

Understanding Learning and Memory:

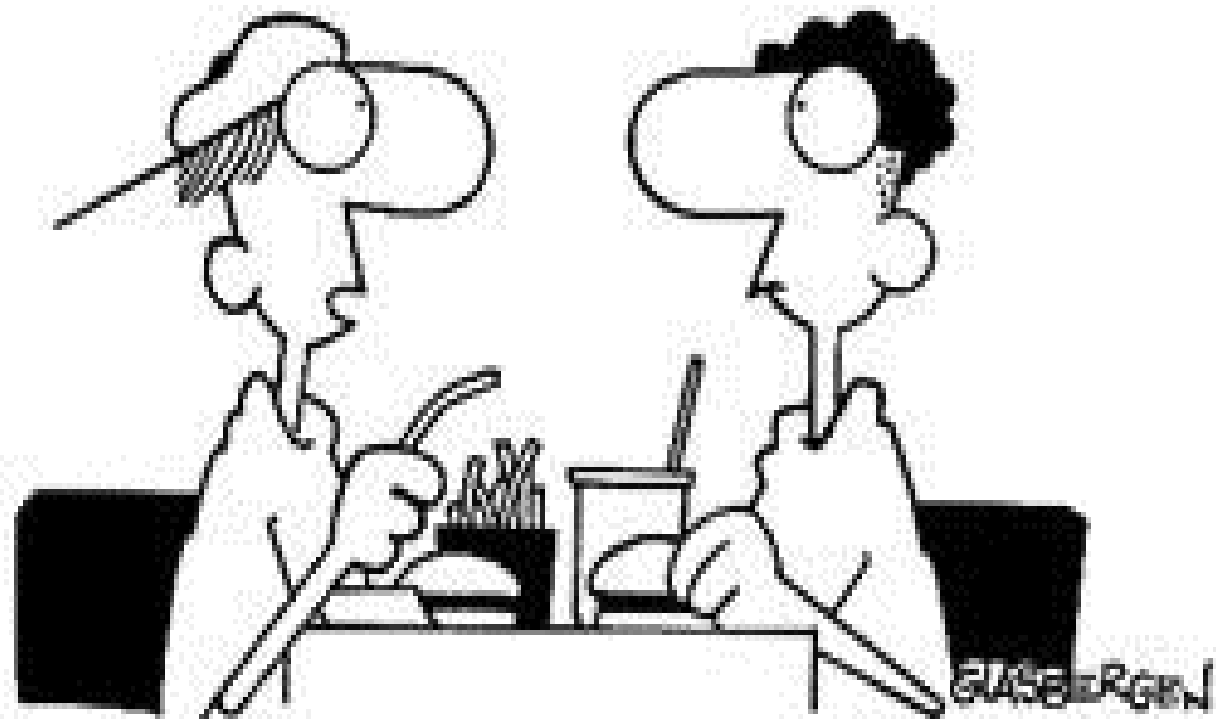
How can the information processing system be used to explain human learning?

2

- When you go to movies, how do you remember where you parked?
- How did you know where to find your keys as you rushed out to your class this morning?
- How do you remember the person's name to whom you were just introduced?

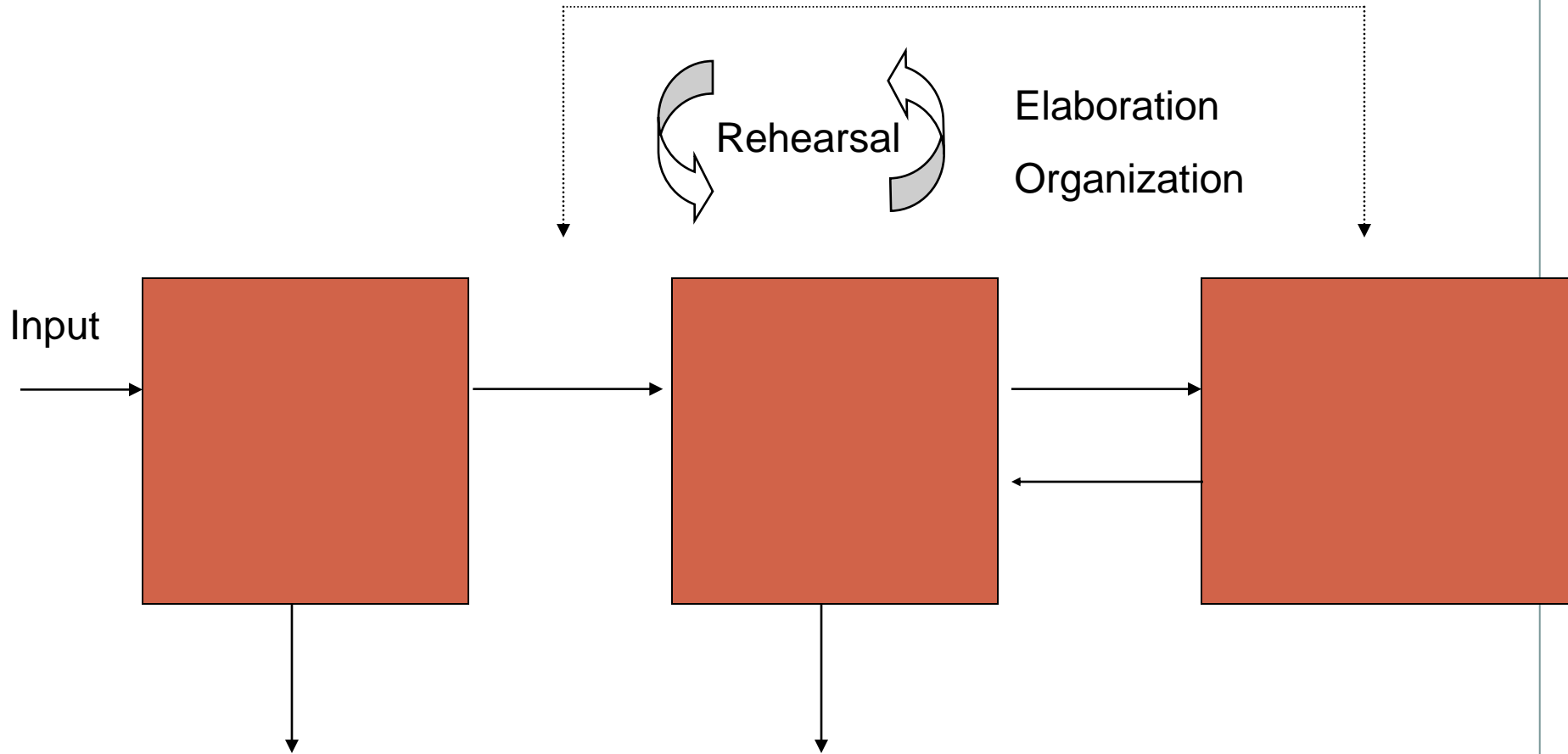
6 Components of Self-Regulation

- Motivation (Why?)
- Methods of learning (How?)
- Use of time (When?)
- Physical environment (Where?)
- Social environment (With whom?)
- Monitoring performance (What?)



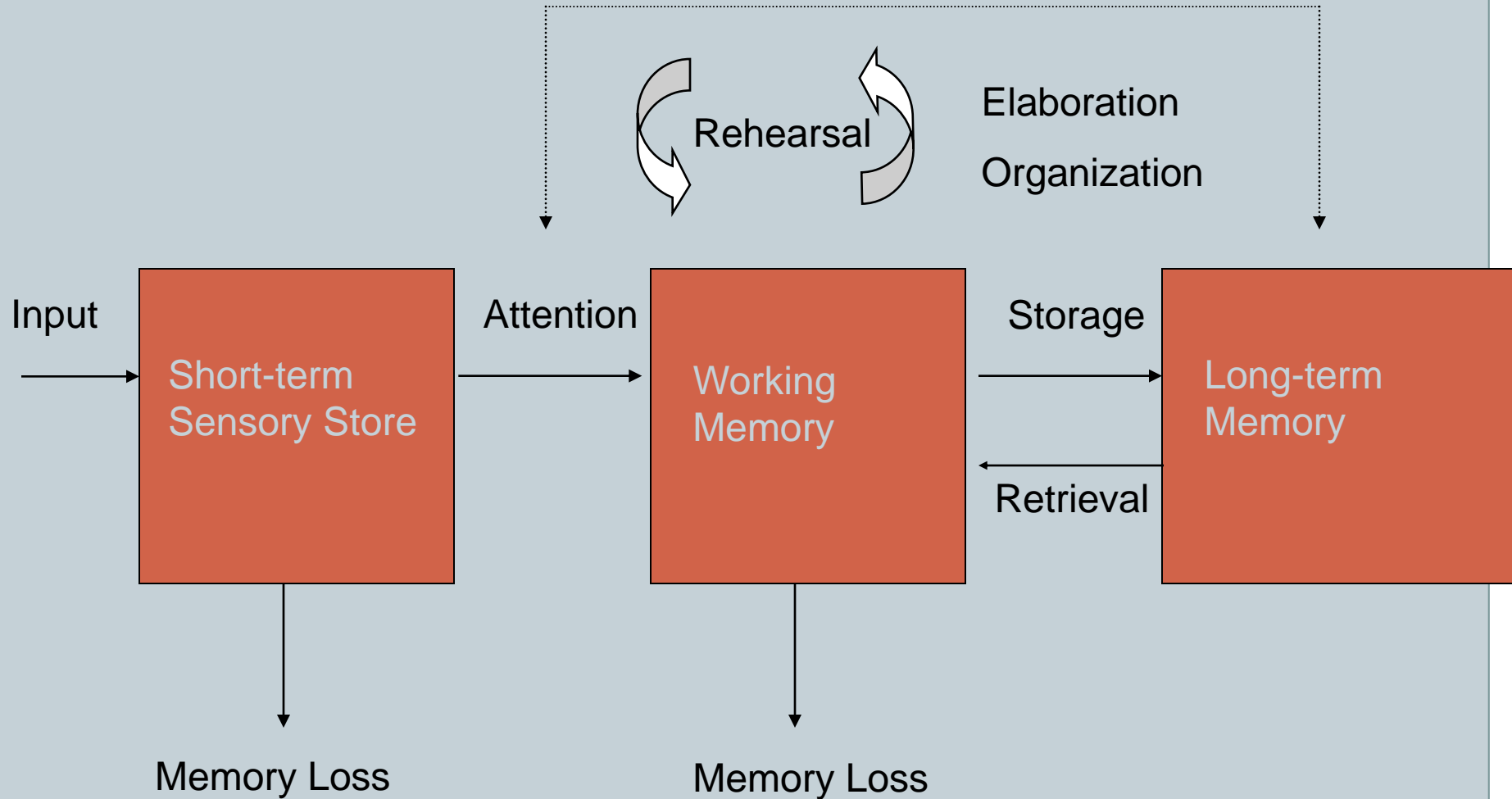
**"I forgot to make a back-up copy of my brain,
so everything I learned last semester was lost."**

A Model of the Information Processing System (IPS)



A Model of the Information Processing System (IPS)

6



How many words will you remember?

- Tree
- Piano
- River
- Truck
- Elbow
- Missile
- Hammer
- Caterpillar
- Book
- Potato
- Style
- Effort
- Quality
- Truth
- Cost
- Irony
- Tribute
- Exclusion
- Namesake
- Harmony

Key: Dual (Verbal & Pictorial) Channel Coding Theory (Paivio, 1971)

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"The matters about which I'm being questioned, Your Honor, are all things I should have included in my long-term memory but which I mistakenly inserted in my short-term memory."

Primacy-recency effect

9

- Knife, butter, chair, plane
- Stone, dog and hair
- Letter, pencil and book

Mnemonics

10

- Help Five Police To Find Ten Missing Prisoners
 - Hip - Femur - Patella - Tibia - Fibula - Tarsals - Metatarsals - Phalanges (Bones of lower limb)
- First Place Often Takes Trophy
 - Frontal - Parietal - Occipital - Temporal - Temporal (Brain lobes)

For learning the colors of the rainbow in Russian



- The first letter of each color's name matches the first letter of each word in this phrase — Каждый (красный - red) Охотник (оранжевый - orange) Желает (жёлтый - yellow) Знать (зелёный - green) Где (голубой - sky blue) Сидит (синий - blue) Фазан (фиолетовый - violet, purple). It can be translated into English as "Every hunter wishes to know where the pheasant sits." Once again **"Каждый охотник желает знать где сидит фазан"**.

Understanding the Mysteries of Memory

12

- Working memory = Short term memory
- Terminology to note:
 - Implicit and explicit memory
 - Amnesia
 - Flashbulb memory
 - Savant

	Sensory Store	Working Memory	Long-term Memory
Capacity	Large	Small 7 ± 2	Large
Duration	Very Short: Visual=1 second or less Auditory=2 - 3 seconds	5 - 20 seconds	Indefinitely long

Factors Influencing Attention

14

- Size
 - GfQdrTdFr
- Intensity
- Novelty
- Incongruity
- Emotion
- Personal significance



Which factor influenced attention?



1. Size
2. Intensity
3. Novelty
4. Incongruity
5. Emotion
6. Personal significance



Just
for
laughs
Gags

Which factor influenced attention?



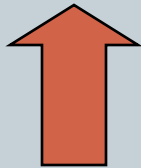
1. Size
2. Intensity
3. Novelty
4. Incongruity
5. Emotion
6. Personal significance



Attention is a limited resource.

Rote vs. meaningful learning

20



- Simple repetition
- Keeps info in WM, but does not necessarily transfer to LTM
- Passive learning



- Recognizing similarities
- Constructing personal meaning
- Encoding in LTM
- Active learning

Examples of Learning Strategies:

21

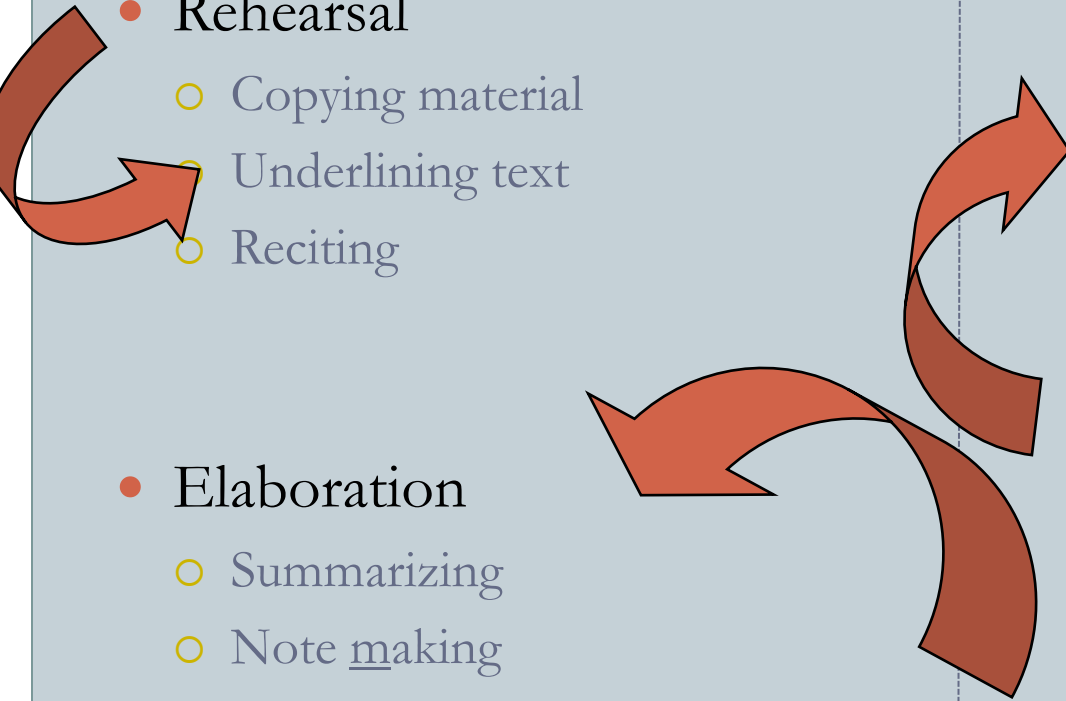
Rote learning

- Rehearsal
 - Copying material
 - Underlining text
 - Reciting

- Organization
 - Selecting main idea
 - Outlining
 - Representation
 - ✦ Visual Mapping of ideas

- Elaboration
 - Summarizing
 - Note making
 - Answering questions

Meaningful learning



7 Sins of Memory:

22

- Transience
- Absent-mindedness
- Blocking
- Misattribution
- Suggestibility
- Persistence
- Bias

Sins of omission

Sins of commission

