HUMAN MEMORY
stage theory: Long Term and Short Term Memory
- (note: Short Term Memory = "Working Memory")

duration
Long Term Memory: relatively permanent
Short Term Memory: seconds to minutes

storage capacity
Long Term Memory: infinite?
Short Term Memory: 7+/−2 "chunks" (organized packets of information)

flow of information in memory
- stimulus -> STM -> rehearsal* -> LTM

*two kinds of rehearsal:
  maintenance - holds info in STM
  elaborative - moves info to LTM
serial position effect in free recall
task: read 20 words one at a time, recall in any order

primacy effect - early part of list recalled better than middle: recalled from LTM

recency effect - last part of list recalled better than middle: recalled from STM

reduce **recency**: delay between 20th word and recall
reduce **primacy**: present words faster
Figure 7.2: Primacy and recency effects in free recall

Figure 7.3: The recency effect and working memory
The Serial-Position Effect

- Subjects memorized lists of words
- Recall immediate (yellow line) or delayed (green line)
- Primacy: Good recall of first items on list
- Recency: Good recall for last items
FURTHER DIFFERENCES BETWEEN STM & LTM

psychological code

- STM: phonological - based on speech sounds
  confuse "boat" with "coat"

- LTM: semantic - based on meaning
  confuse "boat" with "ship"

FURTHER DIFFERENCES BETWEEN STM & LTM

neural code

STM: dynamic - pattern of activity among a group of cells
LTM: structural - pattern of connections within a group of cells

"trace consolidation" is what goes on during elaborative rehearsal - a memory trace changes from a dynamic to a structural pattern

- amnesia - interruption of consolidation process
- retrograde amnesia for events BEFORE trauma
- anterograde amnesia for events AFTER trauma
FURTHER DIFFERENCES BETWEEN STM & LTM

forgetting

STM: DISplacement and/or decay

LTM: MISplacement and/or retrieval failure
  - proactive interference: old info affects new
  - retroactive interference: new info affects old

Interference and Forgetting

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<th>Proactive interference</th>
<th>A disrupts B</th>
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<tr>
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<td>Study A</td>
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WORKING MEMORY:

STM not just storage box; more like cognitive "workbench"

limit on storage capacity is viewed instead as limit on processing capacity

used in all processing of information: mental calculation, reading, etc. (16 x 231=?)