

Memory – an active mental system (ability) that allows us to put away information for later use.

Processes (steps) of Memory:

(Receive) – from the senses

Encoding – put into memory, for short or long time use.

Storage – hold onto memory

Retrieval – get out certain memory

Models of Memory

Information-processing model – assumes processing of information for memory storage is similar to the way a computer processes memory (series of three stages, above)

Levels-of-processing model – model that assumes information that is more “deeply processed” or processed according to its meaning – will be remembered more efficiently and longer.

Other models exist too.

Which is right? Both! All are useful, and help us to understand. None are perfect.

Information Processing Model: (3 stages) KNOW THE MODEL, SLIDE 6.1

1. Sensory memory – very first stage of memory, the point at which information enters the nervous system through the sensory systems. (If you don't do something to retain sensory information to memory, it is lost within a second.)
2. Short-term memory (STM) (working memory) – memory system where information is held for brief periods while being used.

Selective attention – ability to focus on one stimulus from among all sensory input (moves information from sensory memory to STM).

How big is STM?

Capacity of STM = about 7 items (+/- two items = 5-9) “The Magic Seven”

Chunking – bits of information are combined into meaningful units, or chunks, so that more information can be held in STM. (Ex: area code, exchange, extension)

How long does it last?

Duration of STM = about 12-30 seconds without rehearsal.

Maintenance rehearsal – practice of saying information over and over in head to maintain it in STM (STM'S tend to be encoded in auditory form)

STM is susceptible to interference (ex: if counting is interrupted, have to start over.)

3. Long-term memory (LTM) – memory system used to keep information “permanently”.

Elaborative rehearsal (vs. maintenance) – get information from STM into LTM by making the information meaningful. (*Most efficient way to retain information*)

Two Types of LTM: Useful to dividing memories: people can have trouble with declarative memory, but still do fine with procedural memory.

Procedural (non-declarative) memory (implicit) – Skills: things people know how to do. Also: motor skills, emotional associations, habits, and simple conditioned reflexes that may or may not be in conscious awareness.

Implicit memory: memory not easily brought into conscious awareness.

Anterograde amnesia – loss of memory from a point in time forward (the inability to form new long-term declarative memories), usually does NOT affect procedural LTM. (Can't remember learning new skills, but can do them)

Declarative memory (explicit) – type of LTM containing information that is conscious and known (memory of facts). All the **things** that people know.

Explicit memory: memory that is consciously known.

Two types of declarative memory:

Semantic memory – contains general knowledge that most people know, such as knowledge of language and information learned in formal education.

Episodic memory – contains personal information not readily available to others, such as daily activities and events.

Cues to Help Remember

Retrieval cue – a stimulus for remembering.

Encoding specificity – tendency for memory to be better if related information that was available when the memory was formed, is also available when the memory is being retrieved.
(Surroundings or physio state)

State-dependent learning – memories formed during a particular physiological or psychological state will be easier to recall while in a similar state.

(Manipulate mood, ask you to learn something – when you come back, if in the same mood, you will remember the information you learned better.)

(Ex: when you're fighting with someone, you remember all the things you don't like about them, and it's harder to remember the reason why you like them in the first place.)

Two types of Remembering – Recall and Recognition:

Recall – type of retrieval in which you “pull” information from memory with very few external cues.

Retrieval failure – recall has failed (at least temporarily).

Ex: drawing a blank; tip of the tongue phenomenon.

Serial position effect – we remember the beginning and the end better than the middle.

Primacy effect – tendency to remember information at the beginning better.

Recency effect – tendency to remember information at the end better.

Recognition – match a piece of information to a stored image/fact.

False positive – error of recognition – people think they recognize some stimulus that is not actually in memory.

Eyewitness Testimony – not always reliable ☹

Elizabeth Loftus study:

What you see and hear after the fact can easily affect the accuracy of the memories of the event.
(In eyewitness testimony, recall is usually more accurate than recognition.)

Automatic Encoding and Flashbulb Memories

Automatic encoding – tendency of certain kinds of info. to enter LTM with little or no effort.

Flashbulb memories – type of automatic encoding – occurs because an unexpected event has strong emotional associations. (Like a snapshot, remember your surroundings – ex: 9/11)

Accuracy of flashbulb memories?

Just as vulnerable to distortion, alteration, and decay over time.

How LTM's Are Retrieved (implications for accuracy)

Constructive processing – referring to the retrieval of memories in which those memories are altered, revised, or influenced by new information. (Store general information, and when trying to remember, we fill in the gaps.)

Memory Retrieval Problems

Misinformation effect – tendency of misleading information presented after an event to alter the memories of the event itself. (Ex: heard on media thought it was a priest, and in line up chose the priest; student protest movie, eight students – ask audience questions like “shirt color of leader of 6, leader of 12”, and upon return, audience remembers either 6 or 12 protestors, not eight.)

False memory syndrome – creation of inaccurate memories, or false memories, through suggestion of others (often while the person is under hypnosis).

Hypnosis allows people to remember better, but they remember both real event and false events.