



Memory and Cognition





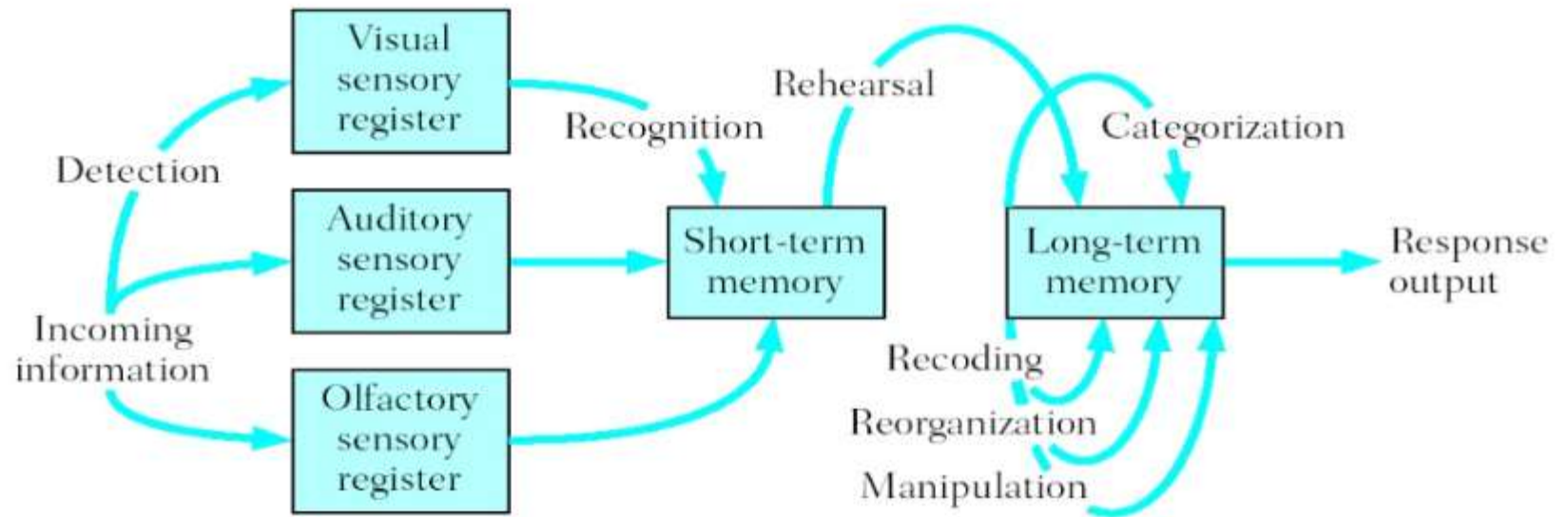


Memory

- **Basic processes**

- Encoding data or stimuli for further processing
- Storage (or transfer) of information from STM to LTM
- Retrieval involves searching LTM for stored data (consciously or unconsciously)

Information Processing Model





Memory

- **Memory recall challenge**
 - Pair up with 1-2 other students in class
 - Each person will need their own piece of paper....



Memory

- **Sensory memory**

- Brief persistence of stimuli following transduction
- Large capacity for stimuli perception but short duration
- Taste, touch, smell, vision, hearing



Memory

- **Short-term memory**

- Limited capacity but STM often easy to access and retrieve
- Prone to displacement and interference issues

A DEMONSTRATION OF THE FREE RECALL METHOD OF VERBAL LEARNING AND MEMORY

1. brick
2. truck
3. stove
4. apple
5. door
6. book
7. ladder
8. rifle
9. pencil
10. lamp
11. goat
12. cabbage
13. baseball
14. tree
15. window



Memory

- **Short-term memory**

- Serial position effect

- Rapid presentation eliminates primacy effects (but preserves recency effects)
 - Delayed recall eliminates recency effects (but preserves primacy effects)



Memory

- **Long-term memory**

- Relatively enduring and stable
- May last a lifetime (e.g. cognitive maps)
- Unlimited capacity?
- LTM can be harder to access and retrieve
 - Prone to decay, retrieval failure, amnesia, repression



Memory

Loftus and Palmer (1976)

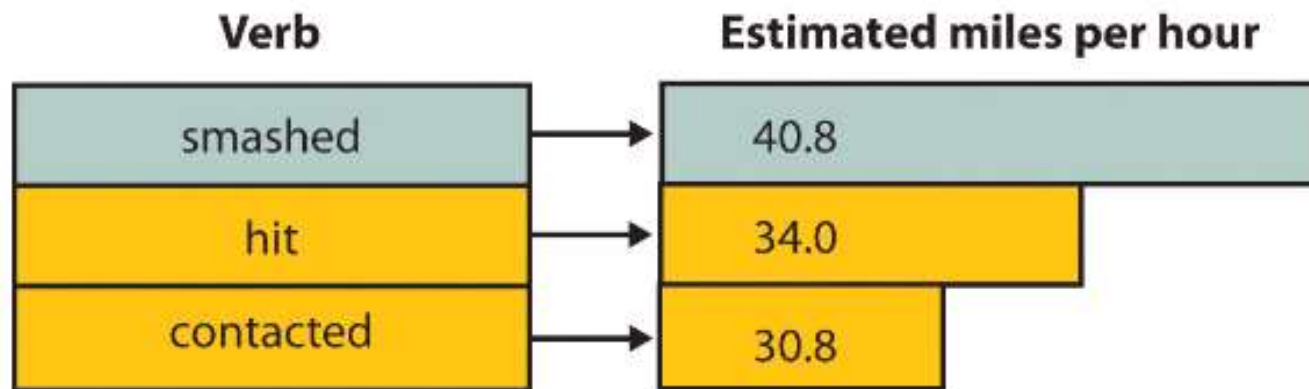
Question

About how fast were
the cars going when
they _____ each other?

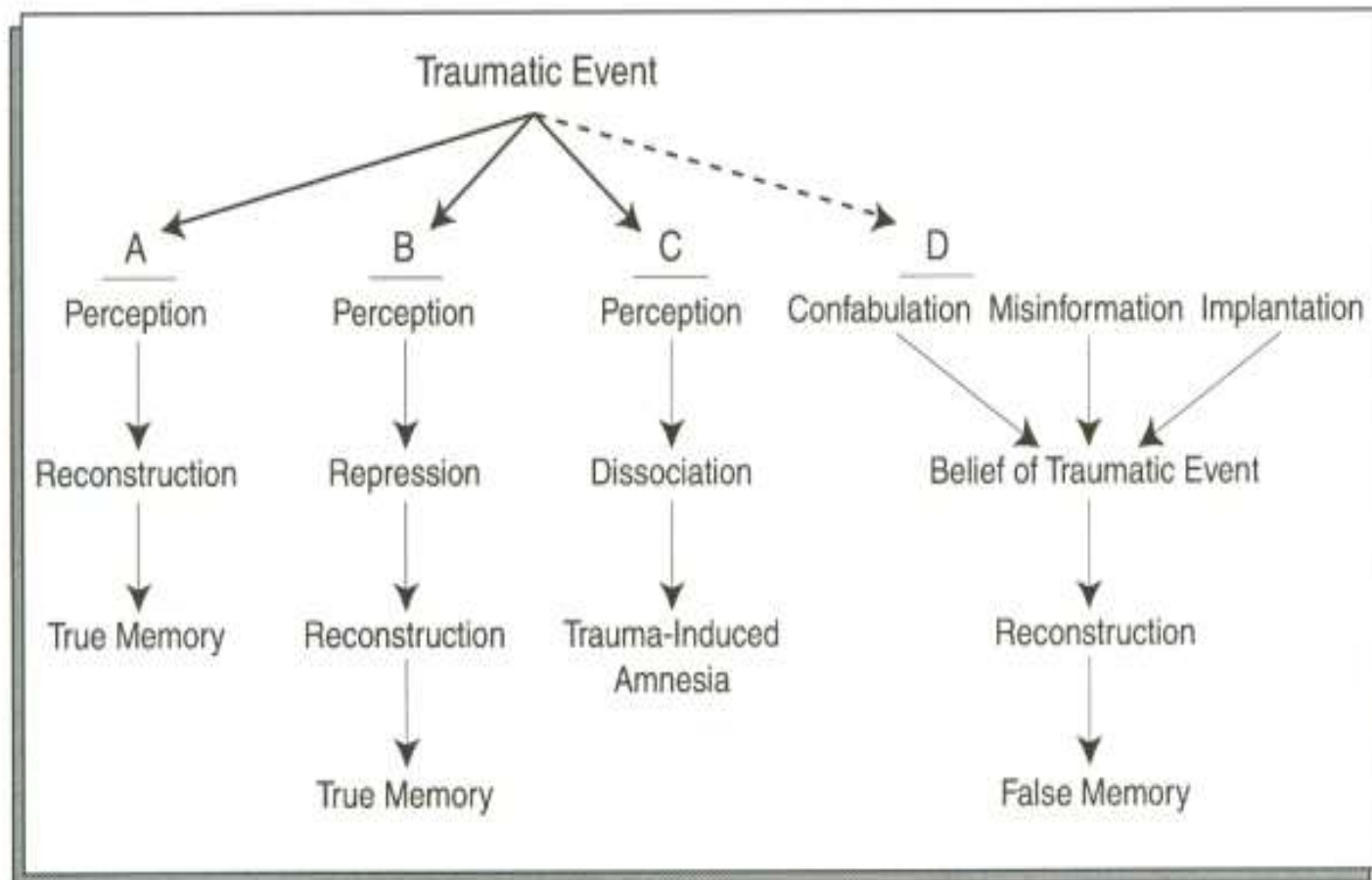


Memory

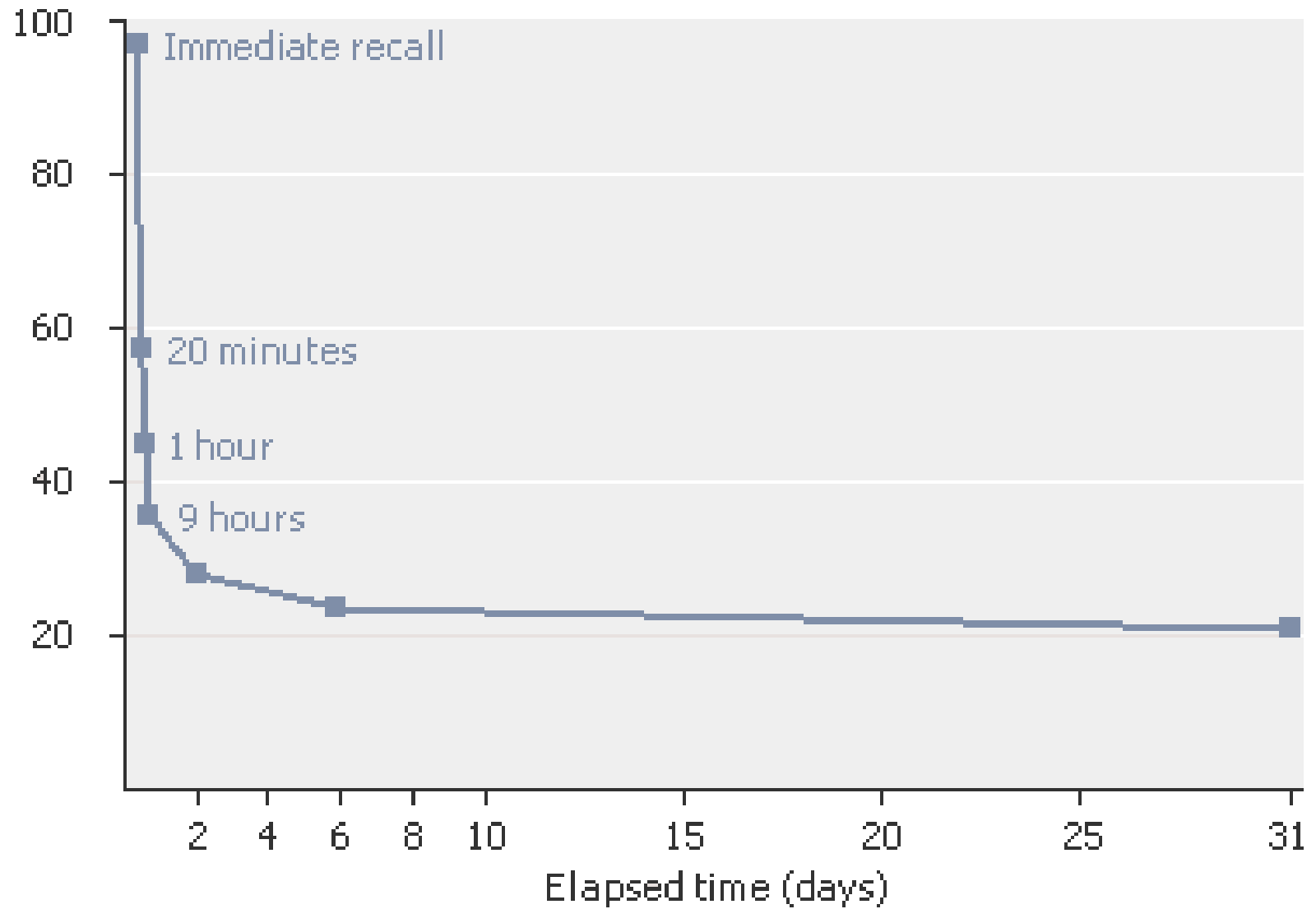
Loftus and Palmer (1976)



Four possible scenarios for the recollection of a traumatic event



Retention (percent)





Memory

- **Long-term memory**

- Declarative memory
 - Memory for facts, names, places
- Episodic memory (“flashbulb memory”)
- Implicit memory
 - Procedural memory



Memory

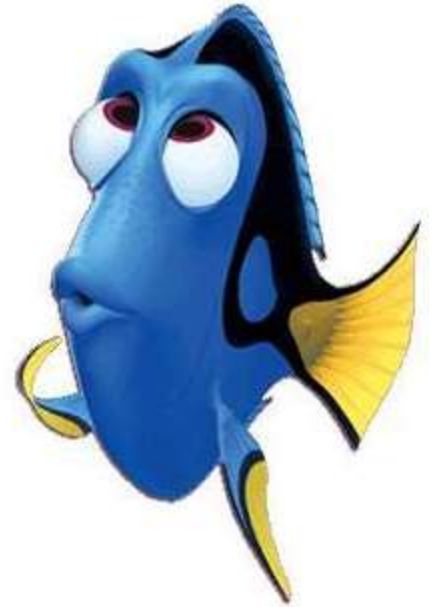
- **Long-term memory**

- Retrograde amnesia

- Inability to recall memories of the past
 - Can form new LTMs

- Anterograde amnesia

- Inability to form new LTMs
 - Info contained in STM not transferred to LTM memory





Memory

- **Retrieval and cognitive factors**
 - Eyewitness testimony
 - Suggestibility/observer bias
 - Contextual reinstatement
 - Confidence/attitude strength
 - Group size and distance



