Notable Figures:
**Binet**: Intelligence tests.
**Descartes**: Interactive Dualism. Mind/Body interact but processes are different.
**Dewey**: Functionalism
**Freud**: Psychoanalysis. Eros/Thanatos. ID (pleasure), Ego (reality), Superego (idealistic - Conscience/Morals).
  - Oral(0-18m), Anal(18m-3), Phallic(3-6), Latency(6-pub), Genital(puberty+)
**Horney**: 10 Neurotic Needs (causes of Anxiety, Depression).
**Harlow**: Monkeys. Learning Set (set way to solve problems).
**Kohlberg's Morality**: Preconventional(Punish,Reward) Conventional(good,authority) Postconventional(Contract,Morals)
**Locke**: British Empiricism. Blank slate....experience.
**Piaget**: Cognitive Development (accomodation of schemas).
**Rogers**: Humanism. Reaction to behaviorism. Put "person" back into Psychology. I/ME
**Skinner**: Behaviorism. Psychology = study of Observable Behavior
**Titchener**: Structuralism/Introspection. First Lab (USA)
**Watson**: Behaviorism. Phys reaction to env stimuli. Study of mental process=unscientific. "Father"
**Wertheimer**: Gestalt. Whole is greater than the parts. Totality (not indiv components).
**Wundt**: Structuralism/Introspection. Scientific Method. First Lab (Germany), experimental psychology.

Schools of Psychology:
**Behaviorist**: Learned responses to stimuli. Study animals. Watson, Skinner, Pavlov
**Biological**: Genes, Nervous System, Hormones, Neurotransmitters.
**Cognitive**: (react to Behav) thinking, problem-solving, memory, language, etc. Piaget, Bandura
**Functionalist**: What is the purpose/function of our mental experiences. Dewey, James
**Humanistic**: People = Basically good. Self-actualization. Unique individuals. Rogers, Maslow
**Psychoanalytic**: Innate drives, society's restriction on expression.
  - Freud, Jung, Adler, Horney, Erikson
**Structuralist**: Introspection, what ingredients make up our mental experiences. Wundt
**Neurons**: Individual Nerve Cells.  
Dendrites > Soma > Axon (Myelin) > Axon Terminal (Neurotransmitters) > Synapse (cleft)  
  *Axon*: SENDS messages to nearby neurons, glands, or muscles.  
  *Dendrites*: RECEIVE messages from nearby neurons...send toward cell body (soma)  
  *Glial Cells*: Create Myelin, support, guide, repair neurons.  
  *Interneurons* (association): Carry impulses WITHIN the brain or spinal cord. Neuron to Neuron.  
  *Motor Neurons* (efferent): Carry impulses AWAY from brain or spinal cord toward muscles and glands.  
  *Sensory Neurons* (afferent): Take in info and carry impulses TOWARDS brain or spinal cord.  
  **Absolute Refractory Period**: Resting pause, neurons pump positively charged sodium back out.

**Brain**:  
**Parts of the brain** - Stem>Thalamus/Hypothalamus>Reticular Formation>Cerebellum>Cerebral Cortex>Corpus Collosum.  
  *Basal Ganglia*: Muscle contractions, movements  
  *Brain Stem*: (separates brain and spinal cord) Medulla & Nuclei (basic life reflexes).  
  *Broca’s Area*: Brain. Controls muscles involved in speaking.  
  *Central Nervous System*: All neurons/nerve fibers surrounding brain and spinal cord.  
  *Cerebral Cortex*: Outer Covering. Receives sensory info and transmits motor info.  
  *Temporal* (sound), *Frontal* (spch/lrning/thnk/decis/abstract),  
  *Parietal* (sensory/attention), *Occipital* (vision).  
  *Cerebellum*: Voluntary fine motor movements.  
  *Endocrine System*: (hormones). Network of glands that affect behavior.  
  Pituitary(brain,master), Thyroid(neck,metabolism), Adrenal(kidneys,emotions/stress/threat)  
  *Hypothalamus* (in Limbic System): Controls motivated behavior (hunger, thirst, sex, temperature regulation)  
  *Peripheral Nervous System*: Two parts.  
    *Somatic Nervous System*: Voluntary Muscles, Sensory organs (eyes, ears, skin, etc.)  
    *Autonomic Nervous System*: Involuntary actions, internal organs etc.  
      Sympathetic (excites), Parasympathetic (relaxes).  
  *Pituitary Gland* (in Limbic System): Master Gland, controls hormones from other glands  
  *Pons*: Facial expressions, sleep, dreaming.
Reticular Formation (in brain stem): Arousal level (Eg, alert or asleep). NOT fear/aggression (amygdala).
Thalamus: Relays sensory info to cortex.
Wernicke’s Area: Brain. Sounds are decoded and interpreted.

**Sensation & Perception:** Psychophysics
Absolute Threshold: Minimum amount to detect 50% of time.
Difference Threshold: Just Noticeable Difference (JND) between two stimuli.
  - Weber’s Law: Harder to notice differences if more intense stimuli (louder, brighter etc.) Proportion/%
Grouping: Closure, Similarity, Proximity, Continuity
Visual Cliff: 6 months.

**Cornea:** Protective covering where reflected light first enters the eye.
**Color Vision:** Two Theories (Trichromatic Theory, Opponent-process Theory)
  - **Trichromatic Theory** (Young-Helmholtz): 3 cones=3 wavelengths (RGB). Not explain neg afterimages.
  - **Opponent-process Theory** (Hering): Paired Receptor Cells (RG, BY, BW). Stimulate 1 = Inhibit other.
**Iris:** Colored part. Contains the pupil.
**Lens:** Bends (refracts) light. Focuses a flipped, inverted image onto retina.
**Light Waves:** Electromagnetic waves, stimulate receptors in the eye.
  - **Intensity:** Amount of Energy per unit of time (brightness)
  - **Wavelength:** Distance between two crests (color)
**Optic Nerve:** Carries visual info to lateral geniculate nucleus of the Thalamus.
**Blind Spot:** Where optic nerve exits the eye. No receptor cells = no vision.
**Retina:** Thin structure, back of eye. 2 types of receptor cells:
  - **Rods:** Periphery of retina, black and white. Best in low light, motion.
  - **Cones:** Middle of retina (fovea), color/details. Best in daytime, more visual acuity. Detects Wavelengths.

**Outer Ear** (pinna): Collects sound from air and directs it through the ear canal.
**Tympanic Membrane** (eardrum): Vibrates when sound hits it.
**Oval Window:** Membrane separates middle ear from inner ear. Sends vibrations to cochlea.
**Cochlea:** Fluid-filled membrane in inner ear. Pressure changes stimulate hair cells.
**Sound Waves:** Vibrations (change in air pressure) that stimulates auditory receptors.
  - **Amplitude:** Height of Wave (loudness).
  - **Frequency:** Length of Wave (repetitions, pitch)
  - **Place Theory:** Hair cells respond to frequency based on location in cochlea.
  - **Frequency Theory:** Hair cells fire at different frequencies in the cochlea, so we sense pitch.
**Smell** (olfaction): Chemical. Inhaled molecules excite receptors in the epithelium.
**Taste** (gustation): Chemical. Taste buds on tongue. Salty, Sour, Bitter, Sweet.
**Skin Sense** (somesthesia/touch): Mechanical. Pressure, Pain, Warmth, Cold.
**Vestibular Sense:** Mechanical. Inner ear. Orientation, Balance, Location of head in
Kinesthetic Sense: Receptors in muscles, tendons, joints, relay information about our limbs.

Consciousness: Being Aware. Awake/Sleep Circadian Rhythm.

Temperature: Rises early in morning, peaks around midday, dips mid-afternoon, drops late evening.

Sleep: 5 Stages (90 minute cycle):
  - Awake: Alpha Waves but relaxed (slow, regular)
  - Stage 1 (5 mins): Theta Waves. Slower breathing, irregular brain waves.
  - 'hypnagogic' (falling).
  - Stage 2 (20 mins): Deeper relaxation, occasional burst of brain activity (Sleep Spindles)
  - Stage 3: Delta Waves (Slow-wave Sleep - hard to awaken). Large, slow waves.
  - Transition into Stage 4.
  - Stage 4 (30 mins): Stronger, consistent Delta Waves (Slow-wave Sleep - hard to awaken)
  - Then (after 1 hour)... Stage 3....Stage 2....then REM

Sleep Spindles: Brief, high amplitude bursts of electrical energy. Person is asleep but easily awakened.

Dreams:
  - Freud: Manifest Content=Actual Images, Latent Content=Real meaning (sexual, aggressive).
  - Activation-synthesis Theory: Neurons Random fire, dreams attempt to make sense of images.
  - Information-processing: Consolidate day's events and stamp into memory.

Learning:
  - Associative Learning: Learning a connection between two stimuli (CC), or a stimuli and a response (OC)
  - Cattell: Crystalized Knowledge, Fluid Knowledge.
  - Non-associative Learning: Repeated presentation of a single stimulus.
    - Habituation: Getting used to repeated noises, or hum of lights etc.
    - Sensitization: Repeated/Intense presentation = respond to even weaker stimuli.

Cognition: "Problem-solving Activities" - Thinking, Language, Memory, Intelligence.

Confirmation Bias: Look for info to back up your belief.

Functional Fixedness: Can't see new uses for familiar objects. (Eg, quarter works as a screwdriver).


Language:
  - Babbling Stage: (4-6month to 1yr). Practice sounds. No longer recognize foreign
language sounds

**One-word Stage**: (1yr to 18months). Word PLUS gestures = **Telegraphic Speech** (also in Two-word Stage)

**Two-word Stage**: (18+ months). Noun + Verb (Doggie..bite), later Adjective + Noun (Bad Doggie).

**Language Acquisition Device** (Noam Chomsky): Universal built-in mental system helps us learn language.  

**Morphemes**: Words or parts of words that convey meaning. 

**Semantics**: Rules for mapping morphemes onto the ideas they represent. 

**Syntax**: Rules for combining morphemes in meaningful ways.

**Memory**: Sensory > Short-term > Long-term (ie, Procedural, Semantic. Episodic, Metamemory)

**Levels of Processing Model**: One Memory w/ different degrees, levels, depths.

**Intelligence**: Binet. IQ: Mental Age/Chrono Age * 100. **Spearman** "g"=General Intelligence.

**Development**: Cross-sectional (different ages at same point in time), Longitudinal (same group over time), or Cross-sequential = best.

**Piaget’s Cognitive Development**: Conservation=Different shape but same mass, Permanence=Out of sight means gone. 

**Disequilibrium**: When new info doesn’t fit into existing schema. **Assimilation**: Incorporates new info into existing schema.

**Accomodation**: Changes schema to fit new schema.

- **Sensorimotor** (0-2) No object permanence. causality.  
- **Pre-Operational** (2-6) No conservation. Object Permanence, Symbolic language, Egocentric, Intuition rather than logic.

**Concrete Operational** (6-12) Conservation, think logically, logical concepts/rules to solve concrete problems.

**Formal Operational** (12+) Scientific, Hypothetical thinking about abstract thoughts/symbolism.

- 2m: lift head  
- 3m: roll over  
- 4m: sit propped  
- 6m: sit up  
- 7m: stand supported  
- 9m: walk supported  
- 10m: stand moment  
- 11m: stand confident  
- 12m: walk  
- 14m: walk backward  
- 17m: walk up steps  
- 18m: manipulate objects while walking  

**Erikson’s Psycho-social Development**: Tension (disequilibrium) is necessary for change.  

- Trust v. Mistrust (0-1) Depend on others: Are others reliable?  
- Autonomy v. Doubt/Shame (1-3) Capable fo Self-control: Allowed to exercise it?  
- Initiative v. Guilt (3-5) Can set goals: Is that encouraged?  
- Industry v. Inferiority (6-11) Can reason, likes success: Praised and taught?  
- Identity v. Role Confusion (12-18) Identity/multiple roles: Integrate all roles?  
- Intimacy v. Isolation (18-35) Break from family, new rels: Willing to share yourself?  
- Generativity v. Stagnation (36-55) Kids are gone (free): Show interest in others?
Integrity v. Despair (55+) Reflecting on life: Accept it all?
Young-old: 65-74, Middle-old: 75-84, Old-old: 85+

**Kohlberg** Moral Development: Preconventional/self (0-9) Conventional/other (9-pub) Postconventional (adult)

**Kubler-Ross**: Denial, Anger, Bargaining, Depression, Acceptance

**Abnormal**:
**Anxiety**: Generalized Anxiety, Panic, Phobias, OCD.
**Dissociative**: Amnesia, Fugue (wake up in new place), Dissociative Identity Disorder (MPD).
**Mood**: Depressions, Bipolar, Seasonal Affective Disorder.
**Personality**: Paranoid, Antisocial, Borderline, (relationships/self-image/emotions), Narcissistic (praise me).
**Schizophrenia**: Psychosis, Hallucinations, Delusions, Catatonia, Paranoia, Echolalia (repeat back)
**Somatoform**: Associated with disease or physical disorder. Conversion, Hypochondriac.

- Counterconditioning, Systematic Desensitization (gradual), Flooding, Averse Conditioning, Token Economy.

**Biological**:
Dep (Prozac/Paxil/Zoloft=SSRI), Anx (Librium/Valium=CNS suppress) Psychotic (Clozapine/Thorazine=Dopamine)

**Cognitive**: Abnormal thinking. Change thoughts (accurate, rational, positive). Lead to healthy, fulfilling goals.


**Social Cognition**: How we process information about other people.
- Attribution (explain behavior of others): Dispositional (intelligence, personality), Situational (luck, outside help)
- Fundamental Attribution Error: Other’s behavior=Disposition (internal), but Own Behavior=Situational(external)
- Cognitive Dissonance Theory: Feel bad about behavior, so = caused by Situation/external, or change own attitude

**Normative Social Influence** (Asch): Three lines = same length (subject went with choice of majority 2/3 of time).

**Informal Social Influence**: Wait to see how others react to a joke before laughing.

**Milgram** (Shock Experiment): 63% continued with shocks until "XXX DANGER" (450 volts).

**Aggression**: Frustration-aggression Hypothesis (debunked): Frustration always leads to aggression (not true)

**Altruism**: Murder of Kitty Genovese (1964). 38 witnesses but nobody helped.
Social-exchange Theory (minimax principle): Goal in life is to maximize reward and minimize cost.

Motivation:
Hunger: Low Glucose/High Insulin. Hypothalamus (Ventromedial=less hungry, Lateral=more hungry).

Emotions:
General Adaptation Syndrome: STRESS: Alarm, Resistance/Adaptation, Exhaustion
Cannon-Bard Theory: Crazed Dog = Arousal AND Fear simultaneously (not causing one another).
Drive Reduction Theory: Hull. Drive is essential in order for responses to occur (must WANT to learn).
James-Lange Theory: Crazed Dog = Arousal LEADS US TO FEEL Fear
Lazarus Theory: A thought always precedes an emotion.
Two-factor Theory (Schacter): Arousal+Label LEADS US TO FEEL Fear/Anger/Love (depends how we label our arousal)

Sexual response stages: Excitement, Plateau, Orgasm, Resolution (refractory period=recovery after orgasm)

Testing:
Reliability: Consistency of scores.
   Test-retest: Second time same? (Correlation +.70=good)
   Internal Consistency: Score on two halves, or odd v. even Q's. (Cronbach's Alpha)
Validity: Does it measure what it is supposed to? (Can be reliable but not valid).
Independent Variable (cause/doesn't change), Dependent Variable (effect/changes).
Correlation: -1 to 1 (0=pure chance). Pos=/ Neg=\ 
Statistical Significance: Difference that would show up 5% of the time or less if correlation is 0.00.