Long Term Memory: Encoding

• Levels of Processing
• Other factors that affect memorability
  – Organization
  – Elaboration
  – Memory for Personally Relevant Info
  – Self-Generation Effects

Levels of Processing

• Craik & Lockhart
  – Continuum of Processing
    • Shallow: surface, perceptual features
    • Deep: processed, meaningful interpretation
  – Level or “depth” of processing affects its memorability
  – Deeper encoding produces more elaborate, longer-lasting memory traces

Testing Levels of Processing

• Orienting Tasks
  – Objective: induce subjects to focus on different perceptual and conceptual info associated w/stimuli
• Unexpected Recall Task
  – Objective: exercise more control over subject during encoding phase

Orienting Tasks

• Does the word have an ‘e’?
  – Orthographic orienting task (shallow)
• Does the word rhyme with taboo?
  – Phonological orienting task (shallow)
• Is it a vehicle?
  – Semantic orienting task (deep)

Hyde & Jenkins

Incidental Intentional
-Pleasantness
-Frequency
-E/G Checking
-Part of Speech

Hyde & Jenkins

• Better Recall for Semantic Encoding Tasks
  – Pleasantness, Frequency > PoS, E/G checking
• Performance Equivalent on Intentional and Incidental Learning Tasks
  – The mere intention to remember does not affect memorability unless it changes encoding strategies
Craik & Tulving

- Ostensive task: How long to answer various questions
- Physical Aspects
  - Is the word in upper-case letters?
- Sound
  - Does the word rhyme with "log"?
- Meaning
  - Would the word fit the sentence, "The boy had a pet _____"?
- Unexpected Recognition Test

Is it just processing time?

- Craik & Tulving
- Semantic Task
  - The man threw the ball to the "child"?
- Structural Task
  - Child: CCVCC

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<thead>
<tr>
<th>Task</th>
<th>Time</th>
<th>Recognition (%) correct</th>
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<tbody>
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<td>Structural</td>
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<td>57</td>
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<td>Semantic</td>
<td>.83 sec</td>
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Craik & Tulving Data

- Sentence Task Best!
- Congruency Effect
  - Finding that people do better on "yes" items than "no"
  - Due to differences in retrieval cues
  - Is a yacht a ship?
  - Is a robin a ship?

Levels of Processing

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Doubts about Depth

- Levels of Processing doesn't account for all factors that affect memorability
  - Importance of Organization
  - Memory for Personally Relevant Information
  - Self-Generation Effect
  - Elaboration
  - Distinctiveness

Organization

- People naturally organize info
  - magazine, clock, executive, airplane
- Tulving
  - Give people the same words in different random orders (multiple times)
    - Free recall
- Subjective Organization
  - Each subject has their own strategy
  - People who organized the most remembered the best
Types of Organization

- Taxonomic
- Hierarchical
- Thematic
  - Frames, Schemas
    - Librarian
    - Minneapolis
    - Jet
    - Island
    - Tan

Hierarchical Structure

- Memory improves whenever knowledge is available to organize it

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<tr>
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<th>CAT3</th>
<th>CAT4</th>
<th>CAT5</th>
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</tbody>
</table>

Bower & Colleagues

- Minerals
  - Metals
    - Rare
      - Platinum
      - Silver
      - Gold
    - Common
      - Aluminum
      - Copper
      - Lead
      - Iron
  - Alloys
    - Bronze
    - Steel
    - Brass
  - Precious
    - Sapphire
    - Emerald
    - Diamond
    - Ruby
  - Masonry
    - Limestone
    - Granite
    - Marble
    - Slate

Data

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Memory for Personally Relevant Information

- Rogers, Kuiper, & Kirker
  - Structural appearance
    - Are there any capital letters in it?
  - Phonemic Properties
    - Rhymes with X?
  - Semantic
    - Means the same as X?
  - Self-Relevance
    - Does this adjective describe you?

Memory for Personally Relevant Info

- Self-Relevance Effect
  - finding that judgments about self-relevance lead to better recall than other common encoding tasks