Memory

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Outline

• Models of Memory
  • Multi-store model
  • Working model
• Evidence for memory models
• Improving memory
• A note on exams
• Storage
• Retrieval
• Forgetting
• Types of memory
• Memory disorders
Memory

“Persistence of learning over time through the storage and retrieval of information”

• 3 principal components
  • Acquisition
  • Storage
  • Retrieval
Multi-store Model

- Atkinson & Shiffrin (1968)
Working Model

- Baddley & Hitch (1974)
- Replaced STM with working memory
Evidence for STM/WM

- Primacy – Recency
  - Words at the beginning and end recalled
  - Words in the middle less likely to be recalled
Variations in P-R

• Faster-Slower presentation
• Distraction
• Perceptual salience

![Graph showing percentage of words recalled vs position of word in list]
Improving Memory

• Rehearsal
  • Mechanical repetition
• ‘Chunking’
  • Joining together information
• Attention
  • Intentional learning mostly
  • Incidental learning does happen
• Levels of Processing
  • Shallow – superficial
  • Deep – consider the meaning of the information
• Connections
  • Mnemnics – method for remembering
  • My Very Easy Method Just Speeds Up Naming Planets
A note on exams

- Flash cards
- Mind maps
- Reduction - rehearsal
Storage

- Most of what we know is theoretical
- Analogous of computers
- Memory trace
  - Mental representation of information
- Memories are not created in an instant
  - Extremely complex process not yet understood
    - Involving proteins
    - Synaptic plasticity
- Cells that fire together wire together (Hebb, 1949)
Retrieval

• Locate and activate information
  • Recall
  • Recognition
• Partial retrieval
  • Tip-of-the-tongue
• We know storage based on connections
  • Retrieval pathways
    • The more retrieval cues
    • The more likely we are to recall
• Memory can be *context* dependent
  • e.g. Godden & Baddley (1975)
• Memory can also be *state* dependent
Forgetting - time

- Retrieval failure
- Retention interval
  - Time between learning and retrieval
- Memories diminish over time if not retrieved
Forgetting - intrusion

- Mistakes caused by mixing information
  - Intrudes into your recall
- Misinformation effect
- Merging your memory with other information
  - You would be so convinced it was true
- Elizabeth Loftus
- Misplaced familiarity
  - Eye witness testimonies
- False memories
  - Can be implanted
- Common to recall events from childhood
  - But you elaborate on photos you have seen
Types of Memory

Explicit memory
Requires conscious awareness

- Semantic memory
  Facts and general knowledge

- Episodic memory
  Personally experienced events

Implicit memory
Does not require conscious awareness

- Procedural memory
  Motor and cognitive skills

- Priming
  Enhanced identification of objects or words

- Learning through classical conditioning
Subdivision of Episodic

• **Flashbulb memories**
  • Highly distinctive event
    • Emotionally important
  • Recall everything about the moment
    • As if camera took a picture

• **Traumatic Memories**
  • Same as episodic
  • Proposed to be dealt with differently
  • Protect the self from painful images
Memory Disorders

- Anterograde amnesia
  - Failure to create new memories
- Retrograde amnesia
  - Loss of older memories
- Prosopagnosia
  - Inability to recognise faces
- Capgras Syndrome
  - Recognise but think the individual is an imposter
- Eidetic Memory
  - Photographic memory
  - Controversial – many use mnemonics
That's all Folks!