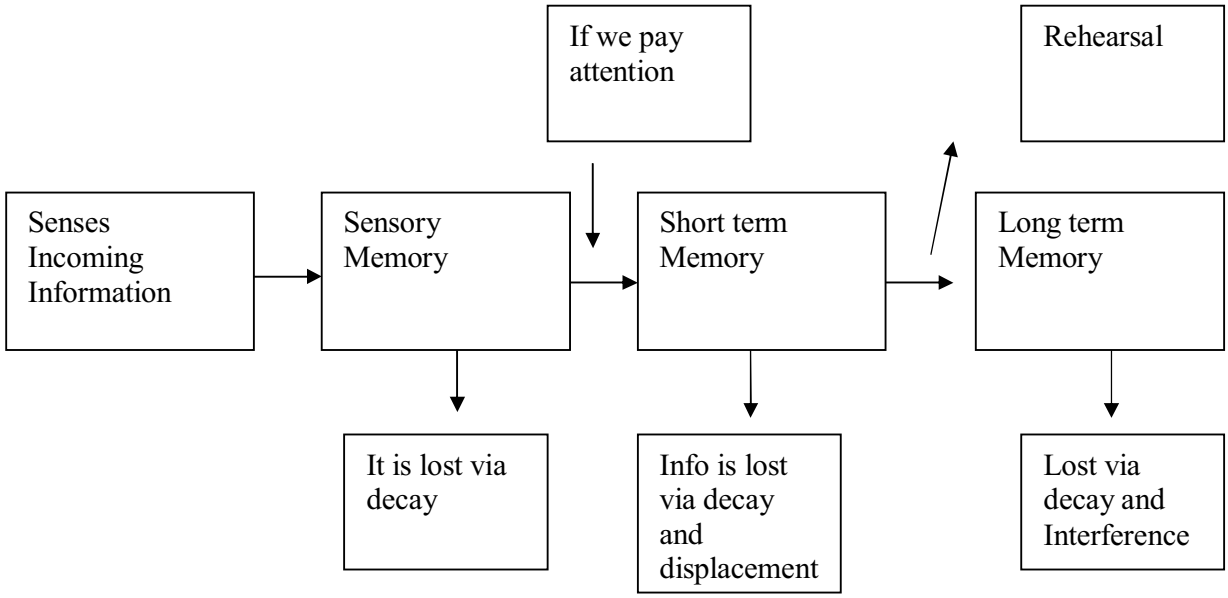
Tarif Talukdhar

Describe and evaluate the multi-store model of memory

The multi-store model of memory was proposed by Atkinson and Shiffrin in 1968.They said the memory is made up of the sensory Memory Store, the short-term memory store and the long-term memory store. A diagram of the model can be seen below:



From the model we can see the environment makes available a variety of sources of information. The information comes in through the sensory system through one of the five human senses. For a brief time it gets stored in the sensory memory store; 2 seconds for auditory and 0.5 second for visual information. The information lasts for a very short time, the experiment done by Sperling in 1960, where he showed a quick image to the participants and asked them to write the answers down, supports the theory of existence of the Sensory memory store, as participants could only remember 36% of the image on average. According to the model, if attention is paid to an external stimulus, an internal thought, or both, then it is stored in the short -term memory. It is mostly stored in auditory form. This information is lost through decay as we don't need to process and store all the information that we encounter in the world. So we simply do n't rehearse all the information, and this information just fades away not to be stored in our long term memories . Once the information from the sensory memory enters the short term memory It needs to be rehearsed for it to go into the long term memory. Otherwise the information is lost via decay and displacement this means that new information pushes out the old information as the capacity of the STM is very limited; researched by Miller in 1956 it is supposed to be 7 items plus or minus 2. For example, you are processing the words you read on the screen in your STM. However, if I ask, "What is your telephone number?" your brain

immediately calls that from long-term memory and replaces what was previously there. Decay is similar as the information disapp ears as time passes by as the duration of STM is limited. Chunking can increase the capacity of short-term memory. For example, the letters "b d e" constitute three units of information while the word "bed" represents one unit even though it is composed of the same number of letters. Chunking is a major technique for getting and keeping information in short -term memory; it is also a type of elaboration that will help get information into long -term memory. Peterson and Peterson found in an experiment that 90 % of participants recalled trigrams after 3 seconds, and only 10% recalled after 18 seconds. This evidence shows that without rehearsal information in the short term, memory lasts for only 18 seconds. Otherwise the information is lost through decay and displacement.

Rehearsal is a technique that we use to learn something. This transfers information into our long-term memory store. The duration and capacity of LTM are supposed to be unlimited. According to the model, the way of losing information from LTM is forgetting due to decay or interference. This happens when similar memories interfere with each other or when new information interferes with the retrieval of previously learnt information. Evidence to support long term memory was supported by Murdock. Murdock found that if subjects are presented with 20 or more words individually and then asked to recall them immediately in any order, then the words near the beginning and end of the list are more likely to be remembered. Murdock suggested that this is because the first few words were likely to be rehearsed and transferred to LTM, the primacy effect, but as more words were presented there was no chance to rehearse or transfer these. Those words at the end were recalled because they were still in STM, the r ecency effect. This supports the idea that there are at least two separate memory stores – the short-term and the long-term.

In conclusion the multi-store model provides a account of the structures and processes involved in human memory. The main weaknes s with the multi-store model of memory is that it is over simplified, as it implies that there are only two memory stores, one short-term and one long-term this was suggested by Murdock, and that memories are only stored through rehearsal, but this does not seem to be true in real life, as many memories are stored not having been consciously rehearsed, this model does not account for this. However the model does provide evidence that there are two different memory stores. Studies of patients with korsakoff syndrome which is a chronic alcohol syndrome. Have a perfectly functioning STM but the information cannot be passed on to the LTM. This shows that there are two different memory stores, evidence by Shallice and Warrington also supports the fact there are two different memory stores. They reported a case study where a man suffered a motorbike accident; this accident ruined his STM because he only had a digit span of 2 digits. However his long term memory was completely normal this suggest that there is 2 dif ferent memory stores.