

Psy246 Lecture Notes

Week 1 – Approaches to Human Cognition

Cognitive Psych

- Aims to understand the workings of the human mind by studying behaviour with experimental methods. The attempt to uncover the nature of human cognition by observing people's behaviour
- Interest is mostly in normal human cognition
- Most cognitive behaviour involves more than just one cognitive process
- The information processing approach is the general approach taken; major goal: specify the processes and structures involved in cognition
Stimulus -> Attention -> Perception -> Thought process -> Decision -> Response
- Bottom-up processing: external stimulus causes internal cognitive processes to occur, producing the desired response
- Top-down processing: processing influenced by information that has already been brought into the brain by one or more sensory systems
- Cognition is not all bottom-up

Computer Models

- Computational cognitive science: the attempt to use computational models to further understanding of human cognition
- Computational modelling: programming computers to model or mimic some aspects of human cognitive functioning (simulations compare the model's behaviour to human behaviour)
- An advantage is that you have to make your assumptions about how a particular task is performed really explicit, making results more accurate and reliable

Cognitive Neuroscience

- Cognitive neuroscience: the attempt to use information about behaviour and the brain to understand human cognition
- Cognitive neuropsychology: the attempt to understand human cognition by studying brain-damaged patients
- Key terms for evaluating the neuroscience methods:
 - Temporal resolution: the accuracy with which one can measure when an event occurs in the brain
 - Spatial resolution: the accuracy with which one can measure where an event occurs in the brain
 - Invasiveness: this refers to whether the equipment is located internally or externally; ethical implications

Relationship between cognition and other areas of psychology

- Neuropsychology: cognitive disorders due to brain impairment in reading, spoken language, memory, visual cognition

- Clinical psychology: delusion, memory, attention
- Developmental psychology: reading acquisition, developmental changes in attention, memory, language (in the young and the elderly)
- Forensic psychology: attention, memory