Memory: The Basics – Jan 30

I. INFORMATION-PROCESSING APPROACH TO MEMORY

Remember when cognitive psychology was introduced during the first lecture? The slides said: Cognitive psychology included inferences about mental events from observations of behavior; it was an _____ - _____ approach. Information = symbols or mental _____ of the environment. I introduced the human – computer metaphor. Computers _____ information. They encode information, operate on it, store it, retrieve it. Computers – software & hardware. Humans _____ and body/brain. Focus now on _____, the information in the mind. Memory – a record of past processing.

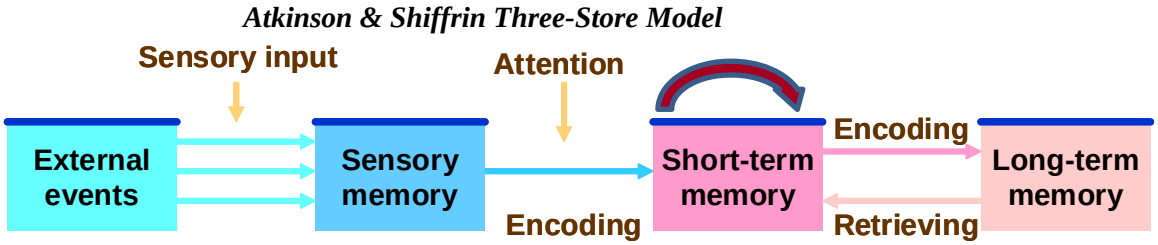
Caveat: Computer analogy is crude. Humans do process information, but they also _____ and _____information and may "remember" events that _____occurred. This is the topic of my final three lectures.

An activity for Later Discussion

1 is a bun	3 is a tree	5 is a hive	7 is heaven	9 is wine
2 is a shoe	4 is a door	6 is a stick	8 is a gate	10 is a hen

Grocery list- DO NOT WRITE DOWN-Visualize item interacting with peg. Will discuss again later.

The Atkinson & Shiffrin (1971) model was the first IP model.



Note, the figure is a modification of Fig 23.3 in the text but without the automatic processing and without working memory. Those will be discussed later.

A. SENSORY MEMORY

_____ capacity, _____ decay

DEMONSTRATION: Phenomenologically, you _____ more than you could report.

Only _____ items made it to STM

last less than 1 sec for _____ information; 2-3 sec for _____ information

(see Sperling's experiments in the text on pages 300-301.)

B. ATTENTION

Attention is a control process that _____information into STM & _____

Examples.

If there is no _____ there is no _____.

All Information not attended to is quickly _____.

We will talk more about attention in a later lecture.

C. SHORT-TERM MEMORY - STM

1. Limited capacity, _____ chunks. *write the lists below*

Chunk = a _____unit (letter, word, phrase)

STM _____ is 7±2 (___ to ____) chunks.

2. How long does information last in STM?

Maintained for a _____ _____ with rehearsal; how can rehearsal be prevented?

_____ backwards by 3s as fast as possible!

write lists here

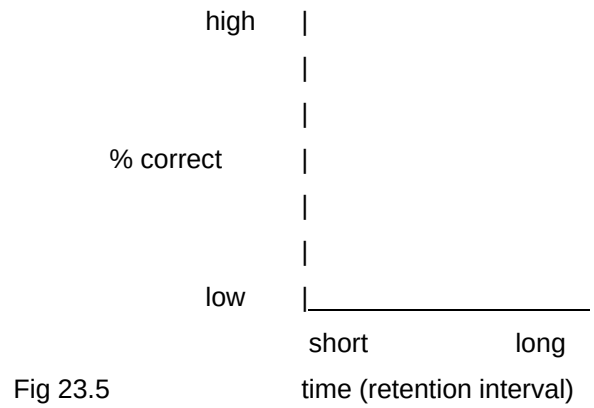


Fig 23.5

If prevent rehearsal by counting backwards, then rapid _____

within _____ sec for unrehearsed meaningless material

D. LONG-TERM MEMORY – LTM

Vast capacity; functionally _____;

Long or permanent _____;

Do not have to actively _____

Mostly _____or meaning based information;

Organized by _____. We know what we don't know!

II. REFINEMENTS OF STM AND LTM

The Atkinson & Shiffin model is 50 years old. It has stood up well, but it has been refined/elaborated upon.

A. Working Memory—refining STM

The term Working Memory (WM) has replaced STM for many researchers. WM focuses more on the _____nature of processing, on conscious _____ processing.

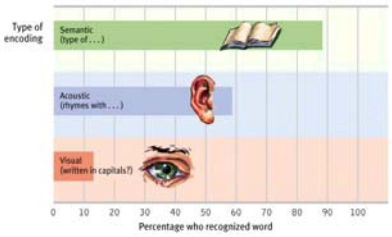
Related to "levels of processing" or types of encoding:

What you DO while something is in _____is important to _____ it into LTM

Craik & Tulving (1975)—answer a yes-no question about words in a list;

SAMPLE ITEMS

_____ processing (semantic or meaning based) --Is it a human?



Shallower processing (sound based) --Does it rhyme with tent?

_____ processing (visual/structural) --Does it have an H?

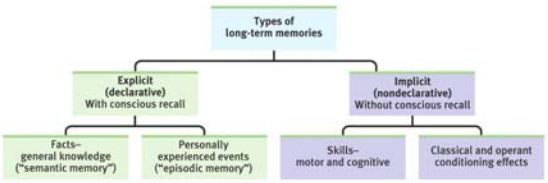
The deeper, more _____/meaning based the processing, the _____ the LTM.

Deep (meaning) better than shallower (sound) better than shallow (visual) semantic>sound>visual

Empirical basis for the advice to relate new information to what you already _____ when you study because that way it becomes more meaningful and is easier to encode & retrieve from LTM.

Illustrates the tight link between WM/STM and LTM. Another example—the grocery list.

B. Types of Long-Term Memory: Explicit vs. Implicit Memory



Consider refinements of LTM. A & S had general LTM

1. Explicit Memory— _____ information

Assess by asking _____; there is feeling of _____ retrieval

Two types of Explicit Memory

_____ - general knowledge vs. _____ - memory of personal past

2. Implicit Memory—Just _____ memory

Assess _____ through performance.

Motor and Cognitive _____—learned through practice; (e.g., bike riding & reading)

Demonstration: Keyboard _____feeling of conscious retrieval

3. Before continuing, let's do a short activity. You have 12 seconds to complete some difficult word fragments.

Word fragment completion is a _____ test for implicit memory. It is indirect.

Performance is generally better for _____ words than _____ words.

4. The text- Fig. 24.5 shows the textbook's take on "our two memory systems".

Module 24 focus is on _____, especially the distinction between automatic and effortful processing. We will consider more in the next two lectures.