

Cognitive Psychology (EXP 4680)

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LONG TERM MEMORY CHAPTER 5

INFORMATION PROCESSING MODEL

- **Computer Analogy**
- **Structure:**
- **Processes:**
 - **Encoding:**
 - transduction process
 - **Storage:**
 - **Retrieval:**

INFORMATION PROCESSING MODEL

■ **CHARACTERISTICS OF LTM**

THEORIES OF THE RELATION BETWEEN STM AND LTM

■ **ATKINSON-SHIFFRIN MODEL (1968):**

■ **EXTREMES ON A SINGLE CONTINUUM:**

**THEORIES OF THE RELATION BETWEEN STM AND LTM:
RESEARCH SUPPORTING SEPARATE STORES MODEL**

■ **Rundus' Research:**

- **Kintsch & Busch (1969):** proposed that STM is coded _____ and LTM is coded _____.

■ **The Experiment:**

■

○ **Participants were given 2 lists of words**

- 1st list: synonyms
- 2nd list: homonyms

□ **Ps Given 2 lists of words:**

■ **1st list: synonyms**

- If model is correct we would expect **more semantic confusion at the _____ of the list than at the _____** because ...

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■ **2nd list: homonyms**

- If model is correct we would expect **more acoustic confusion at the _____ of the list than at the _____** because ...

■ **Neuroscience Research:** dissociations between LTM tasks and STM.

**THEORIES OF THE RELATION BETWEEN STM AND LTM:
EVIDENCE AGAINST THE SEPARATE STORE MODEL**

- Evidence that STM is also coded _____.
- Evidence that LTM is also coded _____.
- Long-term recency effect

2 HYPOTHESES FOR FORGETTING

- **Trace Theories**

- **Interference Theories**
 - **Proactive:**

 - **Retroactive:**

CRITICISM OF MULTI-STORE MODELS

DETERMINANTS OF ACCURACY

- **Depth of Processing/Level of Processing**

- **Context Effects:**
 - Encoding Specificity
 - State-Dependent Memory

 - **Mood:**
 - pollyanna principle
 - mood congruence
 - mood state dependence

- **Self Reference Effect:**

ENCODING PROCESSES IN LTM

■ DEPTH OF PROCESSING:

- Incidental Learning Procedure (Hyde & Jenkins, 1969, 1973)
 - Intent to learn not crucial importance.
 - What was crucial?

CRAIK AND LOCKHART'S LEVELS OF PROCESSING MODEL (1972)

- Deeper processing
- Processing ranges from *shallow* to *deep*.
- The modality in which the information is handled is determined by the
- Craik & Tulving (1975)

WHY DOES THE SEMANTIC LEVEL RESULT IN BETTER RECOGNITION OR RECALL?

- Craik & Lockhart (1986): 2 factors responsible for depth of processing effects

WHAT IS THE EFFECT OF REHEARSAL ON FUTURE RECALL?

- Maintenance Rehearsal
- Elaborative Rehearsal

ENCODING AND RETRIEVAL INTERACTIONS

■ Encoding Specificity Effect:

- Memory =
- Context =
- Steven Smith (1979, 1986):
- Geiselman & Glenny (1977)

WHY IS RESEARCH ON ENCODING SPECIFICITY EFFECT IS CONTROVERSIAL?

■ Inconsistency of results:

■ Why this inconsistency?

- Different types of tasks:
- Outshining Hypothesis:
- Physical versus Mental Context:

State Dependent Learning: A Type of Encoding Specificity

- State-Dependent Memory:
- Context & Memory
 - 2 Types Of Cues:
 - External cues
 - Internal cues
- Godden & Baddeley (1975):

EMOTIONS, MOOD, AND MEMORY

- **Pollyanna principle:**

- **Positivity Effect**

- **Socioemotional Selectivity Theory** (Mather & Carstensen, 2005)

- **Negativity Bias** (Kisley, Wood, & Burrows, 2007; Vaish, Grossmann, & Woodward, 2008)

- **Memory for Items Differing in Emotion**
 - **Over time, unpleasant memories fade faster**
 - Walker and coauthors (1997)
 - personal events recorded and rated for pleasantness and intensity
 - people tend to rate past events more positively with the passage of time

CONTEXT EFFECTS AND MOOD

- **Mood congruence:**
 - **Murray and colleagues (1999)—**

- **Mood state dependence:**
 - **Gordon Bower 1970's series of studies**
 - Both induced and naturally occurring moods for learning lists and for tests
 - Inconsistent findings: problem w/ methods
 - How can we measure mood more accurately?

ORGANIZATION OF LTM: TULVING'S MODEL

- **Procedural memory**

- **Semantic/Declarative memory:**

- **Episodic memory**
 - **Flashbulb Memory**
 - Talorico, J.M. & Rubin, D. C. (2003). Confidence, not Consistency, Characterizes flashbulb memories. Psychological Science, 5, pp. 455-461.

RESEARCH IN SUPPORT OF TULVINGS MODEL

- **Neuroscience:**
 - Brain areas that are active during semantic and episodic tasks are different.
 - **Dissociations** in **brain damaged persons** - good semantic memory, but poor episodic memory.

- **Small correlation** between performance on semantic and episodic memory tasks.

- Variables that effect semantic memory performance don't effect episodic memory performance and vice versa.

