

## Case Studies

*The multi store model is the process of long term and short term memory. It explains what each type of memory is. Short term memory is memories which are less important, while Long term memory is memories which are very important.*



*In a case study, nearly every aspect of the person's life and history is analyzed to search for patterns and causes for behaviour. The hope is that learning gained from studying one case can be generalized to many others. On the other hand, laboratory experiments are carried out in a laboratory where variables are controlled. Therefore it does not apply to the real world, which means that it has a low ecological validity.*

*The case studies relating to the multi-store model are Clive Wearing and H.M case studies. Clive Wearing contracted a virus in 1985; the virus attacked an area of the brain crucial for memory, which left him, leaving with amnesia. He has no memory of any event or memory in his life.*

*Clive Wearing can remember: -*

- *his wife not his children or any other family members*
- *how to play the piano – but he is unaware of it*
- *key numbers and names from early childhood*
- *speech and has a good vocabulary*
- *and read and write – doesn't remember doing either*

*The case study of H.M who suffered from epilepsy of such severity that it couldn't be controlled by drugs. H.M underwent a drastic surgery, surgeons removed the hippocampus (small structure found in both hemispheres of the forebrain) from both sides of his brain. H.M's personality and intellect remained intact but his memory was affected. He had no memory for events following the operation. His memory for events prior to the operation was reasonable, however, not as good as before. He could still talk and recall all the skills he previously knew but his memory didn't incorporate new experiences.*

*In conclusion, the case study of Clive Wearing provides evidence for the multi store model, because it shows that Clive Wearing can remember long term but cannot remember short term. This means that he has lost his short term memory leaving him with only long term memory from his childhood. The case study of H.M is also similar; H.M's long term memory was intact but he had no ability to update it, this means that he couldn't use his short term memory. Without short term memory H.M couldn't transfer data to long term memory but he could still use his long term memory this means he couldn't rehearse. This case study provides evidence for the multi store model because it suggests that the hippocampus may be a specific location for the short term memory.*

*These findings are useful because case studies apply to the real world because it is a detailed study of an individual person; this means that these findings are useful because it has a high ecological validity. A case study is a study of a individual therefore it will be about that individual only however, the information found from one case study can be used to find out information about another case study which is similar to that case study. For example – the case study of Clive Wearing and HM are similar because they are both related to the multi store model therefore both case studies can be used to collect more information. Case studies can be trusted because it is a study of a individual therefore they will know what's happened to them and other information which makes the findings useful and trustworthy.*

*The laboratory experiments which have been conducted have supported the multi store model because the cause and effect can be determined and that there is good control over the variables. The experiments I have looked at are the experiments carried out by Glanzer and Cunitz, and by Sperling.*

*Sperling's experiment consisted of three rows with four letters in each row, he presented this to a group of participants for fifty milliseconds. After the participants were asked to report as many letters from the display as they could. On average, participants could report no more than four to five letters.*

*Sperling decided to sound tones of different frequencies, with each frequency indicating a particular row to be recalled: a high-frequency tone to indicate the first row; a medium-frequency tone to indicate the middle row; and a low-frequency tone to indicate the bottom row. He found that, if the tone was sounded immediately after the letters had been flashed on the screen, most participants were able to recall all four letters in the indicated row.*

*Sperling's conclusions –*

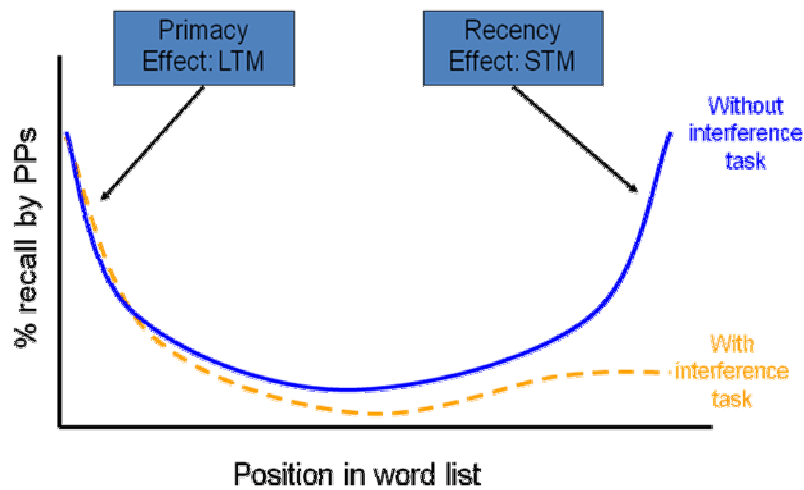
- Information from a brief visual stimulus is stored in a high capacity sensory known as the iconic memory.*
- The Sensory Store*
- Information takes time and has to be fully processed to be encoded to STM*
- Information in the Sensory memory remains briefly to be processed*

*Glanzer and Cunitz experiment - Participants hear a list of words. Asked to recall them in any order (free recall)*

*Condition 1: immediate free recall*

*Condition 2: free recall after interference task*

*To obtain results, plotted position of each word in the list against how many of the participant's recalled it.*



Results: -

- Participants recalled more words at beginning (primacy) and end (recency) of the list
- The interference task removed the recency but not the primacy effect

*This implies that primacy words were stored somewhere different to recency words. This means that we have two separate memory stores.*

*Both of the laboratory experiments which have been conducted supports the multi-store model by proving evidence of how we have two separate memory stores which are long term memory and short memory. As well as information takes time because has to be fully processed to be encoded to the STM.*

*Lastly, laboratory experiments can not be trusted because they don't apply to the real world; this means that it has low ecological validity. As the experiment takes place in a laboratory, the experiment does not relate to the variables that exist in the real world which shows the lack of external validity. The experimenter creates a artificial nature to give the participants a feeling of the environment which the experiment is related to. Laboratory experiments can be tested again in the future to make sure the data found before were correct and to add further information to it; however, as the participants are told what the experimenter is experimenting for they might try to please the experimenter (demand characteristics). This means that the results are likely to be biased.*

*In conclusion, I agree that case studies provide better evidence for the multi-store model than laboratory experiments because they have a high ecological validity and provide a detailed article of how the individual felt, what caused the individual problems, where it happened, what was affected and other information. Laboratory experiments have a low ecological validity therefore it does not relate to the real world. Also the artificial nature the experiment is carried out in, the environment is made up which means that it doesn't relate to real life. This means that case studies provide better evidence for the multi-store model.*