

# PSYC105 Introduction to Psychology II

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- Psychology is the scientific study of behaviour- research is how we know things!
- “The first and most important step that anyone must take is understanding psychology is to realize that its defining feature is that it is the data-based scientific study of behaviour.”- Keith Stanovich, 2012
- research (and statistics) is all about Critical thinking

## **Pseudoscience**

- Claims that are presented as scientific, but are not scientific
- Often extraordinary claims
- Often over-reliance on testimonials, especially from inappropriate experts
- Often seeks to confirm, rather than falsify
- Avoids peer-review.

## **Research comes with Statistics!**

- Scientific method allows us to gain and build upon knowledge
- Statistics is important to allow us to generalise from samples of individuals to populations: collect data, test a hypothesis, and generalize to a population
- Allows us to account for (explain and understand) individual variation
- “Statistics is the science of learning from experience” – Bradley Efron, 2006

## **Developmental Psychology:**

- The study of human behaviour as a function of age.
- Developmental psychologists are interested in children and how they develop, how psychological processes change as a function of cognitive developmental, biological maturation, and social experience across the whole of the lifespan.

## **Social Psychology**

- The way our thoughts, feelings and behaviours are influenced by others.
- The ways in which people perceive others and the factors that influence this perception.
- The nature of attitudes, how they can be changed through persuasion, and discuss theories about the process of attitude change. Classic experimental social psychological research concerning the issues of conformity and obedience also will be described.

## **Perception**

- Understanding how the world is experienced by our senses, and relating this perceived or psychological world to the physical environment.
- Although human perception is an extraordinarily sophisticated faculty, our sensory/perceptual apparatus does not recreate the outside world with perfect fidelity. Instead, we experience various illusions that can help us to deduce the functioning of the system that lies within our brains. Dr Ian Stephen

## **Organisational Psychology**

- The study of human behaviour in the workplace. Organisational psychologists -- both researchers and practitioners -- affect numerous work practices, including job interviews, training programs, and performance appraisal systems.
- Also has implications for aspects of everyday life, not only at work (e.g., setting effective goals and managing occupational stress) but elsewhere (e.g., public health practices and airline safety).

A/Prof. Barbara Griffin, Prof. Mark Wiggins, Dr Ben Searle

## **Cognitive Psychology**

- How we get to know about the world, and how such information is represented and transformed as knowledge, how it is stored, and how that knowledge is used to direct our attention and behaviour.
- Cognitive psychology deals with a wide range of mental activities, from what appears to be basic and simple (e.g., detection of sensory signals) through to more complex mental activities (e.g., attention, pattern recognition, memory, concept formation, language processing, reasoning and thinking). Dr Kim Curby

## **Health Psychology**

- Individuals' experiences of stress, coping, health, and wellbeing.
- A range of health issues, ranging from the relatively benign daily stressors to the complex issues of functional somatic health disorders.
- Introduce the Bio psychosocial model of health and wellbeing, an integrative framework to understand the various contributors to individual health and disease, and we will discuss some of the more perplexing phenomena of health psychology, such as the placebo effect and the nocebo effect. Dr Alissa Beath

## What is Developmental Psychology?

- The study of human behaviour as a function of age
- “How and why we change”
- Change as a function of:
  - Physical maturation
  - Cognitive development
  - Social experience

### Change and Continuities

- **change:** systematic changes are orderly, patterned, and relatively enduring (e.g. crawling to walking, physical maturation at puberty)
  - **milestones**
- **Continuities:** refer to ways in which we remain the same or consistent over time (e.g. attachment from infancy to adulthood, temperament/personality).

### Areas of Study in Developmental Psychology

- Physical development:
  - Body changes
  - Motor skills
  - Puberty
  - Physical signs of ageing
- Cognitive development:
  - Perception
  - Language
  - Learning
  - Memory
  - Problem-solving
- Psychosocial development:
  - Personality
  - Emotions
  - Gender identity
  - Moral behaviour
  - Interpersonal skills
  - Role

## Developmental Theories

- Organise thinking
- Guide collection of new facts
- What is learned depends on which theories are dominant and which theories best account for the facts
- Impact of parent's theories: folk psychology
  - o Parental locus of control and efficacy
  - o Representations of the child
  - o Discipline approaches

## Some conceptual challenges

- Bidirectional Influences:
  - o Parent  $\leftrightarrow$  child (Transactional)
  - o Gene environment interactions e.g. evocative
- Cohort Effects- cross-sectional vs. longitudinal designs
  - o Technology competency and age
  - o SIDS prevention and motor development
- Early experience- critical and sensitive periods
  - o Early years CRUCIAL
  - o But can be an oversimplification- bonding example
  - o More applicable to biological aspects of development

### Early Experience: Sensitive Periods

- From Embryology
  - o "Teratogens" but **timing of exposure critical**
  - o e.g. facial anomalies in foetal alcohol spectrum disorder
- Empirical support?
  - o Neurological development -1<sup>st</sup> 3 years
    - Extensive Myelination
  - o Language development- early deprivation important
  - o Studies of Romanian orphans who were later adopted
    - Cognitive **impairments are related to timing, but also duration of deprivation**

### Sensitive periods- experience in the Womb

- Blastocyst- Embryo- foetus- baby
- When things go wrong:
  - o Genes, chromosomes
  - o Teratogens- smoking, alcohol, drugs, illness, stress
  - o Placental failure
  - o Premature birth

## Major theories of Development

- Psychoanalytic theory
  - o Freud and Erikson
- Cognitive developmental theory
  - o Piaget and Kohlberg
- Social Cognitive theory
  - o Early behaviourist theories through to Bandura's social cognitive theory.
- Ethological Theory:
  - o Attachment theories of Ainsworth and Bowlby

## Stage Theorists vs. Learning theorists

- Stage theorists: universality- common patterns
- Learning theorists- environment specific- different trajectories- individual differences

## Nature and Nurture

- universal genetically determined capacities for language, motor development
- But expression influenced by environment

## Example: Speech development

- Innate ability to learn a spoken language. But:
  - o Middle class USA cf Guatemalan kids
- Depends on interaction between inherited/innate characteristics and environmental experiences and demands.

## Example: Motor Development

- **Maturation:** unfolding of genetically programmed behaviour patterns BUT environment (childrearing customs) had an impact
  - o Swaddling
  - o Carrying on body
  - o "Baby" containers- seats, swings, floor
  - o Experience in prone –SIDS Prevention

## Key Theories of Cognitive Development

- Stage theorists:
  - o Piaget
  - o Erikson
  - o Kohlberg
- Piaget
  - o Constructivist theory
  - o Stages
  - o Classic discoveries- one example
- Vygotsky
  - o Social and cultural influences on learning
- Sense of self and theory of mind
  - o Classic discoveries- rouge/sticker
  - o False belief task

### Piaget's Stage theory

- Each stage of cognitive development
  - o A cognitive structure in a state of balance or equilibrium
  - o Derives from previous stage- incorporates, but transforms- radical re-organisations
  - o Follows invariant sequence
  - o Is universal

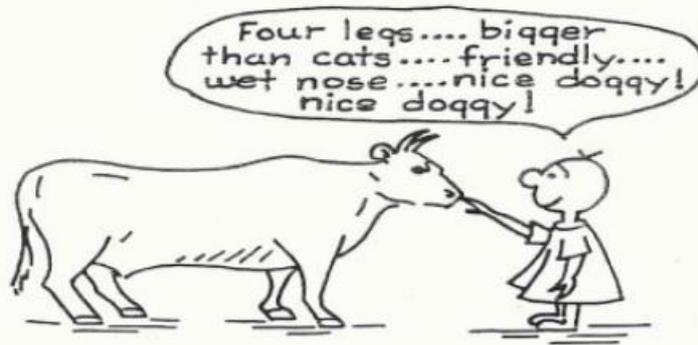
### Piaget's Theory of Cognitive Development

- Children's minds are not miniature versions of the adult mind- there are profound differences- qualitative as well as quantitative
- Active/ not passive- construct an understanding of the world.

### Developmental Progress

- Process- Equilibration- balance between our experience of the world and what we already know/think about it
  - o Assimilation- new information "Assimilated" into existing schemas
  - o Accommodation- Schemas updated to accommodate new information

## ASSIMILATION



- integrates and interprets new experiences in terms of existing schemes

## ACCOMMODATION



- modify or create new schemes in response to our experiences

## **Piaget: Four Main stages of intellectual growth:**

- Sensori-motor intelligence (birth-2 years)
  - o Object permanence
- Pre-operational Period (2-7 years)
  - o Mental representations, but pre-logical/egocentric, conservation a challenge
- Concrete Operations (7-11 years)
  - o Mental operations, but only for physical/concrete materials-e.g. add/subtract
- Formal Operations (11 years...)
  - o Hypothetical reasoning- mental operations on abstract concepts (E.g. algebra), hypothesize- e.g. Pendulum, seesaw
- AT EACH STAGE, CHILDREN THINK IN QUALITATIVELY DIFFERENT WAYS.

### **Object Permanence**

- Infants <8 months:
  - o Out of sight, out of mind- no effort to retrieve hidden object
- Infants- 9 months – 12 months
  - o Search- but
  - o Where last found- A not B effect- object does not exist independent child's action
- Infants 12-18 months
  - o Understand not only that objects continue to exist, but that they can be moved while out of sight- invisible displacements

### **Some Classic Piagetian discoveries about Young Children's thinking**

- Fundamental principles about the physical world
  - o Object permanence
  - o Conservation

### **Conservation: Pre-operational Phase:**

- The preoperational stage ranges from about ages 2 to 7 (Piaget, 1951, 1952). The child in this stage is pre (before) operations. This means the child cannot use logic or transform, combine or separate ideas.
- The child's development consists of building experiences about the world through adaptation and working towards the (concrete) stage when it can use logical thought. During the end of this stage children can mentally represent events and objects (the semiotic function), and engage in symbolic play.

## Strengths and Limitations of Piaget's theory

- strengths
  - Landmark theory- not just miniature adults
  - Learning as an active process- influences on education
  - Processes cross domains- e.g. conservation
- Critiques- more next year
  - Stages too rigid/prescriptive
  - under-estimated children's abilities
    - Methodological issues- task demands/language
- Universality
  - Western bias?
  - Many don't reach higher levels
  - Context not sufficiently considered

## Other Theoretical Approaches: Cognitive Development

- **Vygotsky- Sociocultural**
  - Learning collaborative- social contexts
  - Social – role of siblings, peers
    - Scaffolding
  - Zone of proximal development
- **Information processing Approach**
  - Increased capacity of neural systems
  - Processing of information
  - Effortful to automatic (E.g. driving)
  - More sophisticated memory strategies

## Summary: Developmental Breakthroughs

- Things exist independent of my actions upon them
- Me- not me
- Objects/people have an essence independent of appearance
- Symbols (Words, dolls, drawings) represent things
- Social cognition:
  - Others may think/see things differently to me- egocentrism

- > perspective taking, playing tricks.