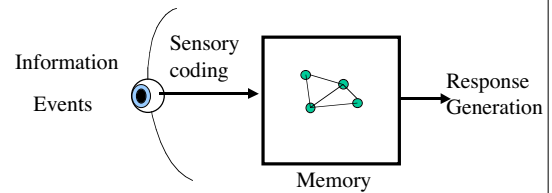Additional Study Question:

What is infantile amnesia? What does the
Hyson and Rudy experiment suggest
is a possible underlying cause of
infantile amnesia phenomena?

Information Processing Model

Information

Events

Sensory
coding

Memory

Response
Generation

Nodes = Representative elements = neural representations

Interconnections = associations

Long-term memory (LTM): elements and interconnections

Short-term memory (STM): active elements
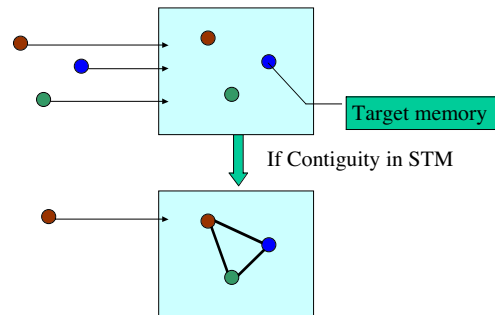

LTM: nodes and associative links

Rules of association

Contiguity (in STM)
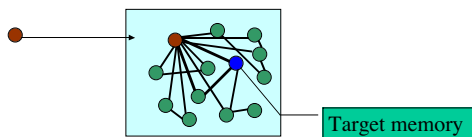Frequency (how often co-active in STM)
Duration (in STM)

Storage and Retrieval

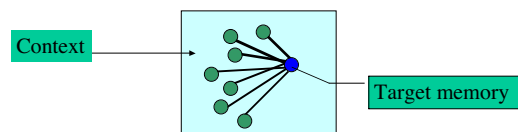Target memory

If Contiguity in STM

Spread of activation: activation spreads along
associative links.

Forgetting = Retrieval failure

Cue overload: if too many elements associated
with the presented stimuli, less likely to
retrieve (activate) specific element

Target memory

Greater chance of retrieval with rich context

Context

Target memory

Operating Characteristics (features) of STM

1. Decay: An active element will, over time, decay to an inactive state

2. Limited Capacity: Limited number of elements can be active at any given time

    Memory Span
        typically 7 ± 2
        Chunking (increase memory span by combining elements into larger units)

3. Rehearsal: ability to keep an element active.
      Maintenance
      Salience
      Surprise

Operating Characteristics (features) of STM

1. Decay:
2. Limited Capacity:
3. Rehearsal:

Delayed Matching to Sample
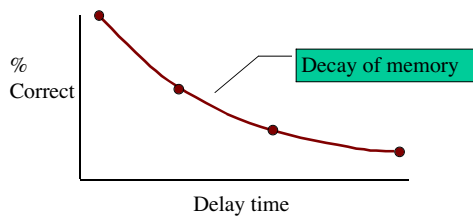
% Correct

Decay of memory

Delay time

Operating Characteristics (features) of STM

1. Decay:
2. Limited Capacity:
3. Rehearsal:

Interference Effects

	I	II	Test	
Group1	List A	List B	List B	Don't remember as many
Group2	—	List B	List B	

Proactive Interference

Operating Characteristics (features) of STM

1. Decay:
2. Limited Capacity:
3. Rehearsal:

Interference Effects

	I	II	Test	
Group1	List A	List B	List A	Don't remember as many
Group2	List A	—	List A	

Retroactive Interference

Limited Capacity: Interference Effects
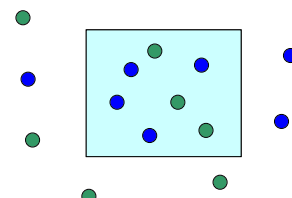
Operating Characteristics (features) of STM

1. Decay:
2. Limited Capacity:
3. Rehearsal:

Surprise —> more rehearsal
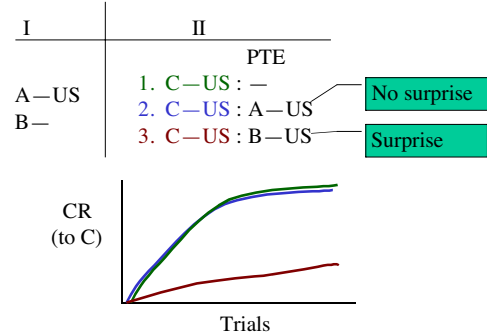
   e.g., Blocking: no rehearsal since not surprising

A—US	AB—US	—>less learning about B
—	AB—US	

Surprise and Limited Capacity

Post-trial Episode experiments (Wagner, Rudy & Whitlow)

I	II
	PTE
A—US	1. C—US : —
B—	2. C—US : A—US
	3. C—US : B—US

1. No surprise
2. No surprise
3. Surprise

CR (to C)

Trials

Surprise and Limited Capacity

Post-trial Episode experiments (Wagner, Rudy & Whitlow)

I	II
	PTE
A—US	3. C—US : B—US
B—	

Delay (allow rehearsal time)

Asymptotic CR (to C)

If give time to "process", they learn

5   300 sec

Delay of PTE