

Contents

Module 1 – Foundations of behaviour

Topic 1) Intro in Psychology

Topic 2) Heritability, Reflex, & Instinct

Topic 3) Affect and Motivation

Module 2 - Mind and Brain

Topic 4) Macro-neuroanatomy

Topic 5) Micro-neuroanatomy

Topic 6) Sensation and Perception

Module 3 - Adaptation to a Changing World

Topic 7) Learning

Topic 8) Memory and Attention

Topic 9) Intelligence

Topic 10) Language

Module 1 – Foundations of Behaviour

Intro to psychology

- **How would you best define “psychology”?**
 - The scientific study of human behaviour.
- **Define “behaviour” and provide some examples.**
 - Observable actions and responses to the environment. An example could be to study how material possession (a variable) affects a person’s willingness to partake in philanthropic actions (outward actions/responses).
- **Define “science” and “the scientific method.”**
 - A rigorous epistemological method for acquiring knowledge of the natural world based on empirical observation.
- **What is the difference between a behavioural psychologist and a cognitive psychologist?**
 - **Behavioural psychology:** focuses on observable behaviour and its relationship with environmental factors.
 - **Cognitive Psychology:** focuses on mental processes like thinking, attention, information processing, memory and so on.
- **What kinds of questions might a social psychologist attempt to answer?**
 - Concerned with how humans influence each other. Studies the effect of norms, culture, persuasion, conflict and expectation on behaviour. A question that social psychology may seek to answer is, for e.g. to what extent does group behaviour have an influence on individual’s autonomous decision making. Or how strong is the human propensity for conformity.
- **How can psychological principles be applied in the context of health?**
 - By understanding how to motivate individuals, programs could be put in place to encourage people to partake in health promoting behaviours such as exercise.
- **Explain what an educational psychologist tries to achieve.**
 - Educational psychology is concerned with factors that influence student learning, how to achieve the most out of educational experiences.
- **What is the domain of psychology which is concerned with differences between individuals?**
 - Personality psychologists are primarily concerned with individual differences between individuals, the stability of these differences and how that influences behaviour.
- **What are the terms for psychologists who specialise in workplace functioning?**
 - Organisational psychologist
- **What does a forensic Psychologist do?**
 - Forensic psychology is concerned with the relationship between the discipline and the justice system. Some of their work includes offering expert opinion on witness credibility, a defendant’s competence to stand trial, the prospects of rehabilitation of an offender etc.

Heritability, Reflex, & Instinct

- **Why are automatic responses important?**
 - They are unlearned survival promoting responses. Allow for immediate responses to situations where one’s safety is in danger, as a result an organism can be spared harm or even death. In terms of understanding human psychology, automatic responses are

considered foundational aspects of human behaviour uninfluenced by sociocultural complexities.

- **Define both “reflex” and “instinct” and explain the difference between the two.**
 - **Reflex** is a simple automatic and near instantaneous response to stimuli, e.g. removing one’s hand from a hot surface upon feeling the burn. Reflexes are controlled by the autonomic nervous system.
 - **Instincts** are innate tendencies to perform complex patterns of behaviour, e.g. a baby fowl’s predisposition to become attached and follow its mother after hatching, or a sea turtle’s ability to navigate out to sea after hatching without an adult.
 - **Differences:** both reflexes and instincts are unlearned behaviours, they differ however in that reflexes are simple and instantaneous whereas instincts describe an organism’s predisposition to perform behaviour that is more complex.
- **What is the Fight, Flight, Freeze response?**
 - Reflex responses whereby your body undergoes physiological changes (increased heart rate, secretion of adrenalin, tunnel focus, sweating etc.) before you even fully aware of the situation as your body prepares to fight or escape.
- **What is comparative psychology and how does it relate to human behaviour?**
 - The study of the behaviours across species, by having similar needs and sharing environmental conditions, learning about shared reflexes and behaviours between us and other species will deepen our understanding of our own behaviour and its purpose.
- **Explain what the Moro, diving, rooting, and the sucking reflexes are and why we might have them.**
 - **Moro reflex:** if the baby feels like it's dropping through space it will stretch out its arms, pull them back to their chest, and cry.
 - **Diving reflex:** is a set of physiological responses to immersion that overrides the basic homeostatic reflexes. It optimizes respiration by preferentially distributing oxygen stores to the heart and brain. Has a survival utility: keeps newborns from drowning on first accidental exposure to water while their parents try to retrieve them.
 - **Rooting reflex:** is when a baby turns to face something that brushes its cheek and starts to make sucking motions. Enables the baby to feed off its mother after it is born.
 - **Sucking reflex:** is where a child sucks on something that touches the roof of their mouth. Enables the baby to feed off its mother after it is born.
- **What does it mean to have a theory?**
 - is an explanation of observations, importantly, one that is consistent with all available observations. A **hypothesis** is the starting point on the path to theory development.

- **Explain the process of evolution via natural selection.**
 - The process whereby characteristics that offer a greater survival advantage remain in a species as the survivors that possess it pass it on to subsequent generations.
 - This naturally means that for evolution to affect a property, be that physical or behavioural, it needs 3 things:
 - (1). The property needs to be variable
 - (2). The property needs to be heritable
 - (3). There needs to be selection pressure for or against the feature (by the environment, or sexual partners etc.)
- **What is meant by “selection pressure”? Provide an example.**
 - Any cause that reduces reproductive/survival success in a portion of a population of a species exerts evolutionary pressure, i.e. a biased rate of survival. With sufficient pressure, inherited traits that mitigate the effects of the selection pressure—even if they would be deleterious in other circumstances—can become widely spread through a population. E.g. a sudden migration of a population to a unfamiliar climate, the individuals with more appropriate characteristics to withstand the new climate will become widely spread. The change in climate would be the selection pressure.
- **Why is evolution considered a “backwards-looking process”?**
 - The characteristics of a certain population reflects the adaptive advantage of the previous generations characteristics (phenotypes) to their environments, not necessarily conferring a survival advantage for the present generation.

Affect and Motivation

- **What are the three elements of emotions?**
 - *psychological activation*, or energy, that arises as an internal response to some *external factor* and elicits some behavioural responses and an *appraisal* of the experience. E.g. you see a friend you haven't seen in years (external factor/eliciting stimulus), you feel a rise in energy and smile (behaviour) as well as a feeling of positivity you would call happiness (appraisal).
 - **Three components of Emotion (ABC of Psychology):**
 - (1) **Affect:** Experiences of feelings or emotion – the conscious state that is elicited.
 - (2) **Behaviour:** Observable actions and responses to the environment – the follow through physical response.
 - (3) **Cognition:** Experiences of thought – the interpretation or appraisal of the event.
- **Explain the difference between expressive and instrumental behaviours, using examples of each.**
 - **Expressive Behaviour:** Expressive behaviours are those that signal what emotion we're feeling; frowning, smiling, eyes widening upon being cut off by a road user. They're explicit representations of our internal emotional state.

