Storing Knowledge (Semantic)

Semantic Memory/Dementia
This is a general knowledge of objects, word meanings, facts and people (e.g. scallops live in bivalve shells).

This contrasts to episodic memory in that people will often share similar or the same semantic memories. Episodic memories on the other hand are fairly subjective and are limited to time and space.

Patient Jon suffers from **semantic dementia.** He has normal recognition, memory for facts and language acquisition but **severe impairment of delayed recall and of knowledge about properties of everyday objects.**

This disease is **degenerative** in that people with milder semantic dementia do well to point out a green celery but are not able to understand that a pumpkin is not green (as it does not fit with their schema). People with more severe semantic dementia are no better than chance.

How is memory stored?
(Collins & Quillian, 1969, Conrad, 1972; Collins & Loftus, 1975)

Concepts (salmon) have propositions or attributes that are common to all (pink, edible, swims upstream) etc.

Collins & Quillian's Hierarchical Model (1969) argues that semantic memory is a network of concepts that are stored hierarchically, with the more general concepts at the top (Animal) and more specific concepts at the bottom (Salmon). Exceptions (Ostrich can't fly) are stored a specific category level. Traversing this hierarchy takes time. They tested this assumption by testing true-false reaction times to property statements (a robin has a red breast) and category statements (a robin is an animal) with varying levels of hierarchy. The results showed that categories were faster identified than properties and the time depends on the level of the hierarchy.

Conrad (1972) questioned this principle of cognitive economy. He argued that all Collins & Quillian were doing was measuring the **degree of association** between concepts and properties (e.g. we are used to hearing a salmon being called pink or a fish but not so much an animal). Conrad controlled for familiarity and found no effect of hierarchical distance. (This could be used to support Nadel et al.'s multiple trace theory.)

Semantic categories can change definition over time (e.g. "Gay")

Meyer et al. (1976) supported this notion when she asked participants to perform a lexical decision task. Words that were related were reacted to faster than unrelated words. This is known as **semantic priming.**

Collins & Loftus (1975) Spreading Activation Model Concepts here are arranged in a non-hierarchical network on the basis of **semantic relatedness and semantic distance.** Connections are linked by different strengths. Robin would activate bird quicker than penguin.

However, this is more of a framework than a testable model.

Semantic Knowledge in the Brain

Patient JBR Warrington & Shallice (1984) found a patient who had greater problems identifying living than non-living things. This is an example of a **category-specific deficit.**

McClelland et al. (1991) Sensory-Functional Theory suggests that objects in semantic memory are **organised by function and properties (visual)** rather than living or non-lviing.

The Hub: McClelland et al. (2004) suggests that semantic hubs (or nodes) capture the deep structure of concepts and allow for generalisation.