

MEMORY:

- **Memory Systems:**

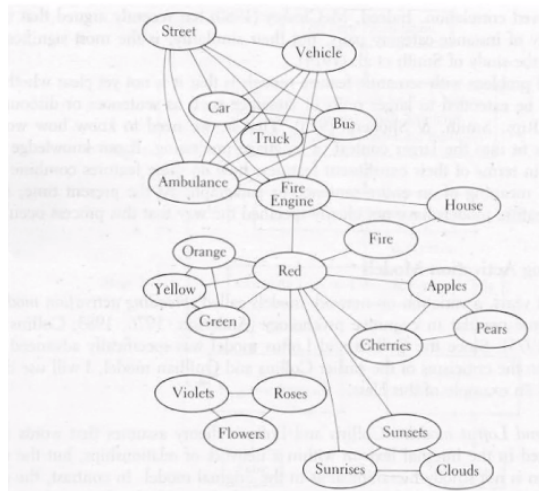
- **Short-Term Memory:** The recency effect suggest that items are temporarily held in a small, short-term buffer
 - Has a small capacity and a brief duration (temporary).
 - Part of a larger system of information currently available for processing working memory.
- **Long-Term Memory:** The primacy effect suggests that rehearsal is required to consolidate items to long-term memory.
 - Has a large capacity
 - Its duration is indefinite.
- **Key ideas from the free recall experiment:**
 - **Interference:** competition between items, decreasing the likelihood of consolidation.
 - **Rehearsal:** Repetition of an item to facilitate consolidation.
 - **Consolidation:** Movement of information from short-term memory to long-term memory.
 - **Encoding:** Representation of information to be consolidated.
- **What is forgetting?:**
 - **Library metaphor:**
 - Access cues are like indexes in the card catalog.
 - You have something that tells you the index sub-consciously of the information you are trying to remember.
 - Failure to consolidate vs. failure to retrieve.
 - If you fail to consolidate, you have lost that information and must look it up, which is different from failure to retrieve.
 - If your hippocampus is removed due to epilepsy then you are unable to form new memories.

- **Retrograde vs. Antegrade amnesia:**
 - Retrograde means backward, which means you can't recall memories before a tragic injury.
 - Then antegrade means forward, which means you can't form new memories after a tragic injury.
 - **Conclusion:** Hippocampus performs consolidation.
- **Memory Systems by the manner of encoding:**
 - **Declarative (explicit):**
 - **Episodic:** First person memory of the experience
 - Semantic/propositional/conceptual: Knowledge of facts.
 - **Procedural (implicit):** How to do things, including motor procedures.
 - **Mental Imagery:** Knowledge of the appearance of things.
- **Verbal STM:**
 - "Phone number" memory.
 - The reason phone numbers have 7 digits.
 - Phone numbers are specifically 7 digits so people can keep it in STM.
 - **Verbal encoding:**
 - Verbal distraction interferes, while visual does not.
 - If you are trying to memorize a phone number and someone next to you repeats a bunch of numbers, you will have trouble remembering the number.
- **The Mental Imagery Debates:**
 - **Kosslyn:**
 - Representations of mental images are quasipictorial analogs of real images
 - Evaluation is performed by a part of the visual system.
 - **Pylyshyn (Rutgers):**
 - Representations of images are propositional or descriptive.

- Scanning time results are due to cognitive expectations of subjects.

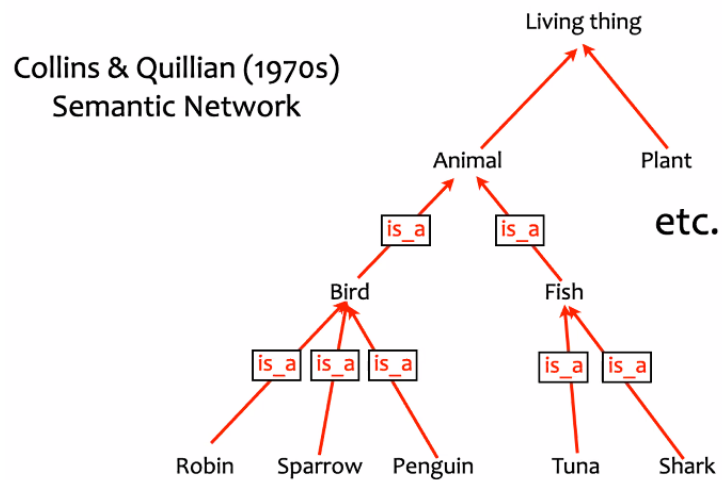
- **Association Networks:**

- Knowledge is stored in the associations



- **Hierarchical Representation of Knowledge:**

- Semantic Network



- **Property Inheritance:**

- If:
 $x \text{ is_a } y$
 $y \text{ has_property } z$
 Then:
 $X \text{ has_property } z$

- This rule allows properties to be “known” without being directly stored.
- This allows both prototypical and atypical properties to be represented efficiently
- When there is a conflict between a direct (has_property) property and an inherited property, the direct property wins.
- That is, objects are represented by properties that are distinctive relative to their superordinate classes.
- Property inheritance as a form of reconstructive memory.
- **Hume’s Problem: The Puzzle of Induction:**
 - Will the sunrise be tomorrow?
 - We may think the sun may rise tomorrow, we don’t know yet.
 - The belief that the sun will rise tomorrow is not logically certain; it is simply likely given our experience (David Hume).
 - Induction of future beliefs from past experience is merely a “habit of reasoning.”
 - Any set of facts in the past is consistent with any set of facts in the future.
 - Inductions are not guaranteed to be valid.
- **The Problem of Universals:**
 - Aristotle asked: Does the category SQUIRRELS exist, apart from individual squirrels?
 - Democritus had asserted that the world was made entirely of atoms - tiny, invisible units of matter.
 - The implication of this assertion is that non-physical things do not exist.
 - This is called atomism or materialism.
 - This implies that individual squirrels may exist, but the category SQUIRREL does not exist apart from the individuals that make it up.
 - In philosophy, the idea that universals are really just names for groups or concepts is called nominalism or conceptualism.