

Psychology: The scientific study of behavior and mental processes

Scientific: Answering questions objectively based on facts, data, and established methods.

Behavior: Observable Actions

Mental Processes: Thoughts, feelings, sensations, dreams etc

Psychology is a combination of Philosophy of the mind and Biology.

Roots of Psychology: Philosophy

Plato: Nativism, or the idea that certain kinds of knowledge are inborn or innate. (Nature vs. Nurture debate originated from this idea, we are born with knowledge)

Aristotle: Philosophical empiricism, belief that experiences in world shapes the way humans know about the world, nurture side of debate.

Rene Descartes: Dualism, or the idea that the mind and body are separate entities that interact. The mind contains the soul, and it can control the brain and body.

Psychology as a separate discipline, father of Psychology is Wilhelm Wundt. He wrote the first Psychology textbooks and established the first Psychology research laboratory at the University of Leipzig, Germany (1879).

Edward Titchener coined Structuralism held that complex conscious experiences could be broken down into elemental parts or structures. (Ex. when you hear sound not interested in what sound it was, more interested in how loud it was and if everyone heard it the same way, etc.)

William James- Rather than Structuralism, focus on functionalism (Influenced by Darwin and his adaptation perspectives) he focused on how behaviors function to allow people and animals adapt to their environment. Questioned the functions of behavior and mental experiences, how can psychology be applied to life?

Psychoanalysis (Sigmund Freud), Developed Psychoanalytic Theory, people are heavily influenced by the unconscious mind that people are unaware of, and it manifests in people's thoughts feelings and behaviors.

He was the first clinical Psychologist, and used Psychology for therepeautical reasons.

Behaviorism: Psychology redefined as the scientific study of observable behavior (Not the mental processes or the mind, all we people can see is observe the behavior)

Ivan Pavolov: Discovered conditioned reflexes. Worked mainly with dogs.

John Watson: Extended the research to humans.

B.F. Skinner: More experiments on behavior, learning and conditioning.

Humanistic Psychology: Increasing the idea of positive potential, positive self concept and self esteem. Importance of choice.

Carol Rogers- Focus on how people can be happier, positive psychology.

Abraham Maslow- Establishing hierarchy of needs, look at someone and see how to reach optimal potential of people. See what people need the most and what people need least to be happy.

Cognitive Psychology: The Scientific study of how perception, thought, memory, and reasoning are processed. Brought the mind back to Psychology that we can understand basic reasoning and memory and processes in brain without observable actions. Saw the brain activity with neuroscience. Counters dualism.

Biological Psychology

Brain Chemistry/neurotransmission: The discovery of neurotransmitters and neurons in the early 1900s --> Neuropsychopharmacology, understanding how drugs affect people's brains

The human genome: contains about 25,000 genes

Neuroscience: techniques that records brain activity, neuroimaging techniques.

Current fields in psychology:

Developmental:

Social: Study of Larger group psychology

Personality

Evolutionary: Functionalism

Industrial/Organizational: Helping worker activity

Clinical

Psychologist: Gives advice and thinks about problems and diagnoses people

Psychiatrist: Have M.D, and can prescribe medicine to patients

Steps of conducting research: Getting ideas --> Forming Hypotheses --> Choosing a Research Design --> Choosing subjects and measures --> Analyzing Data -> Reporting Results --> Replication of process

RESEARCH DESIGNS

-Descriptive studies, two major types.

1. Field studies --> Naturalistic observation, watching and recording the behavior in the organisms' natural environment.

2. Case Studies --> INTENSIVE study of a single individual --> Individual cases can mislead, a data point of $n=1$ is not ideal scientific evidence. Personal experiences can be outliers.

-Self report/survey studies

1. Surveys and Questionnaires --> Can tell us people's attitudes, opinions, demographics, etc.

-Correlational studies

1. Determines an association between two variables --> The statistical measure of the relationship between two variables is called the correlation coefficient (r) if r is closer to 1, indicates STRONG CORRELATION. Closer to 0 indicates NO CORRELATION.

2. CORRELATION DOES NOT EQUAL CAUSATION

3. The more strongly correlated two variables are, the more one variable predicts the other.

-Experimental studies (It detects cause-effect relationships)

1. Independent Variable --> Presumed cause, Manipulated between control and experimental group.

2. Dependent Variable --> Presumed effect, The outcome of interest measure.

3. Differences in the dependent variable(s) are thought to be caused by the independent variable.

4. TERMS:

Operational Definition --> Clear-cut explanation of what your variables are and how you are measuring them.

Experimental Group vs. Control Group --> Experimental Group is exposed to conditions of the experiment and control group is separated.

Random assignment --> One of the only ways to control third-variables, randomly assign samples.

Confounding variables --> Anything we haven't taken into account that could impact our results.

5. Experiments aim to manipulate an independent variable, measure changes in the dependent variable, and control (minimize the possible effects of) all other variables.

6. Random assignment works to equate the experimental and control groups by minimizing preexisting differences between those assigned groups.

GENES, ENVIRONMENTS, AND BEHAVIOR

-Genes make protein

-Approximately 20,000-25,000 genes in our genome, only 2% of our entire genome

-A sequence of 3 adjacent nucleotides called codon codes for a particular amino acid → protein building block

-These amino acids formed get chained together to form a particular protein.

-Mutations → Gene replication can create mistakes (can be heritable) → can be advantageous or disadvantageous

-STUDY FOXP2

-Huntington's disease