

## Lecture 2: Pseudoscience

### What is science?

- A set of systematic safeguards against confirmation bias
- **Confirmation bias:** what we want to believe to be true
- Science emphasises disconfirmation
- Science is the antithesis (opposite of common sense)

### What is pseudoscience

- Nonscience masquerading as genuine science
- Not built on scientific foundations, but rather a novel idea
- **Vienna circle:** were a positivist movement studying philosophy of science which came up with the expression of pseudoscience suggesting that there are no answers to some 'sciences'
- **Logical positivists:** popular school of thought on science which believe that empiricism (evidence) is the basis of knowledge
- **Rudolph Carnap:** a positivist believed that correlating the mind with psychological states is okay, but not okay to explain this using metaphysics with words like spiritual
- **Metaphysics:** trying to understand what comprises existence, not empirical because these notions cannot be tested (you can't stand outside existence)
- **Karl Popper:** acceptable to indulge in metaphysics if acknowledged its pure philosophy. Introduced to concept of testability to science
- **The line of demarcation:** what is science and what is not science

### Characteristics of pseudoscience

- Can't be tested
- Avoids falsification
- Develops ad hoc hypotheses to account for lack of results
- Emphasises confirmation over falsification
- Overuses anecdotal and testimonial evidence (persuasion over logic)
- Evades peer review
- Uses hypertechnical language
- Hostile to criticism
- **Misappropriation:** uses accepted theories to support it
- **Scientist practitioner gap:** gap between science and practice, that is those who practice these alternative approaches don't have much scientific understanding/pursuit
- Overreliance on personal testimony/ case studies and lack of experiment
- Failure to acknowledge limitations of theory

### Examples of pseudoscience

- Biorhythms:
- Subliminal self help recordings
- Polygraph testing/lie detectors
- Hypnosis
- Projective tests (ink)
- **Esp:** psychoanalysis
- New age psychotherapies
- Many clinical psychologies apart from CBT

### **Clinical examples of pseudoscience**

- Eye movement desensitisation and reprocessing
- Rational emotive behavioural therapy
- Critical incident stress debriefing
- Facilitated communication
- Thought field therapy
- Attachment theory

### **Alternative words to pseudoscience**

- **Proto science:** takes into account non science fields that helped develop real science ie alchemy to chemistry and phrenology to neuroscience
- **Quasi science:** theory claiming to be scientific but cant yet be confirmed

### **Scientific theories**

- Identifying pseudosciences predominately focuses on the paranormal
- Probably because if focused on more conventional, there'd be too many
- Social psychology is pseudoscience
- **Thomas khun:** developed notion of **paradigms** meaning that popular theories are a fixed part of society and difficult to move
- **Paradigm shift:** weight of evidence becomes too great ie world is flat
- Scientific theories are resistant to change

### **Content rather than criteria**

- Most focus on content rather than line of demarcation, ie a pseudoscience is a pursuit with unusual content
- Methodology questioned more than findings
- Ie psi passes most of the pseudoscience criteria however the theory is opposed because it is considered fringe (content to extreme)
- A lot of sciences do fall within line of demarcation but are rejected due to questionable content

# Textbook Summaries

## Chapter 1: psychology: the study of mental processes and behaviour

### Psychology

- Psychology: the study of mental processes and behaviour and the understanding that people differ in terms of biology, experience and culture
- Mind-body problem: how mental and physical events interact

### Boundaries and borders

### Bio psychology

- examines physical basis phenomena ie memory, emotion, stress
- Aim is to link mind and body
- Connection became increasingly clear in 19th century as brain incidents affected behaviour
- Localisation of function: the extent to which different parts of the brain control different functions
- The pattern of firing cells determines the meaning of the neural event
- It is difficult to pinpoint what behaviours are in response to the brain ie a man might not mentally be able to recognise his wife due to a sustained head injury, however his heart beats faster when he looks at her so physically the signs show

### Culture

- **Cross-cultural psychology:** tries to distinguish the difference between universal psychology and culture specific psychology
- To what extent do cultural differences create psychological differences
- Does society produce its own psychology
- Argued that individual psychology is shaped by cultural values and norms
- The question of whether psychological practices and understanding are applicable or consistent across all cultures

### History of psychology

#### Philosophical roots of psychological questions

- Psychology was born from philosophy
- Question of whether our actions are a product of free will or determinism or perhaps both
- Descartes (1596-1650) Proposed Human action follows from human intention
- No one has ever proposed a solution to the mind body problem (ie how mental and physical events interact)
- ie anti social personality disorder- behaviour as a result of free will or maybe a bad child gave them no other way to behave
- Many questions in psychology reflect this nature (biology) or nurture (environmental influence)