

Introduction & Research Method

PY211: General Psychology



The Earliest Evidence of Psychology

- Aristotle (384 – 322 BC)'s idea of the nature of life

“You’ll understand what life is if you think about the act of dying. When I die, how will I be different from the way I am right now? In the first moments after death, my body will be scarcely different in physical terms than it was in the last seconds of life, but I will no longer move, no longer sense, nor speak, nor feel, nor care. It’s these things that are life. At that moment, the **psyche** takes flight in the last breath.”

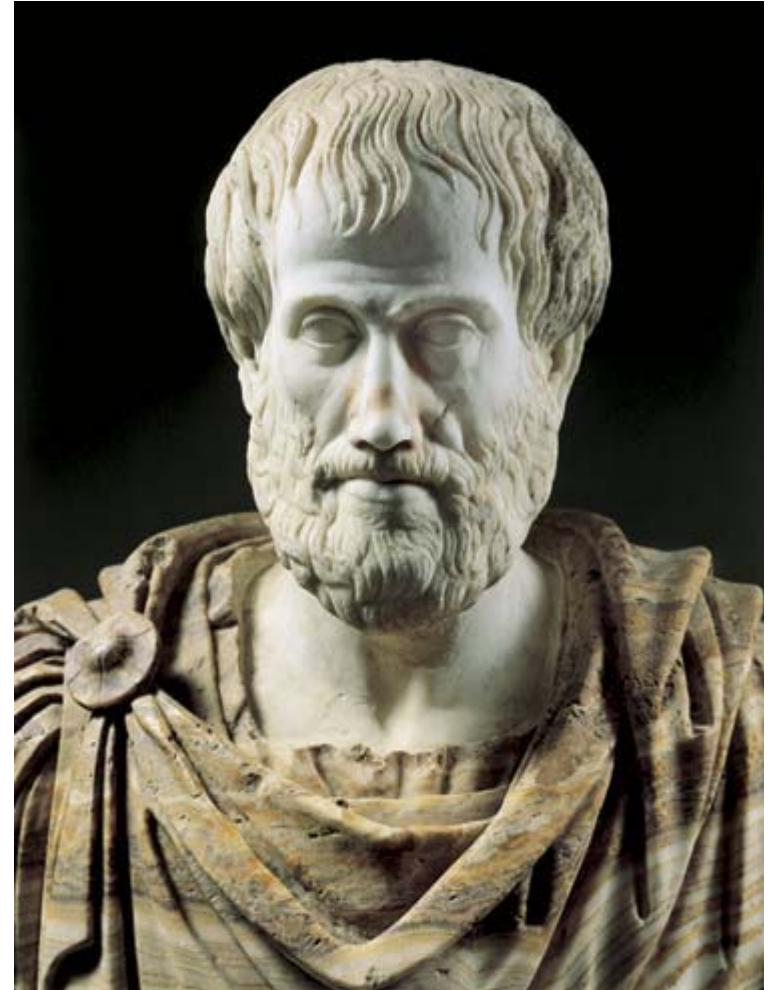
Aristotle

- Psyche = mind
- Logos = the study of

Psyche + Logos = Psychology

Psyche + Science = Psychology

**** Aristotle strongly emphasized on the importance of **observation**.**



What is Psychology today?

- General understanding: “The study of life”
- More specific: “The science of behavior and mental processes” (Lahey, 2009)

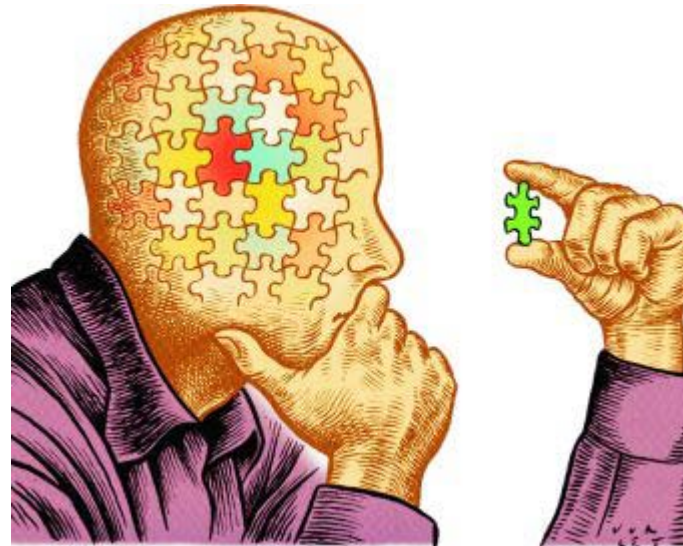
Science: Systematic method of observing human behavior and draw conclusion.

Behavior: Every overt actions.

Mental Processes: Every covert actions.

What is Psychology today?

- The integration between Philosophy, Biology and Physiology.
- Psychologists and Scientists, the similarity is they both are **critical thinkers**.



Roots: Early Approaches



- Rene Descartes (1596 – 1650) believed that the mind and the body were completely separate. However, Descartes focused his attention on the mind.
- Psychology emerged from this idea.

Roots: Early Approaches



Hearing

Response

- Wilhelm Wundt (1832 – 1920) was considered the founding father of modern psychology.
- The significance: the mental processes could be studied quantitatively.

Structuralism

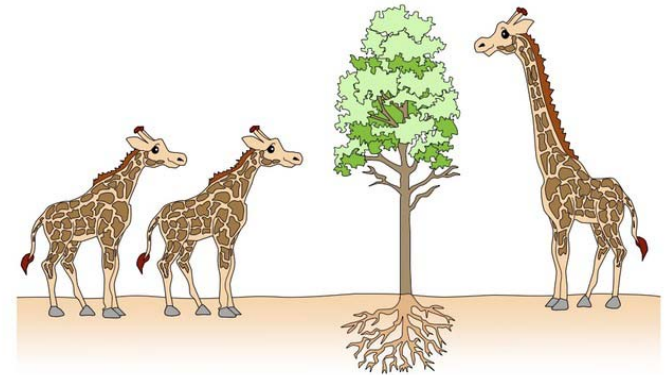
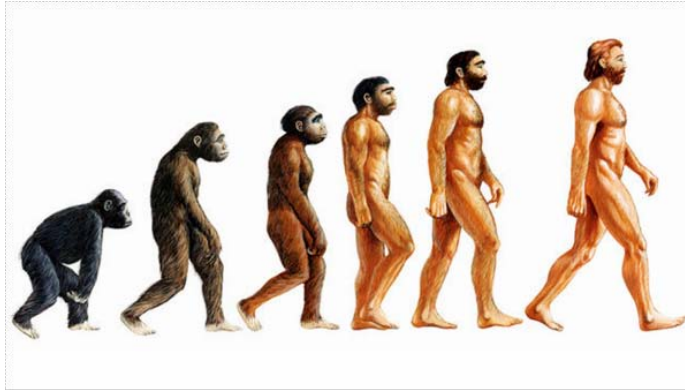
- Based on the experiment of Wilhelm Wundt.
- The study of structures of mental processes.
- Focused mainly on sensation and perception.
- The scientific method for Structuralism is introspection (“looking inside”), which is systematic self-reports.

Functionalism

- Based on the idea of William James’s interest in the school of pragmatism.
- The study of how the purposes or functions of the mind.
- The influence of Charles Darwin’s theory of Evolutionary.
- The mind is a “stream of consciousness” (like fluid and flexible, able to adaptation).

Roots: Early Approaches

Theory of Evolutionary



- Charles Darwin's *On the Origin of Species*.
- The natural selection.
- It emphasizes the survival function of characteristics, which suits well with the idea of Functionalism.

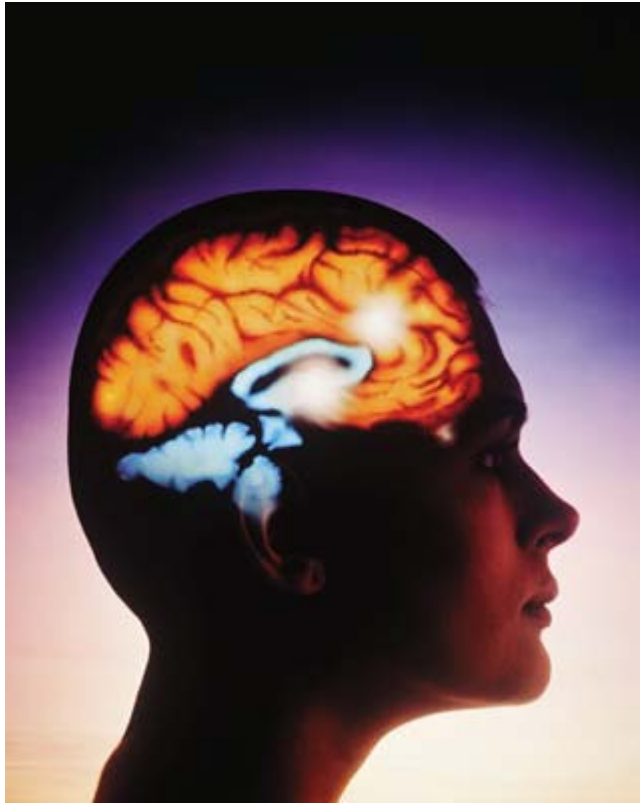
Contemporary Approaches

“If the structuralism won the battle to be the birthplace of psychology, it is safe to say that functionalism won the war.”

King,(2008)

- Seven mainstreams today: biology, behavioral, psychodynamic, humanistic, cognitive, and sociocultural.

Biological Approach



- Focus on the brain and nervous system.
- Neuroscience, physiological psychology, is the largest contribution to the field.
- It emphasizes on the brain and nervous system as a central to understanding overt and covert behavior.

Behavioral Approach



- Believing that people do things, not because inborn motivation, but rather the environmental conditions.
- It focuses on the interaction between environmental determinants and overt behavior.

Psychodynamic Approach



- The origin came from Freud's clinical experience.
- It emphasizes unconscious thought, the conflict between instincts and society's demands, and early family experiences as the causes of human's personality.

Humanistic Approach



- Believe in the idea the people have ability to control their lives and avoid being manipulated by the environment.
- It emphasizes on human's positive qualities, and is foundation for positive psychology.

Positive Approach



- The study of full range of human experience.
- It emphasizes on the people value that associates with optimal capacities.
- The idea of broken watch.

Cognitive Approach



- It focus on the mental process of perceiving, processing and conceptualization.
- It emphasizes on the “how”.
- Believing that the mind is an active and aware problem-solving system.

Sociocultural Approach



- It focuses on cultural differences.
- The study of the way social and cultural environment influence behavior.
- Why some behavior is culturally accepted in one culture but not in another?

Evolutionary Approach



- Charles Darwin's survival of the fittest as the basis for explaining specific human behaviors.
- The approach uses evolutionary ideas such as adaptation and reproduction to explain human decision making and behaviors.

Areas of Specialization

- Physiological Psychology and Behavioral Neuroscience
- Developmental Psychology
- Sensation and Perception
- Cognitive Psychology
- Health Psychology
- Learning
- Motivation and Emotion
- Personality Psychology
- Social Psychology
- Industrial and Organizational Psychology
- Clinical and Counseling Psychology

Areas of Specialization

- Community Psychology
- School and Educational Psychology
- Environmental Psychology
- Psychology of Women
- Forensic Psychology
- Terrorism Psychology
- Sport Psychology
- Cross-Cultural Psychology
- Social Psychology
- Artificial Intelligence and Cognitive Psychology
- Environmental Psychology

Research Method

- What does scientific approach look like?
 - Curiosity → wanting to know more about the particular claims.
 - Skepticism → questions the validity of particular claim by calling for evidence to prove or disprove it.
 - Objectivity → applying empirical method (observation with logical reasoning).
 - Critical Thinking → Think like scientists.

Research Method

- What make scientific approach unique ?
 - Science is collaborative effort.
 - The process of peer review
 - Academic journal
 - Conference forum
 - Meta-analysis

Steps in Scientific Method

1. Observing some phenomenon.
2. Formulating hypotheses and predictions.
3. Testing through empirical research.
4. Drawing conclusions.
5. Evaluating conclusions.

***Scientific Method starts at “Theory”.

***What is Theory?

Theory is a broad idea/set of related ideas trying to explain certain phenomenon.

Observing some phenomenon

- The phenomena in scientific methods called “variables”.
- Variables are anything that possesses the **changing qualities**.

Variables	Characteristics
Independent	The conditions that have been manipulated.
Dependent	The response caused by independent variables.
Controlled	The environmental and normal conditions.

Observing Some Phenomenon

- Operational Definition

→ An objective description of how a research variable is going to be measured and observed.



Formulating Hypotheses and Predictions

- Hypotheses

- An initial/proposed idea in order to explain the studied phenomenon.

- A first step assumption (prediction) that can be tested.

***Hypotheses derived through **theory**.

Testing through empirical research

- **Testing hypotheses by collecting data.**
 - Population → the entire group of interested people/animals that investigators want to find the results from.
 - Sample → subset of population.
 - Random sample → samples that are randomly scientific selected as a representative of the population.
- **Analyzing data.**
 - Data refers to all the information researchers collect in a study.
 - Draw conclusion.

Drawing conclusions

- Based on the data analysis.
- Reliability
 - The extent to which scientific research yields a consistent, reproducible result.

Evaluating Results

- The published are there for all to see, read, and evaluate **continuously**.

Laboratory setting

- A controlled setting with many of the complex factors of the real world removed.



Natural setting

- Observing in the real world settings.



Research settings

Descriptive

- Cannot explain the causal relationship.
- Tells about important **details of observed behaviors** or phenomena.
- Uses research method of observation, surveys, interviews, standardized tests, and case studies.

Correlational

- Describes how variables **change together**.
- Types of correlations.
 - Positive: vary in same direction.
 - Negative: vary in diverse direction.
- Third variable problem: confounding (extraneous variable).
- Longitudinal design to see the further direction of the correlation.

Types of Research

Experimental research

- Random assignment

: assign to participants by equal chance.

- Independent and dependent variables

- Experimental and control groups

: a group with manipulated experience vs. normal conditions

- Validity (ecological and internal validity)

- Experimental bias

: experiments' own expectation.

- Research participant bias

: participants' own expectation.

- Placebo effect

: occur when participants' expectations produce an experimental outcome.

- Double-blind experiment

: enclosure participants from realizing which experimental groups they participate.

Types of Research

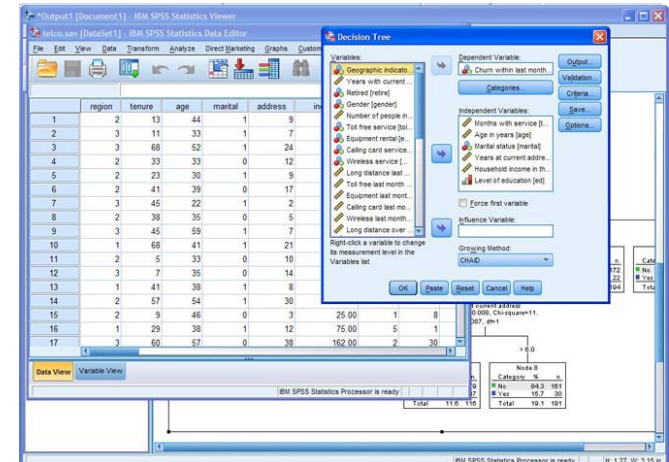
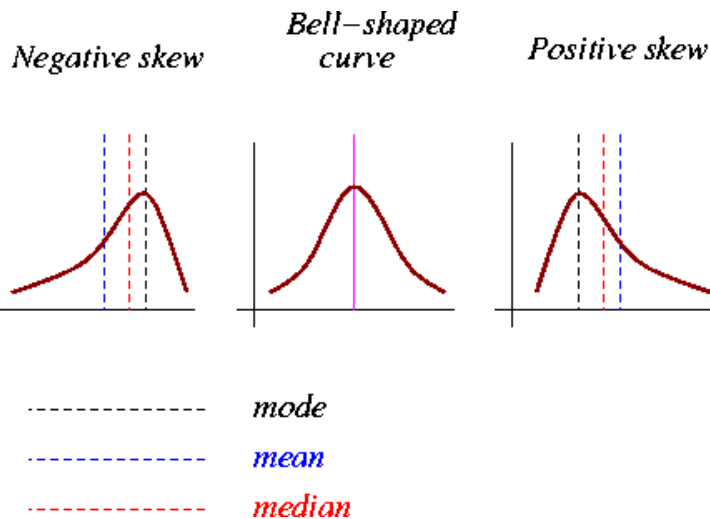
Analyzing and Interpreting Data

- Descriptive statistics

- Measures of central tendency (Mean, Median, Mode)
- Measures of dispersion (Range, Standard deviation)

- Inferential statistics

- Provide statements of probability
- Level of statistical significance



Human participants

- Freedom from coercion
- Informed consent
- Limited deception
- Adequate debriefing
- Confidentiality

Nonhuman animals

- Necessity
- Health
- Humane treatment

Ethical principle of research

How to be a successful informational receiver in psychology

- Distinguish between group results and individual needs
- Avoid overgeneralizing from a small sample
- Look for answers beyond a single study
- Avoid attributing causes where none have been found
- Consider the source of psychological information