

### What is Psychology

|                    |   |
|--------------------|---|
| Psycho-<br>logy:   | The study of mental and<br>behavioural processes                                      |
| theory-<br>driven: | uses theories to explain<br>behaviour   |
| empirical:         | based on research   |
| multi-<br>level:   | explained by the brain, the<br>individual, and the group                              |
| context-<br>tual:  | psychological perspectives<br>continue to evolve, which<br>impacts work in psychology |

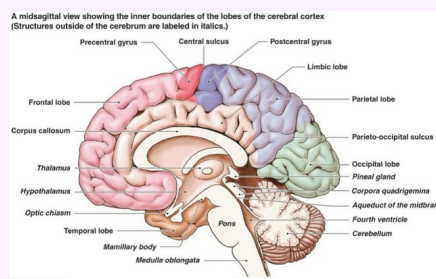
### Theories

|                          |                                     |   |
|--------------------------|-------------------------------------|---|
| Struct-<br>uralism       | Founded<br>by<br>Wilhelm<br>Wundt   | Focus on human<br>cognitive behaviour                       |
| Func-<br>tionalism       | Founded<br>by<br>William<br>James   | Focus on function of<br>behaviours                          |
| Psycho-<br>ana-<br>lysis | Founded<br>by<br>Sigmund<br>Freud   | Focuses on the<br>study on the human<br>mind (subconscious) |
| Behavi-<br>ourism        | Founding<br>by John<br>B.<br>Watson | Focus on the<br>concept of<br>observable<br>behaviour       |

### Wilhelm Wundt (1832-1920)

- Father of **experimental** psychology
- Established the **first psychology lab** in 1879 Germany
- Used **empirically-driven** experiments
- Studied **consciousness**
- **Voluntarism** behaviours are motivated
- Developed **structuralism**

### Labeled brain



Brainstem (Medulla) = breathing & heartbeat  
 Reticular formation = arousal, sleep, filters stimuli  
 Cerebellum = voluntary movement  
 limbic system (Hippo HAT)  
 - HIPPOcampus = memory  
 - Hypothalamus = hunger, thirst, sexual behavior  
 - - pituitary gland = hormones  
 - Amygdala = fear, anger  
 - Thalamus = touch, taste, sight, hear

### William James (1842-1910)

- Established the first psychology lab in America at Harvard University
- Wrote the first psychology textbook "Principles of Psychology" (1890)
- **Functionalism** sees consciousness as a fluid stream rather than fixed elements, uses empirical methods that focuses on the cause and effects of behaviour

Emphasis was also - placed on studying animals, children, and individuals with mental disorders

### Experiment Terms

|                              |  |
|------------------------------|--|
| Indepe-<br>ndent<br>variable | variable that is being manipu-<br>lated                                    |
| Dependent<br>variable        | variable that is being<br>measured/ changed by the<br>independent variable |

### Experiment Terms (cont)

|  |  |
|--|--|
| Operation-<br>alize/Ope-<br>rational<br>definition | how researchers decide to<br>measure our variables   |
| Population   | The entire group that is of<br>interest to researchers   |
| Sample   | A portion of the population<br>that is selected for the study,<br>Must represent the<br>population |
| Random<br>selection                                | everyone in the population of<br>interest has an equal chance<br>of selection                      |
| Sampling<br>bias                                   | selecting a group that is likely<br>to confirm your hypothesis                                     |

### Therapy

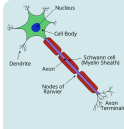
|                                    |   |
|------------------------------------|---|
| Counterco-<br>nditioning           | Conditioning a new response<br>incompatible with old                          |
| Systematic<br>desensiti-<br>zation | Relaxation replaces anxiety<br>or systematically                              |
| Flooding                           | Go straight into the fearful<br>situation. CR is extinguished                 |
| Aversive<br>condi-<br>tioning      | Unpleasant response<br>associated (alcohol + drug<br>creating nausea UR & PR) |



### Therapy (cont)

|               |  |
|---------------|--|
| Token economy | Given token (poker chip) when desired behaviour preformed. Tokens cashed on for tangible rewards |
|---------------|--|

### Nerves



**OVERVIEW OF THE NERVOUS SYSTEM AND THE NEURON**

While there are two main learning targets in this section of the unit, they encompass a vast amount of information. The good news is that most of us have covered these topics in other coursework, such as Biology or Anatomy and Physiology.

First, be prepared to describe the nervous system, the subdivisions, and the functions of the components of each of these.

**NEURAL FIRING**

Be able to explain the basic process of transmission of a signal within and between neurons. There are three phases of communication within a neuron. The first is **action potential**, the impulse when a neuron fires. There is a brief **refractory period** when the neuron is recharging, followed by the **resting potential**, when the recharged neuron is awaiting the next action potential to be generated. Review how sodium and potassium help alter the transmission.

Next, identify the basic processes and interaction of systems that are the foundations of the biological basis of behavior. In other words, you know the "parts," and the main purpose. How does that "part" impact our behavior, both when it is functioning properly, and otherwise? Although dysfunction will be delved into more intensively in later units, it is still an important aspect to recognize here. This can be key if the free-response question (FRQ) requires you to explain the biological reason that a behavior, or disorder, could be occurring.

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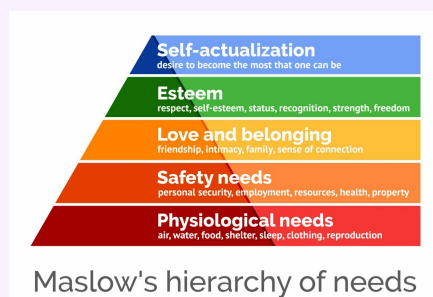
### Therapy

|                            |  |
|----------------------------|--|
| Counterconditioning        | Conditioning a new response incompatible with old  |
| Systematic desensitization | Relaxation replaces anxiety or systematically  |
| Flooding                   | Go straight into the fearful situation. CR is extinguished                                       |
| Aversive conditioning      | Unpleasant response associated (alcohol + drug creating nausea UR & PR)                          |
| Token economy              | Given token (poker chip) when desired behaviour preformed. Tokens cashed on for tangible rewards |

### The Goals of Psychology

- Describe
- Explain
- Predict
- Control

### Maslows Hierarchy of Needs



### Research Methods

**independent variable** = cause

**experimental group** = exposed to cause

**control group** = not exposed to cause

**dependent variable** = effect (measures how subjects behave)

**blind study** = subjects don't know if they get drug or placebo

**double-blind study** = subjects & researchers don't know who gets drug/placebo

**correlation coefficient** = describes strength of relationship

### Nature V.S Nurture

|                |   |
|----------------|---|
| <b>Nature</b>  | Genetics determine our behaviour                            |
| <b>Nurture</b> | Our environment and life upbringing determine our behaviour |

### Limbic System

|              |  |
|--------------|--|
| Hippocampus  | (campus = learning/memories)           |
| Hypothalamus | (FFFF = Fight, Flight, Feed, Mating)   |
| Amygdala     | (emotions)                             |
| Thalamus     | (Tell 'em = senses (except for smell)) |

### Memory Terms

|                   |   |
|-------------------|---|
| Recall            | A measure of memory in which the person must retrieve information learned earlier (fill in blank)     |
| Recognition       | A measure of memory in which the person need only identify items previously learned (multiple choice) |
| Relearning        | A measure of memory that assesses the amount of time saved when learning material for a second time   |
| Explicit memory   | memory of facts and experiences that one can consciously know and "declare"                           |
| Implicit memory   | retention independent of conscious recollection   |
| Procedural memory | the gradual acquisition of skills as a result of practice, or "knowing how" to do things              |
| Eposodic memory   | Memory of personal experiences (most common impairment)   |



### Branches of Psychology

|                                     |  |
|-------------------------------------|--|
| Clinical counselling and psychology | Therapists   |
| Academic psychology                 | Professors, researchers  |
| Applied psychology                  | Work in schools, marketing firms, research institutions, and so forth, applying psychological skills to real-life situations |

### Sensory Memory

|                        |  |
|------------------------|--|
| Implicit (procedural)  | being aware of how to do something without consciously knowing how |
| Explicit (declarative) | being aware of what you know                                       |
| Ionic                  | Brief photographic memory of an image                              |
| Echoic                 | brief memory of an auditory stimulus                               |
| Flashbulb              | vivid memories of emotionally charged events                       |
| Working                | short-term memory  |

### Psychological Disorders - Origins

|                 |  |
|-----------------|--|
| Medical         | caused by biological reasons (injury, genetics, drugs) |
| Psycho-analytic | childhood conflicts, unconscious, misdirected anger    |

### Psychological Disorders - Origins (cont)

|                  |   |
|------------------|---|
| Cognitive        | patterns of thinking are abnormal, success because of others (luck, generous), fail because of self (stupid, no talent)     |
| Learn/- Behavior | problem behavior is the problem, some type of classical conditioning or reinforcement has occurred for behavior to continue |

### Jean Piaget

#### Cognitive Development

**Sensorimotor stage** (0-2) can't differentiate self from environment

**Preoperational** (2) stable world, language, symbols, fantasy/reality, object permanence, no logical reasoning, lack conservation, egocentric

**Concrete op.** (7-11) logic rules, concrete, cause/effect, role taking

**formal op.** (12-) logic of science, abstract thinking, metaphors

**Assimilation** = interpret sights based on current understanding

**Accommodation** = changed understanding

**Equilibrium** = balance

**Disequilibrium** = changes in child's understanding of world

### Brain

|           |   |
|-----------|---|
| Frontal   | Responsible for: control thinking, planning, organizing, problem-solving, short-term memory and movement.                                 |
| Parietal  | Responsible for: interpret feeling, known as sensory information. The lobes process taste, texture and temperature.                       |
| Temporal  | Responsible for: process information from your senses of smell, taste and sound. They also play a role in memory storage.                 |
| Occipital | Responsible for: process images from your eyes and connect them to the images stored in your memory. This allows you to recognize images. |

### Lobes of the brain



### Edward Titchner (1867-1927)

- Introspection: careful, reflective and systematic observation of the details of **mental processes**

- **Structuralism** looks at the elements of consciousness, the goal was to describe observable mental processes rather than to explain, predict, or control

- The principle was rejected by other psychologists, but some elements survived:

- Psychologists should focus on observable events

### Edward Titchner (1867-1927) (cont)

- Scientific study should focus on simple elements as building blocks of complex experience

### Gestalt Psychology

- States that consciousness cannot be broken down into elements
- We perceive things as whole perceptual units
- The whole is greater than the sum of its parts

### Sigmund Freud (1856-1939)

- Believed that behavior was influenced by our unconscious desires and conflicts
- **Psychoanalysis** aims to resolve unconscious conflicts

### Important Psychologists

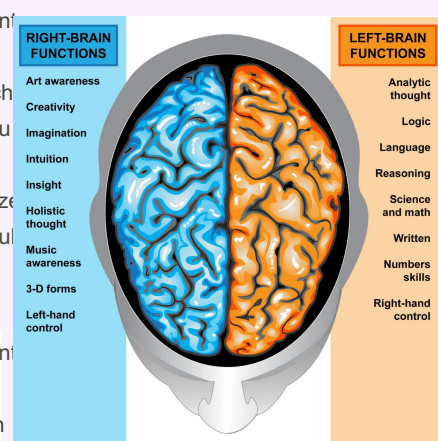
|                  |  |
|------------------|--|
| Edward Thorndike | believed that studying animals will help understand human behaviour  |
| Ivan Pavlov      | <b>classical conditioning</b> ; associating a stimuli to a response  |
| John B. Watson   | <b>"Little Albert Experiment,"</b> proving that people can be classically conditioned                                    |
| B.K. Skinner     | <b>operant conditioning</b> ; positive/-negative reinforcement to shape behaviour (increase/decrease certain behaviours) |
| Albert Bandura   | <b>social observation</b> ; observing and mirroring behaviour is a way of learning                                       |

### Descriptive research

| Case studies             | An intensive study of one person | Advantages: Helps develop early ideas about phenomena | Disadvantages: Research bias, You cannot generalize your results to all people |
|--------------------------|----------------------------------|---|--|
| Naturalistic Observation | observing natural behaviours     | Advantages: more reflective on actual human behaviour | Disadvantages: research bias, Hawthorne effect;                                |

| Surveys | questionnaire/interview | Advantages: Gather information that can be obtained from other methods, May be able to measure relationship strength between variables | Disadvantages: Research bias, Direction of relationship between variables is unknown |
|---------|-------------------------|--|--|
|---------|-------------------------|--|--|

### Left or Right Brain



### Freud - Psychosexual Stages

|                  |                     |
|------------------|---------------------|
| 1. Oral stage    | Ages 0-1            |
| 2. Anal stage    | Ages 2-3            |
| 3. Phallic stage | Ages 3-5            |
| 4. Latency stage | Ages 5 - puberty    |
| 5. Genital stage | Ages beyond puberty |

### Memory

| Sensory    | Fleeting awareness of what senses detect                 |
|------------|--|
| Short term | (working) keep information long enough to solve problems |
| Long term  | Unlimited storage  |