

Memory

- Encoding vs. Retrieval
- intentional vs. incidental
- explicit vs. implicit

Memory, cont.

- Different effects with aging
- Howard
 - *The dragon sniffed the fudge.*
 - *The ocean washed away the trash.*

Explicit retrieval

Recall

- Coming up with the information from memory yourself.

Recognition

- When provided with the information and only need to determine if you've seen it before.

Recall vs. Recognition

- Recognition involves a process of comparison of info with memory. Recall involves a search of memory and then the comparison process once something is found.
- Not just different amounts of the “same” memory.
 - rare words are almost always better recognized than common ones, but usually less well recalled.

Other ways to divide memory

- Working memory (remembering a phone # long enough to dial it in; what you’re currently processing) vs. Long-term memory (everything permanently stored) vs. Sensory memory
- LTM includes semantic memory vs. episodic memory vs. procedural memory

Sensory memory

- Large capacity system that records info directly from perceptual system
- Takes in information and retains it in its raw (unanalyzed form).

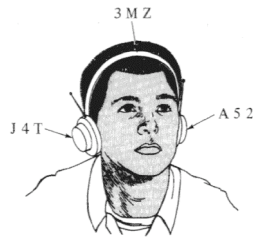
Sperling study

- Flashed Ss a set of 12 letters for 50 ms
- Asked Ss to report what they saw.

V	C	B	X
N	J	K	M
L	W	A	R

Auditory sensory memory

- Darwin, Turvey & Crowder



Sensory memory summary

- Holds information temporarily, unanalyzed, so that the brain has time to process it.
- Lasts about 1 second for visual store.
- Lasts more like 4 seconds for auditory sensory store.

Working memory

- Contains information currently being worked on.
- Limited storage: somewhere between 5 and 9 pieces of info.

Chunking

- Grouping into larger, richer, more complex units.
- Recoding into larger meaningful units can allow us to remember “more”
 - Chase and Ericsson

Is it just number of chunks?

- Amount depends on:
 - Length (Baddeley, Thomson & Buchanan)
 - Reading rate (Vallor & Baddeley)
- Time may be the factor (about 2 sec.)

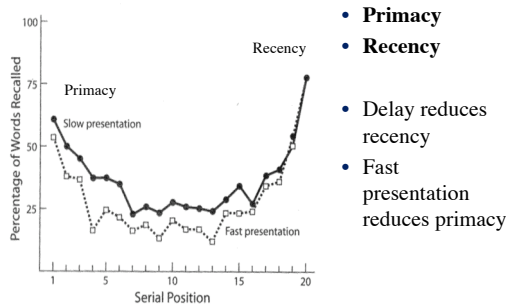
Main point

- There are real limits on what we can remember
 - Limits in terms of amounts
 - Limits in terms of time
 - Limits in terms of processing resources.
- If a task is more difficult (uses more processing resources), then there is less space available for storage; if the task is easy, you can store more.

WM and CI users

- Some kids with CIs do amazingly well.
- Others do not.
- How do they differ? Can we predict who will benefit?
- Pisoni & Geers found that digit span correlated with language outcome scores
- So perhaps WM determines CI success?

Typical recall pattern



Long-term memory

- Permanent repository of information
 - Semantic memory
 - Episodic memory

Why is memory relevant for language?

- Speech information is held in the sensory store to give us time to recognize patterns in the signal.
- Identified words will be held in WM
 - WM can only hold 5-9 units – and most sentences are longer than this.
 - So we chunk them into grammatical constituents, and this then reduces the storage burden.
- Semantic memory is used for finding antecedents for expressions such as pronouns, as these may refer to information from prior sentences.
- Also used to interpret what we're hearing in relation to the world.
