

You Maintain Information in Three Memory Stores

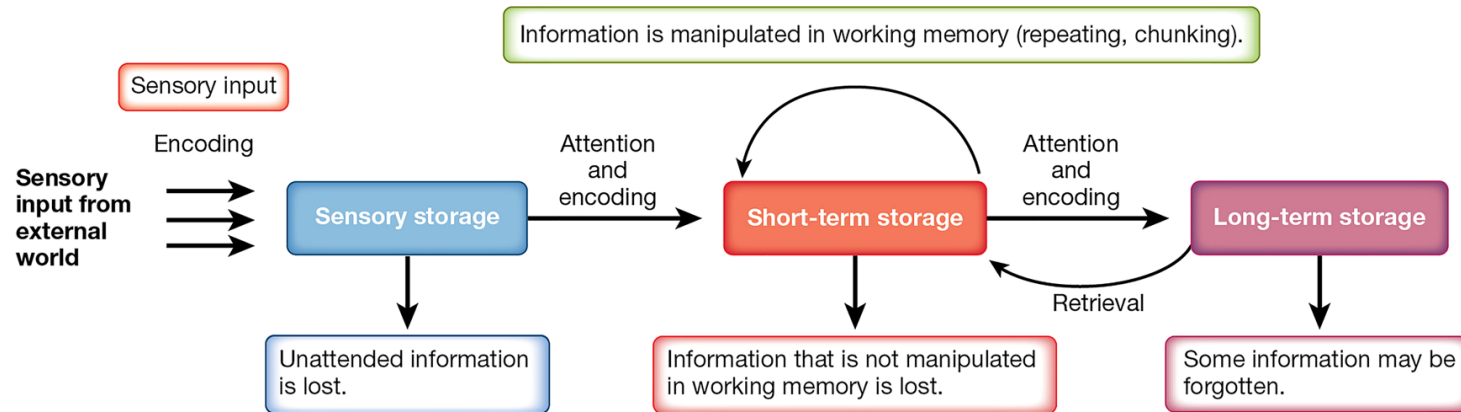


FIGURE 7.4

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TABLE 7.1 Four Features of the Three Memory Stores			
	Sensory storage	Short-term storage	Long-term storage
Function of storage	<ul style="list-style-type: none"> Lets perceptions appear to be unified wholes 	<ul style="list-style-type: none"> Maintains information for immediate use 	<ul style="list-style-type: none"> Stores information for access and use at a later time
Encoding for storage	<ul style="list-style-type: none"> In the sense it is experienced: visual, auditory, taste, smell, touch 	<ul style="list-style-type: none"> Primarily auditory Also visual and semantic 	<ul style="list-style-type: none"> Primarily semantic Also visual and auditory Dual coding provides richest encoding
Duration of storage	<ul style="list-style-type: none"> Visual: under 1 second Auditory: 3-4 seconds 	<ul style="list-style-type: none"> Under 20 seconds Indefinite with working memory manipulation of items 	<ul style="list-style-type: none"> Probably unlimited
Capacity of storage	<ul style="list-style-type: none"> Vast due to huge amount of sensory input 	<ul style="list-style-type: none"> About 7 items, plus or minus 2 Using working memory aids capacity 	<ul style="list-style-type: none"> Probably unlimited



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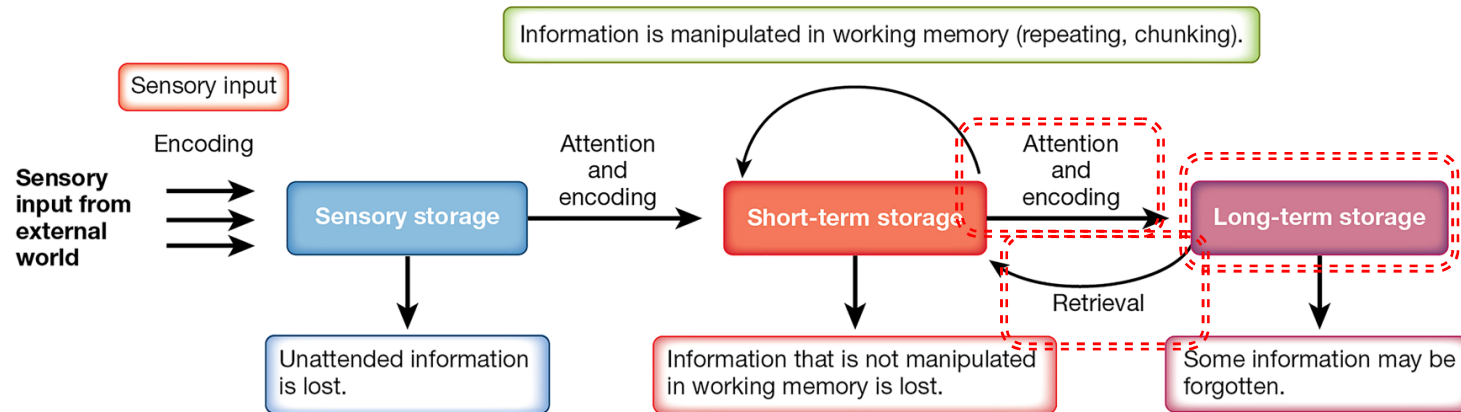


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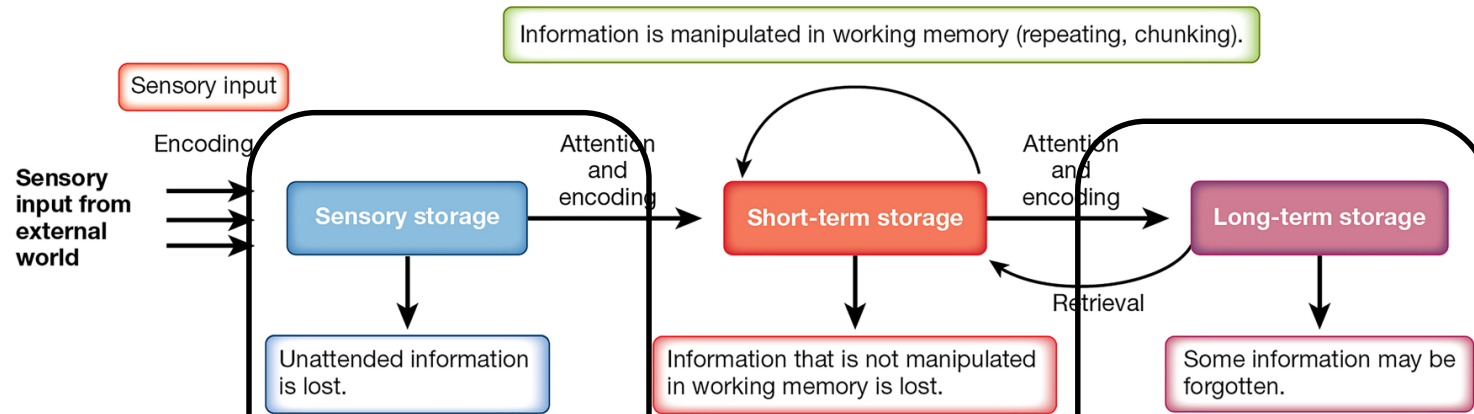


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Short-term Memory: Duration

The duration of short-term memory is about 20-30 seconds. Information that isn't written down, recorded or repeated is likely to be forgotten.

The strategy of maintenance rehearsal extends the 20-30 second duration of short-term memory. With this strategy, you repeat the information over and over to yourself. Generally, maintenance rehearsal keeps the information in short-term memory and unlikely encoded into long-term memory.

Short-term Memory: Capacity and Chunking

Short-term memory is limited to of 7 ± 2 chunks (newer research suggests it might be smaller, 4 ± 1) ([page 269](#)). Information that exceeds this limit is generally forgotten or displaces previous information.

You can expand the capacity of short-term memory by grouping related items together into a single unit or "chunk".

When information is organized into meaningful units, such as letters, words and phrases, it is easier to recall more information. For example, if you can put a phone number into two "chunks" instead of seven numbers, it is easier to remember. 465-8165 is easier to remember than 4658165.

Likewise, remembering letters in line B is easier to keep in short-term memory with 5 "chunks", than remembering the letters in line A with 24 characters.

A. KLCISNE NVESE YNA NI CSTITIH

B. NICKELS SEVEN ANY IN STITCH

Short-term Memory: Capacity and Chunking

Likewise, remembering the letters in line D with 3 phrases or "chunks" is easier than the letters in line C with 17 "chunks"

C. NICKELS SEVEN ANY IN STITCH DON'T
SAVES AGO A SCORE TIME AND
NINE WOODEN FOUR YEARS TAKE

D. DONT TAKE ANY WOODEN NICKELS
FOUR SCORE AND SEVEN YEARS AGO
A STITCH IN TIME SAVES NINE

Chunking: Using working memory to organize information into meaningful units to make it easier to remember ([page 269](#)).

Short-term Memory

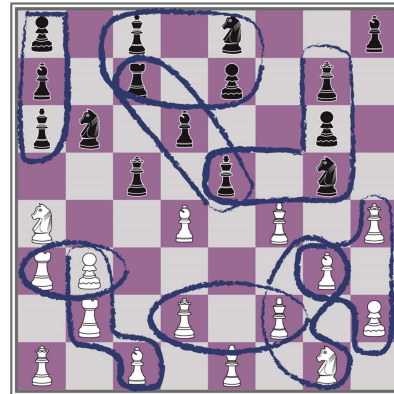
Short-term memory is limited in duration and capacity. If you don't actively engage the information, it is forgotten. Information beyond the capacity of short-term memory tends to be forgotten.

The biggest lie I tell
myself is
“I don’t need
to write that down,
I’ll remember it.”

Short-term Memory: Capacity and Chunking

Your knowledge and expertise in an area can affect your ability to chunk items.

- When shown chess pieces on a chess board of an actual game that was played, expert chess players are better able to remember the location of the chess pieces compared to non-expert chess players of a game that was played.
- However, when the chess pieces are randomly placed on the board, expert chess players are no better in remembering the location of the chess pieces compared to non-experts.



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Expert chess players chunk the board into meaningful units based on prior experience and knowledge. The greater your expertise with the material, the more efficient you can chunk information, transfer more information into long-term memory and use later ([page 269](#)).