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EDUCATION BEYOND BORDERS

Week 5

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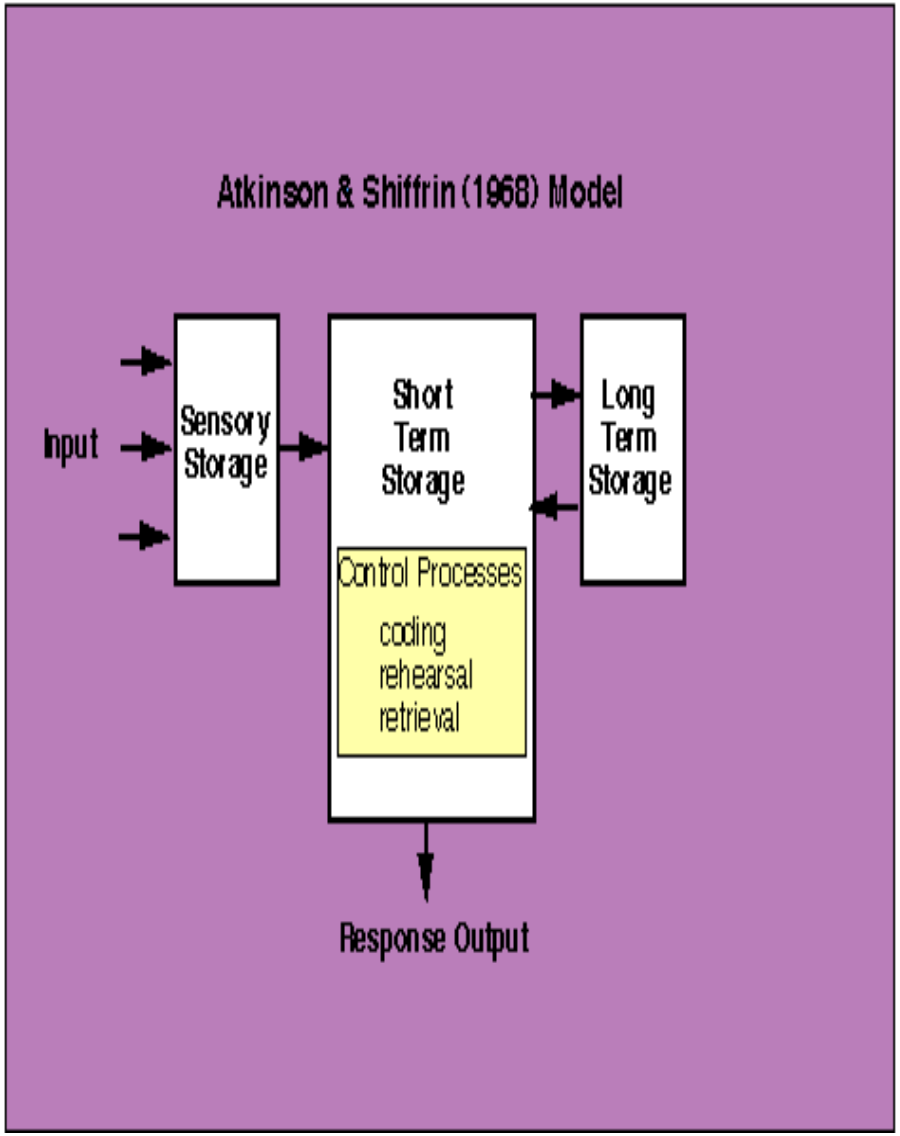
Memory

The Cognitive Model: Memory as Information Processing

- Sensory
  - **momentary lingering of sensory information after a stimulus is removed**
  - **selective attention**
  - **“cocktail-party phenomenon”**



Short-term Memory

- More durable than sensory
- contains the contents of conscious awareness
- encoding
- rehearsal
- chunking

Long-term Memory

- Encoding
  - effortful encoding
  - automatic encoding

The Stroop task

- XHFH
- FKXHW
- ULSIUE
- VKWHR
- TYLPW
- MJYRLG

The Stroop task

- **BLUE**
- **YELLOW**
- **PINK**
- **GREEN**
- **BROWN**
- **RED**

Long-term Memory (cont.)

- Storage
  - deep processing (elaborative rehearsal)
  - shallow processing (maintenance rehearsal)

Long-term Memory

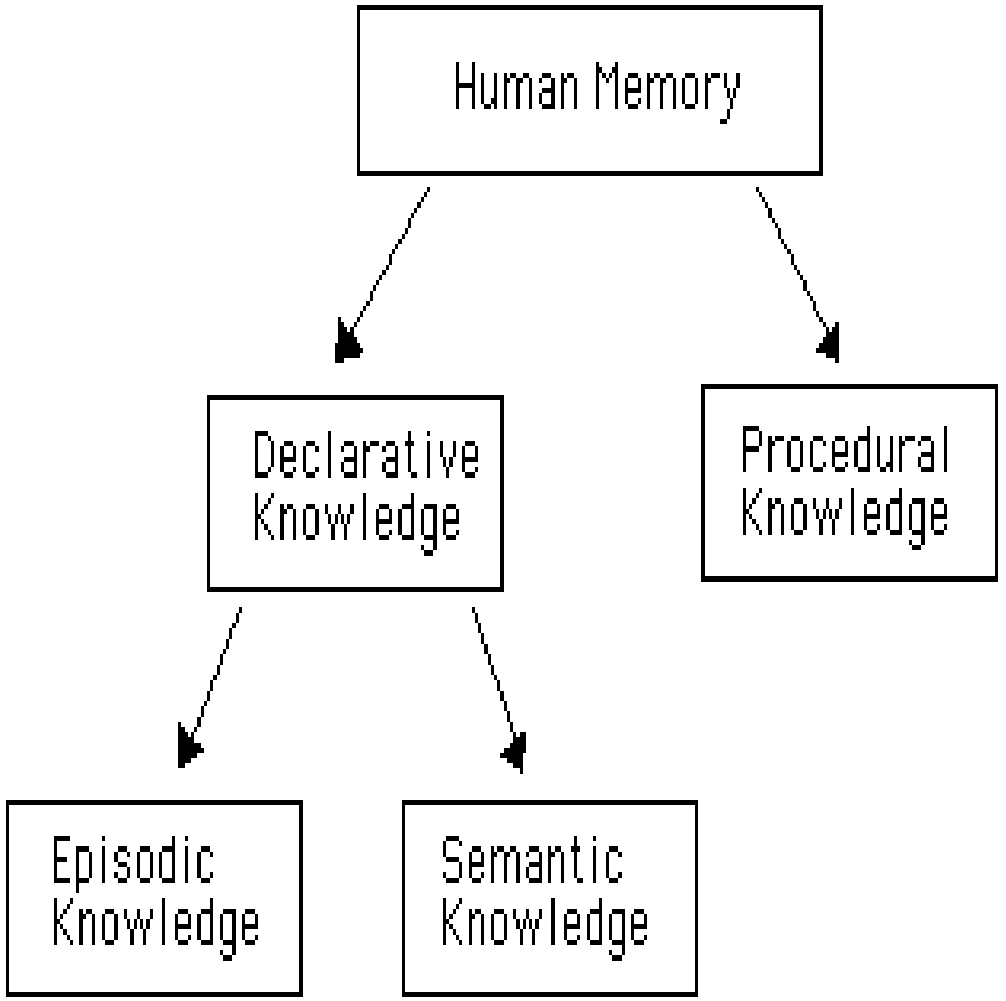
- Retrieval
  - recognition
  - recall
  - retrieval cues

Long-term Memory (cont)

- Retrieval (cont)
  - encoding specificity
  - tip-of-the-tongue phenomenon

Tulving's Theory of Multiple Memory Systems

- Memory is best understood as a hierarchy of memory systems:
  - **Procedural memories**
  - **Semantic memories**
  - **Episodic memories**



Evidence Supporting Existence of Multiple Memory Systems

- Amnesia
  - anterograde and retrograde amnesia
- Memory systems in normal people
  - implicit and explicit memories

Word Fragment Completion Task

ABSENT	ABS_____
INCOME	INC_____
FILLY	FIL_____
DISCUSS	DIS_____
CHEESE	CHE_____
ELEMENT	ELE_____

Evidence Supporting Existence of Multiple Memory Systems

- Neural structures
  - Alzheimer's disease

Autobiographical Memory: The Role of Age and Emotion

- Human development and memory
  - childhood amnesia
  - “reminiscence bump”
- Emotions and memory
  - flashbulb memories
  - mood-dependent memories

Distortions of Memory

- Mental schemas
  - influence memory by deciding what is relevant or important to remember

- Eyewitness testimony
  - when people witness an important event, their memories can be distorted by subsequent misinformation

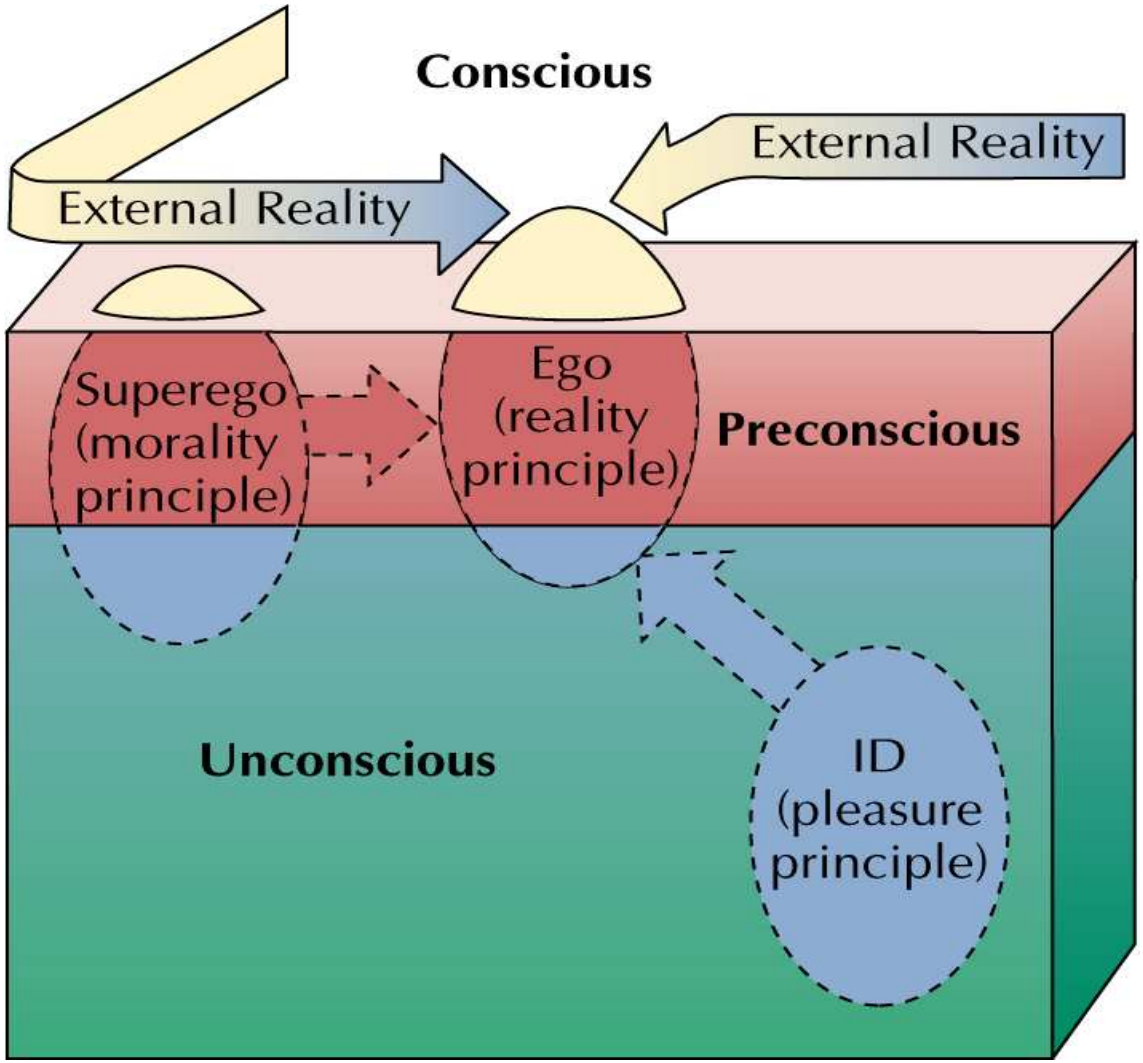
Memory Improvement

- Ericsson's Memory Skill Hypothesis

- Expert memory is characterized by:
  - 1. Meaningful, redundant encoding
  - 2. Rich, highly associated retrieval cues
  - 3. Tremendous practice

Memory Improvement

- Ways to improve normal memory
  - **mnemonic devices**
  - **method of loci**
  - **peg word method**
- Visual Imagery



Memory Improvement

- Memory is best when material is learned and comprehended rather than practiced in rote fashion
- Memory is aided when the context at learning can be matched by the context at retrieval
- Strategies that enhance encoding are likely to improve memory

Memory Improvement

- Memory is good when affect and emotional arousal are high, but not extremely high

- Since memory is reconstructive, the number and type of cues given at retrieval are critical

Memory Improvement

- Memory is better if rehearsal is spaced out over frequent short learning trials rather than massed in on, long learning trial

- Memory is better if material is encoded and stored in more than one way