similarity. Group together elements that appear similar.

Closure. Fill in missing parts of a figure and see it as complete.

Proximity. Group together objects that are physically close to one another.

Simplicity. Stimuli are organised in the simplest way possible.

Continuity. Continuous paths when interpreting a series of points.

Size constancy. Perceive objects as remaining the same size even when their images on the retina are constantly changing.

Shape constancy. Perceive object as retaining its same shape, even when we view it from different angles.

Brightness constancy. Perceive brightness as remaining the same in changing illumination.

Color constancy. Perceive colors as remaning stable despite differences in lighting.

Depth Perception. Each eye receives a slightly different image. Large retinal disparity means close object.

Consciousness

Different levels of awareness of one's thoughts and feelings. Range from being acutely aware-alert to being totally unaware-unresponsive.

Awareness. Full awareness (alertness and concentration), little awareness (minimal attention, don't interfere with other activities).

Daydreaming. Low level of awareness, during automatic processes, fantasising while awake.

Altered states. Meditation, psychoactive drugs, hypnosis, sleep deprivation.

Sleep. 5 stages with different levels of awareness, consciousness, responsiveness and physiological arousal. Deepest state of sleep borders on unconsciousness.

Dreaming. Unique state of consciousness in which we're asleep but experiencing a variety of visual, auditory, and tactile images.

Freud's theory (the unconscious). Threatening wishes or desires, (sexual/aggressive), defend self-esteem, can't voluntarily recall unconscious thoughts.

Cognitive Nueroscience. Learning without awareness in emotional situations, acquiring habits.

Biological Clocks. Circadian rhythm (sleep-wake cycle) of 24 hrs and 18 minutes. Suprachiasmatic nuchues (hypothalamus), lower mid-brain regulates circadian rhythms, highly responsive to change in light.

Circadian Challenges

Midnight-snack clock. Regulates eating patterns, late night snacking. Obese people might have abnormality in their clock (located in hypothalamus).

Shift workers. Impact performance in cognitive and motor skills. Sleep-wake clocks have prepared bodies for sleep (feel sleepy, less attentive, lousy mood).

Jet lag. Faitgue, lack concentration, reduced cognitive skills. Traverls' circadian clocks are out of step with the external clock times at their new locations.

Stages of sleep

Changes in electrical activity of the brain, physiological responses as you pass through stages of sleep.

Alpha stage. Feeling relax and drowsy, eyes closed.

Non-REM (80% total time). 4 stages identified by brain waves and physiological responses.

Non-REM.

- Stage 1 - wakefulness to sleep. Lose responsiveness to stimuli, drifting thoughts and images. Presence of theta waves.
- Stage 2 - beginning of sleep. High frequency activity (sleep spindles), muscle tension, body temperature, heart rate decrease, difficult to be awakened.
- Stage 3 - slow brain-wave activity (delta waves), high amplitude, very low frequency.
- Consistent delta waves. Deepest stage of sleep. HR, respirations, blood flow to brain reduced. Secretion of growth hormone, controls levels of metabolism, physical growth brain development.

Rapid Eye Movement. 20% of sleep time, brain waves resembles beta waves (awake). High physiological arousal, functional paralysis. 5-6 times with 30-90 minutes between periods. REM for 15-45 minutes then asses into non REM.

Paradoxical Sleep. Dream research - vivid long dreams when awakend. REM behavior disorder (older people) - voluntary muscles aren't paralysed, sleepers act out their dreams. REM rebound - increased percentage of time in REM sleep if they were deprived on previous nights.

Sleep Theory

Repair Theory. Activities deplete key factors in brain/body that sleep replenishes/repairs. Restorative process - brain energy stores glycogen. Secretion of growth hormone, immunity.

Adaptive theory. Sleep evolved, prevented early humans from wasting energy, exposing themselves to the dangers of nocturnal predators.

Sleep Deprivation Consequences. Compromises immune system, increases production of stress hormones, risk factors for heart disease, obesity and diabetes. Interfers with vigilance and concentration, irritability, difficulty with rational and logical decision making.

Master sleep switch. Ventrolateral preoptic nuclues (VPLO) are a group of cells in the hypothalamus. Switched on VPLO secretes a neurotransmitter (GABA) that turns off areas that keep the brain awake. Switched off VPLO activates certain brain areas.

Reticular formation. Cells that stretches the length of the brain stem. Arouses and alerts the forebrain, prepares it to receive information from all the senses.

Going to sleep. Time of the day regulated by suprachiasmatic nuclues. Master sleep switch in VPLO turns on, turns off areas like the reticular formation. Chemicals, nuetrotransmitters regulate movement in and out of non-REM - REM sleep. Body temperatures falls, raises when awaken.

Seasonal Affective Disorder. Pattern of depressive symptoms, loss of interest in all activities; seasonal. Lethargy, excessive sleepiness, weight gain. Low incidence in sunny areas, higher in less sunny.

Definition of dreams

Freud's theory. Censor protects us from realising threatening and unconscious desires. Transforms our secret, guilt-ridden, and anxiety-provoking desires into harmless symbols like dreams. Manifest content are the symbols (what is remembered), latent content are what the symbols mean.

Extensions of waking life. Dreams reflect the same thoughts, fears, concerns and emotions that we have when awake.

Activation-synthesis theory. Cognitive control are shut vs emotions. Sleeping brain has chemical and nueral influences result in hallucinations, high emotions, bizarre thoughts patterns that are dreams.

Threat simulation theory. Biological function by repeatedly simulating events that are threatening our waking lives. Practice and rehearse our response.

Content of dreams. Motion, indoors, visual sensations, rarely sensations of taste, smel, or pain, flying, falling. Emotions of fear, anxiety rather than happiness. Rarely sexual encounters. Rarely can we either control/choose our dreams. Visual imagery in color. Blind from birth dream in tactile, olfactory, gustatory.

Sleep Disturbances

Insomnia. Difficulties in going to sleep, staying asleep, daytime complaints like fatigue, memory difficulty. Nondrug treatment (sleep routine) and drug treatments.

Sleep apnea. Person stop breathing repeatedly, momentarily awaken then resume sleep.

Narcolepsy. Brief periods of REM sleep, loss of muscle control, triggered by emotional change.

Night terrors. Stage 3/4 delta sleep. Frightening experiences, sudden awakening, fearful, rapid breathing, heart rate, no memory.

Nightmares. REM. Frightening, anxiety-producing images, great danger. Person can describe nightmare in detail.

Sleepwalking. Same stage as night terrors. Poor coordination but can avoid objects, limited conversation, no memory.

Hypnosis

Procedure in which a researcher/clinician/hypnotists suggests that a person will experience changes in sensation, perceptions, thoughts, feelings or behaviors.

Hypnotic Induction. Inducing hypnosis by first asking a person to either stare at an object or close his/eyes and then suggesting that the person is becoming very relaxed.

Altered states theory. ALtered state of consciousness, disconnected from reality, to experience and respond to various suggestions.

Sociocognitive theory. No hypnosis. Behaviors observed not from being hypnotised but from having the special ability of responding to imaginative suggestions and social pressures.

Hypnotic Analgesia. (PET scans) Reduction in pain after hypnosis, received suggestions that reduced anxiety and promoted relaxation.

Posthypnotic suggestion. During hypnosis about performing a particular behavior to a specific cue posthypnosis.

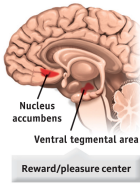
Theories of motivations

Instinct Approach. Innate tendencies or biological forces that determine behavior. Fixed action pattern is a biological force that says an organism have to behave in a particular way in a specific environment condition.

Arousal Approach. Seeking activities that provide optimal level of stimulation to maintain arousal.

Yerkes-Dodson law. Difficult tasks, low arousal. Interaction between physiological arousal and task difficulty.

Sensation seeker. Someone who needs more arousal than normal. Brain (nucleus accumbens, ventral tegmental area) neurotransmitteritters, dopamine makes up neural circuitry that produces rewarding feelings.



Self-determination Theory. Autonomy, Competence and Relatedness to others. Goals: objects/thoughts that we learn to value, motivated to obtain. Extrinsic motivation involves behaviors that reduce needs, to obtain incentives or external rewards. Personally rewarding, fulfil our beliefs or expectations.

Maslow’s Hierarchy of Needs. Ascending order in which biological needs are placed at the bottom and social needs at the top. Satisfy bottom to top.

Hunger. How much food is eaten and required to maintain energy.

- **Biological.** Physiological changes in blood chemistry, signals from digestive organs that provide feedback to brain that makes us eat/stop eating.
- **Genetic.** Fat cells or metabolic rates, breaks down food into energy and burn off fuel to set point to maintain body fat at constant.
- **Psychosocial (Body Weight).** Learned associations (snacking + tv), pressures to be thin, personality problems.

Need for Achievement. Includes social needs (affiliation, nurturance, dominance and achievement), achievement need (set challenging goals and to persist in pursuing those goals in setbacks).

Thematic Apperception Test (TAT). Personality test where participants look at pics of people in ambiguous situations, make up sotries about what characters are thinking, feeling and the outcome.

- **High need for achievement.** Persist longer and perform better on task, set challenging but realistic goals, compete with others to win, attracted to careers that require initiative.
- **Fear of failure.** People who are motivated to avoid failure by choosing easy tasks.
- **Self-handicapping.** Actions that contribute to failure, knowingly or unknowingly, these actions are used as excuses when failed.

Cognitive influences.

- **Cognitive factors.** Perceive a situation, how evaluations influence our willingness to work.
- **Intrinsic motivations.** Engaging activities without receiving any external rewards, fulfils own beliefs.
- **Extrinsic motivations.** Engaging activities that reduce biological needs or help obtain incentives and external rewards.

Impact on everyday life

Conditions that poor/minority students perform well are longer school days, educational goals closely monitored. Teaching of character and academics. **Knowledge is power program.** Noncognitive skills includes respect, patience and motivation to learn. **Difficulty of dieting.** Physiological vs

Psychological factors. Effective lifestyle changes includes changing attitude towards food, eating patterns, developing regular exercise program and a maintainence plan. Visualising food and treating obesity as food addiction.

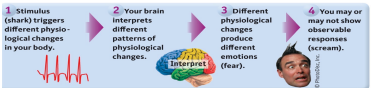
Anorexia Nervosa. Refusing to eat and not maintaining weight at 85% of expected. Sufferers have intense fear of gaining weight, missed 3 consecutive menstrual cycles, disturbed body image of self.

Bulimia Nervosa. Minimum of 2 eating episodes per week for at least 3 months. Not being able to stop eating and engage in vomiting, abusing laxatives, rigorous dieting, fasting, excessive concern about body shape and weight.

Binge eating disorder. Binge-eating episodes, loss of control over eating. No vomitting, laxatives, rigourous dieting and purge methods, tend to be overweight, triggered by stress.

Emotions

Appraise some stimulus in terms of your well-being. Experience a **subjective feeling** such as happiness. Experience **physiological responses** heart rate or breathing. Show **observable behaviors** like smiling.



Peripheral theory. Physiological changes in the body that gives rise to emotinal feelings.

James-Lange theory. Brain interprets specific physiological changes as feelings or emotions, a different physiological underlies each emotion.

Cannon-Bard theory. Emotions originate in the brain, not the result of physiological responses.

Facial-feedback hypothesis. Sensations or feedback from movement of facial muscles, skin are interpreted by your brain as different emotions.

Cognitive appraisal theory. Interpretations or appraisals of situations results in emotional feelings like Schachter-Singer experiemnt.

Affective neuroscience approach. Neural bases of mood and emotion by focusing on the brain’s neural circuit.

- Stereotypical facial expressions
- Less controllable than we might like, may not respond to reason
- Influences cognitive processes
- Hard-wired in the brain

Amygdala (emotional detector). Evaluates whether stimuli have positive or negative emotional significance for our well-being, storing memories. Slower circuit is the eyes to thalamus to visual cortex to amygdala. Faster one is from eyes to thalamus to amygdala.

Universal Facial Expressions. Signall specific feelings or emotional states.

Cross cultural evidence (Paul Ekman). Smile is nearly universally recognised as a signal of a happy state. Surprise has less cross-cultural consensus.

Genetic evidence. Smiling occurs in all infants even blinds ones.

Functions of emotions. Social signals accompany emotions, how we feel, what we’re going to do. Survival, attention and memory evaluate objects, people an situations, how good or bad they are for our well-being. Emotion focuses attention and enchances memory for emotional events.

Happiness. Positive emotions indicated by smiling and laughing; momentary pleasures (joke), short-term (date), long-term (relationship).

Reward/pleasure center several areas, nucleus accumbens, ventral tegmental area, several neurotransmitteritters. Accustomed to good fortune, impact fades, contributes less to long-term happiness. Women happier than men in life, age 50 this reverse. Young are happy, declines as adult responsibilities set in, returns at 50 to 75. Set point for experiencing a certain level of happiness.

Matsumoto & Ekman. Emotions across culture. Display rules are rules that regulate how, when, and where a person expresses emotions and how much exepression is appropriate. 5 perceiving emotions rated for intensity: Surprise, anger, happiness, disgust and sadness.

Emotional Intelligence. Ability to perceive emotions accurately by taking feelings into account when reasoning. Understand emotions and regulate/manage emotions in onself and others. Higher EI tend to be lead to better lives in general, can predict alot of things.

Mirror neurons. Activation pattern in our brain becomes same as the person with whom we empathise with, help share emotions of another person. Polygraph tests help to detect emotions that are difficult to suppress.

Galvanic skin respoonse. Criticial questions leads to large emotional responses. If guilty, autonomic response are expected on critical questions.

Learning

Learning. Enduring/permanent change in behavior that results from previous expeerience with certain stimuli and response.

Behavior. Unobservable mental events (thoughts, images) and observable responses (fainting).

Classical Learning. Learning which a neutral stimulus acquires ability to produce a response that was originally produced by a different stimulus. Ringing a bell before putting food in dog mouth. Dog associated bell with food and start to salivate when bell is rung, this is a **conditional reflex**.

- Choose stimulus and response: Neutral stimulus (cause sensory response but dont produce the reflex being tested), Unconditioned stimulus (stimulus that trigger physiological reflex like blinking), unconditioned response (unlearned physiological

reflex by unconditioned stimulus).

- Establishing classical conditioning: put neutral stimulus between unconditioned response and unconditioned stimulus to make it a conditioned response.

- Testing for conditioning: test using the conditioned stimulus (bell) to obtain the conditioned response (salivating).

Taste-aversion learning. Associate sensory cue with getting sick.

Preparedness. Biologically primed to associate CS and UCS more easily than others.

Emotional Response. Emotion type, a stimulus associated with a particular event.

Pavlovian. Automatic

Cognitive Perspective. Learn what to expect based on NS.

Operant Learning. Learning in which the consequences that follow behavior changes the likelihood of that behavior occurrence in the future.

Thorndike’s Law of effect. Behaviors followed by positive consequences are strengthened and vice versa.

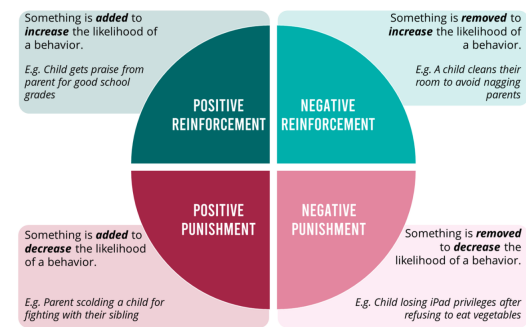
Operant Response. Modified by its consequences and is a meaningful, easily measured unit of ongoing behavior, focusing on consequences.

Shaping. Animal pressing bar to get food, develops bar pressing behavior.

Operant Conditioning	Classical Conditioning
increase or decrease the rate of response	create a new response to a NS
voluntary response before getting a reward	involuntary response: physiological reflexes (salivation, eye blink)
emitted response: shaped to emit the desired responses	elicited response: UCS elicits an involuntary reflex response, salivation, which is called the UCR
contingent on the consequences or what happens next	CR: NS becomes the CS if it occurs before the CR expectancy: learn a predictable relationship between, or develop an expectancy about the NS and UCS
reinforcer must occur immediately after the desired response	classical conditioning leads to learning a predictable relationship between stimuli
learn that performing or emitting some behavior is followed by a consequence (reward, punishment)	

Reinforcement. Positive (presentation of stimulus that increase probability of behavior happening again), negative (stimulus that tries to decrease probability of behavior happening again.)

Punishment. Positive (present unpleasant stimulus after response), negative (remove reinforcing stimulus after response).



Continuous Reinforcement. Every occurrence of operant response result in delivery of reinforcer.

Partial Reinforcement. Situation which responding is reinforced only sometimes.

Schedules	Definition/Examples	Effects
Fixed-ratio (FR)	Reinforcement occurs after a fixed number of responses. e.g., piecework in a factory	High rate of responses that follows a burst-pause-burst pattern
Variable-ratio (VR)	Reinforcement occurs after an average number of responses, which varies from trial to trial e.g., slot machines	High steady rate of responses
Fixed-interval (FI)	Reinforcement occurs for the first response emitted after a preset time has elapsed. e.g., scheduled exams	Responses increase as the time for the next reinforcer nears
Variable-interval (VI)	Reinforcement occurs for the first response emitted after an average amount of time has elapsed, interval varies from trial to trial. e.g., study habits for pop quizzes.	Moderate steady rate of responses

Classical vs Operant Phenomena	Operant	Classical
Generalization	Person emits the same response to similar stimuli	A stimulus similar to the original CS to elicit a response similar to the CR
Discrimination Discriminative stimulus (cue)	A response is emitted in the presence of a stimulus that is reinforced , not an unreinforced stimuli	Tendency for some stimuli, but not others, to elicit CR
Extinction	Reduction in operant response when it is no longer followed by a reinforcer	Reduction in response when the CS is no longer followed by the UCS
Spontaneous recovery	Temporary recovery in the rate of responding	Temporary occurrence of the CR in the presence of the CS

Observational Learning. Emphasise importance of observation, reward in learning of social skills, personal interest and other behaviors.

Insight Learning. Mental process marked by sudden and unexpected solution to a problem.