

What is Psychology? (change, describe, explain behavior)

- Psychology is a science (a way of thinking) of behavior, by discovering its causes to explain the behavior, especially understand human behavior: why people do what they do - ultimate goal of research in psychology (why human behavior: root of most problems in the world, curiosity).
- How to explain behavior:
 - Describing behavior: categorizing and measuring
 - Identify the causes of behavior: causal events
 - Different levels of explanations: choice of causes to study
- Different branches:
 - Physiological psychology: examine physiology of behavior. The organism's physiology, especially its nervous system (learning, memory, sensory processes) - always in non-human animals
 - Comparative psychology: behavior in variety of species in an attempt to explain behaviors in terms of evolutionary adaptation to the environment - study inherited behavioral patterns: mating, aggression (similar as physiology psychology)
 - Behavior analysis: the effect of the environmental events on behavior (learning and motivation) - relationship between the behavior and some consequent event
 - Behavior genetics: the role of genetics in behavior
 - Cognitive psychology: mental processes and complex behavior such as perception, attention, learning.. (function of the human brain that occur in response to environmental events)
 - Cognitive neuroscience: to discover the particular brain mechanisms responsible for cognitive processes (same phenomena studied by cognitive psychologist)
 - Developmental psychology: physical, cognitive, emotional and social development of children (the effect of aging)
 - Social psychology: the effects of people on people
 - Personality psychology: individual differences in temperament and patterns of behavior (look for causal events in a person's history, both genetic and environmental)
 - Evolutionary psychology: cognitive, social by looking at their adaptive significance during the evolution of modern species (natural selection as the guiding principal)
 - Cross-cultural psychology: impact of culture on behavior
 - Clinical psychology: psychological behavior and problems of adjustment

The growth of psychology (philosophy<define the different category> - psychology)

- Philosophical roots (ask questions about mind), but no scientific way to study problems
 - Animism: all animals and all moving objects possess spirits (minds) providing their motive force, behavior was controlled by environmental stimuli
 - **Rene Descartes**: French philosopher and mathematician - led modern philosopher psychology
 - World is a purely mechanical entity - no divine interference

- Reflex: automatically reaction, involuntary
- Dualism: reality can be divided into mind and matter, but also can interact
- Mind control the movement and body supply mind through the sense of organs, supplied the mind with information about what was happening in the environment.
- Human apart from the rest of the world was their possession of a mind
- Rationalism: pursuit the truth through reason
- John Locke: English philosopher
 - Empiricism: pursuit the truth through observation and experience (Experience)
 - All knowledge come through experience
- George Berkeley
 - Our knowledge also requires inferences based on the accumulation of past experience
- James Mill
 - Materialism: reality can be known only through an understanding of the physical world, of which the mind is a part (mind, implies doctrine of determinism)
- Biological roots
 - Luigi Galvani
 - Muscles could be made to contract by applying an electrical current directly to them or to the nerves attached to them
 - Johannes Muller: emerging biological knowledge shaped the evolution of psychology
 - Doctrine of specific nerve energies: basic message sent along all nerves was the same - electrical impulse
 - Assumption: Recognize particular sensory input by particular nerve - specialized - different functions
 - Pierre Flourens
 - Experimental ablation: the removal or destruction of a portion of the brain
 - Brain control
 - Gustav Fritsch & Edward Hitzing
 - Electrical stimulation: mapping the functions of the brain
 - Hermann Von Helmholtz
 - Mental phenomena could be explained by physiological means
 - Neural conduction was not instantaneous
 - Ernst Weber: led to the development of a method for measuring the magnitude of human sensations
- Determinism: behavior is the result of prior events (outcome will follow some cause)
- Child education (John Dewey): must match the way in which children's abilities develop
- Law of effect (Edward Thorndike, behaviorism): comfort - recurred more / discomfort - recurred less
- Major trends
- Structuralism (the structure of the mind, ideas and sensations, focus on introspective analysis of sensation and perception)

- **Wilhelm Wundt**: first laboratory of experimental psychology 1879
 - The basic elements of the mind - introspection
 - First psychology textbook: principles of physiological psychology
 - German is the birthplace of psychology
 - Introspection: Look within. Structure of the mind built from the elements of consciousness
- James Baldwin: first of the modern psychologists in Canadian university
- The reason of structuralism manded is because the investigation shifted from the study of the mind to the study of behavior
- Functionalism: process of conscious activity (**perceiving and learning**)
 - Charles Darwin: the origin of species by means of natural selection 1859
 - Behavior could be explained by understanding their role in the adaptation of an organism to its environment
 - **William James**: American scholar (founder of American functionalism)
 - James Angell
 - Functional psychology is the study of mental operations and not mental structures
 - Mental processes are not studied as isolated and independent events
 - Studies the relation between the environment and the response of the organism to the environment
 - Edward Titchener
 - Chief proponent of structuralism.
 - Used introspection to tap human consciousness.
 - Had troubles with verification of data and replicability.
- Sigmund Freud: psychodynamic theory (psychoanalytic theory)
 - Human behavior would greatly affect psychology and psychiatry and radically influence intellectuals of all kinds
 - Focused on unconscious thoughts in determining behavior.
 - Get the result through talking with patients, not laboratory experiments
 - **Emphasize function**. His mental structures served biological drives and instincts and reflected our animal nature
- Ebbinghaus:
 - Devised the first experiments to study memory
 - Used lists of nonsense syllables to objectively measure how long it took to learn things and how long memory lasted.
 - Set the standard or rigorous, systematic approach to psychological issues
- Psychoanalytic perspective (20th century)
- Psychodynamic theory
 - Sigmund Freud: mental structure served biological drives and instincts and reflected our animal nature
- Behaviorism (USA, nurture, educate)

- Study between people's environment and their behavior, without appeal to hypothetical events occurring within their heads
- Edward Thorndike: Law of effect (comfort - recurred more / discomfort - recurred less)
- Ivan Pavlov:
 - Hungry dogs would salivate at the sight of the attendant who brought in their dishes of food (dog would salivate at completely arbitrary stimuli)
 - First describe classical conditioning. Showed that reflexes could be learned (changed by experience).
 - Showed that organisms learn cause and effect relationships in the environment.
- John B. Watson: (founder)
 - Formal school of psychology: psychology from the standpoint of a behaviorist
 - Psychology was restricted to observable events: the behavior of organisms - structuralism is too subjective
 - Strongest empiricist
- B.F. Skinner: Extended behaviorism, examined the effects of reinforcement on behavior. Consequence of behavior
- Humanistic psychology
 - Emphasize human experience, choice and creativity, self realization and positive growth
 - Emphasize the **positive sides of human nature**
 - Don't believe we will understand human consciousness and behavior through scientific research
 - Maslow's self-actualization
 - Rogers' client-centered therapy
- Modern views (approach problems from multiple perspectives, believes behaviors have multiple causes)
 - Reaction against behaviorism: the emphasize of cognition
 - Emphasize how unobservable factors influence larger patterns of human consciousness
 - Max Wertheimer
 - Gestalt psychology (unified forms)
 - Attempted to discover the organization of cognitive processes, instead of the elements
 - Considered the whole greater than the sum of its parts. Suggested perception was more than the individual sensations involved.
 - Cognitive psychology:
 - Information processing (what goes in and out): information received through the senses is processed by systems of neurons in the brain (human unique)
 - Piaget's stages of development
 - Bruner's concept formation
 - Reaction against behaviorism: the emphasis on neurobiology

- Donald Hebb: behavioral and mental phenomena could be related directly to brain activity
- Neuroscience
 - Animal models
 - Psychopharmacology
 - Brain imaging
- Recent popularity due to technological advances
- Biological foundations of Schizophrenia, Autism, Alzheimer's Disease etc

Clicker question

- If we understood everything about the brain would we understand the mind?
 - No (don't have the tools to know everything about the brain)