### Perspectives and Theories

- **Biological**: everything psychological is simultaneously biological. Psychological claims have chemical and physical causes.
- **Developmental**: focuses on how humans’ abilities and personalities evolve as they mature.
- **Humanistic**: emphasizes environmental influences on human potential and free will, emphasizing individual progression toward self-actualization.
- **Cognitive**: focuses on the ways in which humans process information, such as perception, memory, and problem solving; also focuses on various unconscious states’ roles in processing information.
- **Behavioral**: views the mind as a “black box” which researchers cannot understand through introspection, instead advocating that psychologists form objective conclusions based on observing subjects in their natural environments.
- **Sociocultural**: evaluates the ways in which society shapes human behavior and thinking.
- **Evolutionary Socio-Biological**: emphasizes the development of psychological instincts through natural selection, explaining psychological behaviors as evolutionary responses built into the human genome.
- **Trait View**: asserts that behavior results from each person’s unique combination of traits (ex: introversion vs. extroversion).
- **Structuralism**: focused on uncovering the basic structures that make up mind and thought; looked for the individual elements through which conscious experience occurs.
- **Functionalism**: rejected structuralism’s focus on laboratory research (as opposed to applicable psychology to help humans). Emphasizes the functions of consciousness and the ways in which consciousness helps people adapt to their environments.
- **Introspection**, the process of reporting one’s own conscious mental experiences to a psychologist for evaluation.
- **Gestalt Psychology**: completely rejected structuralism, arguing that psychology should focus on the “big picture” of the mind as a whole instead of structuralism’s focus on individual part.
- **Nature vs. Nurture**: to what extent is human behavior genetically predetermined?

### Pivotal Players

- **Socrates**: accepted the “nature” side of the nurture v. nature issue, arguing that intelligence and character are inherited, as well as some concrete ideas.
- **Aristotle**: accepted the “nurture” side of the nurture v. nature issue, arguing that all human traits and actions are purely reactions to the sensory environment.
- **Francis Bacon**: developed the scientific method.
- **John Locke**: rejected the notion of inborn ideas, arguing that the mind is a *tabula rasa* (blank slate) which is written by experience.
- **Rene Descartes**: disagreed with Locke’s *tabula rasa* theory, arguing that some ideas are innate. Descartes also used empirical research to assert psychology’s basis in the nervous system, an evolutionary idea for a time when most people believed that psychology came from spiritual direction separate from human anatomy.
- **Wilhelm Wundt**: the first individual to declare himself a psychologist; supported idea of structuralism.
- **William James**: first American psychologist. James disliked how structuralism was only applied to laboratory research and believed that psychology should look at function as well as structure (functionalism).
- **John B. Watson**: developed the perspective of objectivism (see below).
- **Sigmund Freud**: developed the perspective of psychoanalysis (see below), which argued that human behavior develops from unconscious drives, conflicts, and experiences. Freud focused heavily on sexuality in his explanations of psychoanalysis, developing the Electra and Oedipus Complexes and even experimenting on his own children.
- **Edward Titchener**: introduced the idea of structuralism.
1.2: Research Methods

Vocabulary

• **Random Sample**: group of subjects selected by chance; subjects demographically represent the target population
• **Naturalistic Observation**: research method where subjects are observed in their natural environment and researchers form descriptive observations on subject behavior so that subjects do not behave differently because of being observed
• **Correlation Coefficient**: number between 1 and -1 representing the degree of relationship between two numbers
• **Experiment**: research method in which the researcher controls the conditions; must account for the independent variable, dependent variable, and confounding variables
• **Double Blind Procedure**: experimental procedure in which the researchers administering the independent variable do not know who is in the experimental group and who is in the control group
• **Case Study**: an observational research method in which one person is studied in-depth in order to reveal universal principles
• **Survey**: a study where researchers obtain the self-reported attitudes or behaviors of a particular group by questioning a representative, random sample group
• **Operational Definition**: a statement of the procedures (variables) used to define research variables through measurable parameters.
• **Random Assignment**: assigning participants to experimental and control groups by chance, thus minimizing preexisting differences between those assigned to the different groups.
• **Hindsight Bias**: the tendency to believe, after learning an outcome, that you would have foreseen an outcome prior to its occurrence
• **Placebo Effect**: experimental results caused by expectations alone; any effect or behavior caused by the administration of an inert substance or condition, which the recipient assumes is an active agent
• **Confounding Variable**: variable that has unwanted influence on an experiment’s outcome
• **Standard Deviation**: a computed measure of how much scores vary around the mean score
• **Statistical Significance**: the likelihood that a result occurred by chance; in psychological studies, the

Key Ideas

**Cause and Effect**: only scientific experiments can establish a causal relationship. An experiment consists of a pre-chosen sample. **Random assignment** applies different treatments to each subject. Each treatment exists to control the effects of **confounding variables**.

**Research Ethics**: 1) Informed Consent, 2) Protection from harm, 3) Confidentiality, 4) Full Debriefment.

Some controversial studies include:

• Stanford Prison Experiment–The psychology of role playing. Experiment cut short due to inhumane conditions. Lacked protection from harm.
• Milgram’s Experiment–Obedience to authority. Lacked informed consent.
• Harlow’s Monkey Experiment–Attachment. Possible cruelty to animals?

**Perspectives**: research psychology is limited to the ‘scientific perspectives’: cognitive, behavioral, biological, sociocultural, and developmental.

**Reliability of Statistical Methods**: as there are numerous ways to analyze a certain set of data, the scientific method requires replication. A certain result must be shown to reliably produce a certain result. Statistics itself is not entirely reliable.
2.1: The Nervous System

Divisions of the Nervous System

- **Central Nervous System**: brain and spine
- **Peripheral Nervous System**: connect CNS to rest of body
- **Somatic Nervous System**: division of peripheral nervous system that controls voluntary movements of skeletal muscles
- **Automatic Nervous System**: controls self-regulated action of internal organs and glands
- **Sympathetic Nervous System**: division of autonomic nervous system that arouses the body, mobilizing its energy in stressful situations
- **Parasympathetic Nervous System**: calms the body, conserving its energy
- **Central Nervous System**: brain and spine
- **Peripheral Nervous System**: connect CNS to rest of body
- **Nerves**: cells of the nervous system.
- **Sensory Neurons**: nerve cells that convert stimuli into electrochemical impulses
- **Motor Neurons**: nerve cells that signal muscles to contract
- **Efferent (Motor) Neurons**: send info away from brain
- **Afferent (Sensory) Neurons**: send info toward brain

Parts of the Neuron

- **Neuron**: a nerve cell; the basic building block of the nervous system
- **Dendrite**: the bushy, branching extensions of a neuron that receive messages and conduct impulses toward the cell body
- **Axon**: the extension of a neuron, ending in branching terminal fibers, through which messages pass to other neurons or to muscles or glands
- **Myelin Sheath**: a layer of fatty tissue segmentally incasing the fibers of many neurons.
- **Schwann’s Cell**: specific type of glial cell that comprises the myelin sheath
- **Synapse**: gap between neurons; works as electrical insulator, preventing an electrical charge from racing to the next cell
- **Glial Cells**: cells in the nervous system that support, nourish, and protect neurons

Neurotransmitters

- **Acetylcholine**: muscle contractions (movement), learning, memory
- **Dopamine**: alertness, pleasure and reward
- **Endorphins**: pain control, pleasure, stress reduction
- **GABA**: inhibitory neurotransmitter—controls excitation
- **Glutamate**: Excitatory neurotransmitter, long term memory
- **Norepinephrine**: adrenaline—elevates alertness, mood, physiological arousal
- **Seratonin**: mood regulation, hunger, sleep

How Neural Messages Travel

1. The dendrite accepts incoming neurotransmitters.
2. The cell body receives information from the dendrites and passes it to the axon at the appropriate time.
3. When it is not charged, the axon has a slight negative charge called its **resting potential**. When axon becomes excited, it crosses the **absolute threshold**, triggering the **action potential**, which increases its charge and causes an electrical signal to travel along the axon to the axon terminal.
4. In order to pass through the synaptic cleft, the electrical signal must be converted into a chemical signal at **terminal buttons** on the axon terminal. At the terminal buttons, synaptic vesicles (sacs containing neurotransmitters) rupture and release neurotransmitters across the synapse. This conversion is called **synaptic transmission**.
5. After firing, the neuron cannot fire for a small period of time, called the **refractory period**, during which the neuron ‘recharges.’