Behavioural Science

Week 1: Lecture 1: Unit Outline

Psychology: The study of behaviour and the mind.
Levels of Analysis (cause & effect - interactions)
Environmental level
- Behavioural
- Social

Biological level
- Molecular level
- Neurochemical level
- Neurological/Physiological

Psychological level
- Thoughts/ Cognition

Social desirability bias: Under-report behaviours you are not happy about and over-report behaviours you are happy about.

Correlational study: Assume cause and effect relationship eg: Those with small hands have lived longer... Although it could mean that those with small hands live longer (causation). It could mean something else: That women (usually have smaller hands than men) live longer than men.

Sensation & Perception are different in which 'context' influences our perception.
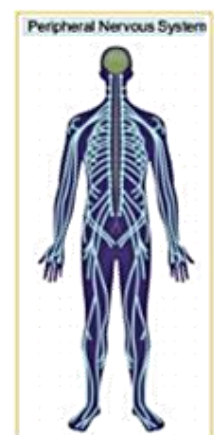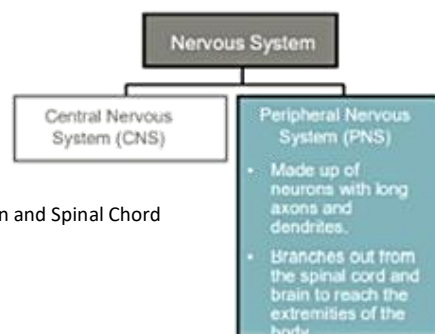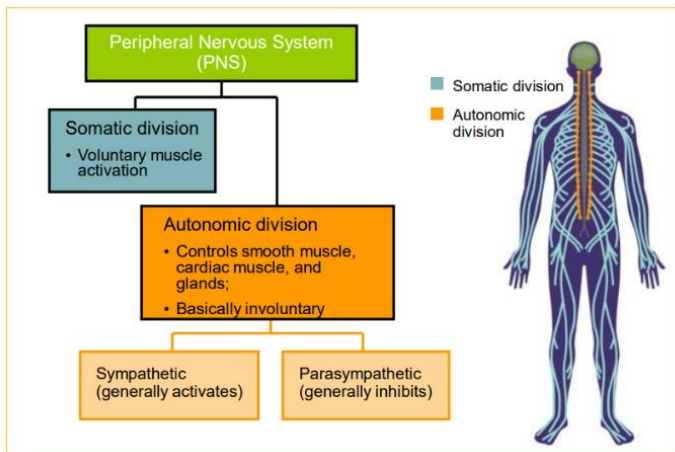
Nature vs. Nurture
Twin Studies: Identical (Monozygotic = 100% similar) and Fraternal (Dizygotic = 50% similar)

Adoption Studies:

Brain and Spinal Chord

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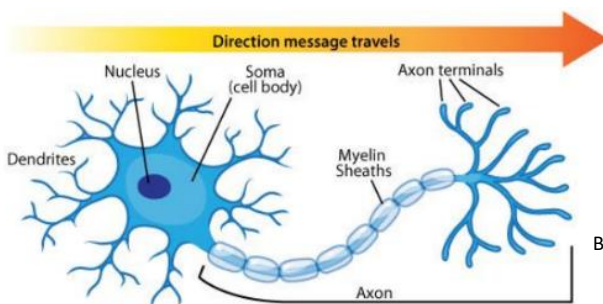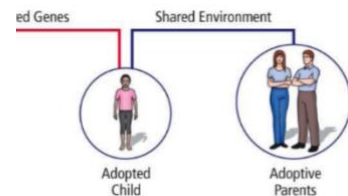
Homeostasis: -
Sympathetic system: Martin Sees a lion. His heart accelerates so that his muscles can tighten to react quickly.
Parasympathetic system: After Martin runs away and finds a safe spot. His heart rate goes back to baseline again.

Thinking
– Deductive (general to specific) reasoning.
Eg: You know that all dogs bark. Sam is a dog.

Therefore, Sam must bark.

– Inductive (specific to general) reasoning.
Eg: You see 50 Cats with brown eyes. Therefore, you assume that all cats must have brown eyes.

– Heuristics of thinking (taking short-cuts when making decisions) (quick but risky)

Week 2: Lecture 2: Research Methods

1) Ethics

Examples of unethical experiments:
EMOTION
1. Ax's (1953) study to compare the experience of fear and anger →Roughly placing dangerous electrodes on participants and criticising them.
2. Landis (1924) conducted a study to measure the facial reactions of participants → surprise by lighting fire cracker.
**CONDITIONED FEAR**
Watson & Raynor (1920) demonstrated a conditioned emotional response (fear) in 11-month-old Little Albert, an unsuspecting infant placed in Watson's care while his mother was at work.
OBEDIENCE
In 1963, Stanley Milgram created an experiment to see if participants would follow orders even when the requested behaviour went against their moral beliefs or good judgement.

Human Research Ethics
• Informed Consent: Includes purpose & procedure, potential risks & benefits, right to withdraw without penalty, confidentiality & safeguarding of privacy.
• Harm minimization (burden vs. benefit)
• Participants' rights – e.g., to leave the experiment at any time without penalty.
• Deception and debriefing: If possible participants should not be deceived
• Privacy
• Ethical Treatment of Animals (Benefits > Costs)
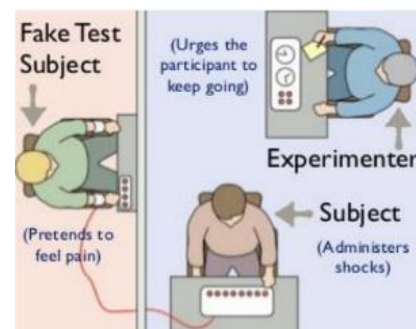
2) The Scientific Process

Step 1: <u>Identify</u> question of interest (testing a theory not simply gathering evidence to support a theory that you already believe in.)
Step 2: <u>Hypothesis</u> *"If…then…"* statement (Must research for background knowledge before you make a hypothesis) (Must also do pilot testing of the method to make sure it works)
Step 3: <u>Test</u> (Sample size consideration)
Step 4: <u>Analyse</u> data & reporting findings (graphs, tables, etc.)
Step 5: <u>Build</u> your knowledge around that particular topic.

3) Variables

Variable: Any factor that can vary.
Operational definition: defines a variable in terms of the specific procedures used to produce or *measure* it. E.g. Aggression

Independent variables: Manipulates/changes

Dependent variables: Measure

Example: False memories (Loftus, 1975)

Participants were shown 7 films of a road traffic accident and they were asked how fast the cars were when they smashed/bumped/collided
with each other. The word 'smashed' equalled higher speed estimations.

Measurement of variables

You need to have a pre-defined scoring system and it needs to make sense.

Internal validity: How confident I am of the cause and effect relationship (independent and dependent variables)

Internal validity represents the degree to which an experiment supports the clear causal conclusions

Threats to internal Validity
• Confounding variables
Confounding of variables means that two variables are intertwined such that we cannot determine which one has influenced a dependent variable. (when one of the controlled variables is not controlled) eg: Pepsi vs Coke Challenge → Labels on cup also vary

• Placebo effects

• Experimenter expectancy effects

• Replicating and generalised finding

4)   Sampling

The bigger the better. (increases confidence)