

Describe and evaluate the multi store model of memory essay



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Atkinson and Shiffrin's (1978) proposed the idea of the Multi Store Model.

The Multi Store Model (MSM) is a structural model. It argues that there are three store stores, the sensory, short term and long term memory which are all unitary stores, they work alone. Each store has a different capacity, duration and way of encoding. Any stimulus you come across has been through at least one of the stores and information passes through store to store in a linear way. Encoding is the form in which memory is retained, duration is how long information can be retained for and and capacity is how much information the store can retain.

The sensory memory encodes information through the senses. It has a duration of a few seconds and a capacity of 4.

The short term memory encodes information acoustically. It has a duration of 18-30 seconds and a capacity of 7 ± 2 . Peterson and Peterson conducted an experiment on the duration of the short term memory. They got students to recall combinations of three letters (trigrams) after longer and longer intervals. They found that the longer the distraction the less likely they were to recall correctly. They also found that on average information decays after 18 seconds and that after 3 seconds 80% recalled correctly however after 18 seconds 10% recalled correctly.

The long term memory encodes information semantically. It has an unlimited capacity and duration. Bahrick conducted an experiment on the duration of the long term memory. He investigated the recall of Spanish as a second language in participants who had not practiced the language in up to 50

years. He found that recall fell sharply after the 3 years then after the that a significant amount continued to be available.

One strength of the multi store model is brain scanning. Mri scans show which part of the part is being used for certain things. Glanzer and Cunitz conducted an experiment and found evidence for the primacy and recency effect, supporting the idea of the short term memory and long term memory. In the first condition they read out 20 words and got participants to write down as many as they could recall. In the second condition they then repeated the task but with a 30 second distraction task between the words being read out the participants being told to write down as many words as they could recall. This prevented them from being able to rehearse information. They found that participants in condition one recalled accurately from the beginning and the end of the list showing a primacy and recency effect. Participants in condition two however only managed to recall items from the beginning of the list(primacy effect). This supports the MSM as it shows evidence of there being unitary stores, the primacy effect showing evidence of the long term memory and the recency effect showing the short term memory and its duration.

However, They show different parts of the brain are being used for different types of memory weakening the MSM's argument that the stores are unitary and have one method of encoding. For example the case of Clive Wearing, a amnesic patient. His short term memory lacks duration. In his long term memory, his autobiographical memory is partly intact yet his procedural memory is intact fully. This shows there isn't just three stores, and that there are different kinds of memory.

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This leads on to the working memory model (WMM) This theory was proposed by Baddeley and Hitch (1994) who contested that the short term memory is not unitary, there is more than one component. Instead of all information going into one single store, there are different systems for different types of information. The Working memory consists of a central executive which controls and coordinates the operation of two subsystems: the phonological loop and the visuospatial sketchpad.

Baddeley and Hitch also conducted an experiment called ' the dual task technique'. They concluded from this that the short term memory must have more than one component and must be in processes other than simple storage eg reasoning understanding and learning. The short term memory is also more than just a unitary store. It can handle and process visual and acoustic information at the same time. They also concluded that two tasks can be carried out simultaneously in the short term memory provided that they are being dealt with by different parts of the brain, weakening the MSM because it shows there are more than one function to the short term memory.

Similarly, Forde and Humphreys (2002) study on Amnestic patient F. K found evidence that the short term memory encodes semantically not just acoustically. Patients were given new words and known words to recall. F. K made more errors pronouncing the new words (unknown) suggesting that meaning was being used. This contradicts the multistore model because it shows the short term memory is able to encode in more than one way.

Another limitation is that the multistore model focuses too much on rehearsal. It argues that for us to remember things and for them to be transferred into our long term memory they must be rehearsed. This is not always the case. Things such as birthdays we remember yet we do not have to rehearse them. Similarly the multistore model ignores the effect of meaning, for example we remember things which are more important to us rather than things which may be less important to us that we rehearse.

In Conclusion, the multistore model has good explanatory power however over simplifies the functions of the stores claiming they are all unitary for example the short term memory is able to handle and process visual and acoustic information at the same time