

Comparison of memory models psychology essay



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This assignment is going to compare the multi-store model Atkinson and Shiffrins (1968) and levels of processing Craik and Lockhart (1972) there is evidence to support both theories and evidence against. The essay will firstly describe the multi-store model with several studies including Baddeley (1966) Peterson and Peterson (1959) and then a brief description of the levels of processing model with Craik and Tulving's (1971) and Tyler et al (1979) studies then will end with an evaluation of both models

The multi-store model was the first theory of its kind, it was created to study the way memory is processed, and how we retain and store information and why some information stays with us for all our life and other information is lost.

Atkinson and Shiffrins (1968) believed that when we attend to information it then goes into different stores and this determines whether the information gets encoded into our long term memory or short term memory. (Grahame Hill 2001)

So firstly when information goes into our sensory store (sensory store meaning anything we touch, see, smell or hear) we have a couple of seconds to attend to the information if not the information will be lost forever but if attended to then it will become encoded into our short term memory. However even when information is in our short term memory if it's not rehearsed then it can still be displaced but if rehearsal has taken place then it's more likely to be stored in our long term memory

The Baddeley(1966) study supports the multi-store model, he set out to achieve information on whether encoding in short term memory was acoustic or semantic.

He gave his subjects a list of four letter words. The lists were acoustically similar and dissimilar and semantically similar and dissimilar. He then read out the words four times, immediately after the subjects was given a list containing all the words he had read out but in the wrong order their task was to rearrange the words back into the correct order this was to test the short term memory

His participants that had been given acoustically similar had worst recall with only 10% of recall of words being in the correct order and the rest of the lists got a 60% to 80% recall so therefore short term memory has better acoustic encoding memories. So this study supports the multi-store that we have a short term memory store. Overall the outcome is that multi-store model is the basic explanation of memory and is very simplistic and Baddeley's theory suggest that the short term memory is more complex.(Barbara woods 2004)

Peterson and Peterson (1959) is also another theory that supports Atkinson and Shiffrins (1968) multi-store model regarding short term memory their experiment tested the duration of short term memory. They gathered a number of subjects and shown them nonsense trigrams (ptr, rtw) they tested recall after three second intervals and then tested recall after eighteen second intervals. This was to demonstrate if the information got encoded into their sensory store or short term memory.(www.....com)

Their finding was that the subjects got a greater recall 90% on the three second interval and only 2% on the eighteen second interval. This proved that we have a poor memories when we don't have a verbal rehearsal which agrees with Atkinson and Shiffrins (1968) theory that you have to rehearse information for it to be encoded into our memory stores

Also there is Craik and Lockhart's (1968) model that suggests that rehearsal is not the only form of memory and that it's more complex so they studied the depths of processing. This proved once again that the multi store model was too simplistic. (Richard gross and Geoff rolls 2003)

The multi-store model explanation is basic and it only explains encoding, storage and retrieval. It's a very simplistic theory that other physiologists have elaborated on. Baddeley's (1966) theory supported the multi-store model that we have two separate memory stores short term and long term. The multi-store model does not explain why we can remember information in our short term memory that we have not rehearsed.

Levels of processing

Levels of processing was created as an alternative that challenged Atkinson and shiffrins multi-store model Craik and Lockhart (1971) argued that rehearsal alone could not explain how people stored information in their long term memory, so they set out to prove that information is more memorable when its more meaningful. Craik and Lockhart (1971) believed that it was down to how a person processed this information; the deeper it gets imbedded then more chance that it will get encoded into the long term memory and that they was three types of proceeding Organisation,

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Distinctiveness and elaboration. To prove this they did an experiment.

(Richard gross and Geoff rolls 2003)

Craik and Tulving(1971) gathered a number of subjects together and shown them a list of 5 letter nouns and then asked questions about the words.

Questions was in three different styles case rhyme and sentence questions, case question; would be is the word in capitals, rhyme question; does the word hat rhyme with the word and lastly sentence question; would the word hat fit into the sentence; the Is down the street. The subjects could only answer yes or no to the questions. Craik and Tulving (1971) then studied the findings, review the answers that the subjects have given to find out which has the greater recall so there for a deeper level of processing (Grahame hill 2001) (Richard gross and Geoff Rolls 2003)

Their findings was in favour of sentence questions which falls under semantic processing with the subjects remembering 70% of the words so semantic processing has a better recall then rhyme question which is phonemic processing with the subjects remembering 35% of the words for recall and shallow processing the least with only 15% of the words being recalled. So shallow processing takes less thinking about and as a result the information will be less likely to be stored in your long term memory. Phonemic the subjects had to think a bit more about the answer, so some of the information got in encoded and semantic was the best overall due to the fact that the subjects had to think even more so the information got encoded deeper so had the best recall. (Nicky Hayes and sue Orrel 1931)

There are other studies that have been created that have agreed and disagreed with Craik Lockhart(1971) theory that it's all down to the depth of processing to which you get recall . a theory that disagreed with the theory was Tyler et al (1979) He did an experimental study which involved anagrams. two sets. One difficult example " rtoodc" and one easy example " doctro". Now if Craik and Lockhart's theory was to be proven right the subjects should have come up with the same result as it's the same word so the depth of the encoding should be the same, so recall should be the same. The subjects got better recall with the harder anagram which suggests that the more time you pay and effort will get a better recall.

Levels of processing takes into account the effects of processing not just rehearsal and elaborates on deeper processing, organisation, distinctiveness and elaboration. Levels of processing gives us ways to improve memory finding information that is distinct. An argument against this theory is who defines what deep processing is? Plus if semantic processing produces better recall therefore semantic processing must be deeper leading to better recall so it's a circular argument.

Memory is a complex system with a vast amount of other psychologists undertaking studies to try and find an insight into how we remember information. The multi-store model even thou it's a very basic and simplistic it was a great first attempt at understanding memory and gave future psychologists somewhere to start from. Atkinson and Shiffrins (1978) model does not explain why some information does not need rehearsal but still gets encoded into our memory. However even when rehearsal has taken place, it's not always enough to transfer the information from short term to long

term memory store. Although with levels of processing the model is more descriptive and looks into the different types of processing. But the model does not explain why these different types of processing lead to better recall. Craik and Lockhart's (1972) theory also assumes that semantic processing is deeper than phonemic but there is no evidence to prove this.

Therefore both models have weaknesses and both have evidence that supports and backs up the models. The multi-store model is always going to be the basic theory that other psychologists elaborate on and therefore this assignment is more in favour of the multi-store model than levels of processing due to the fact that there is more evidence to support that there are different memory stores and that when we receive information it then gets encoded and if rehearsed there is a chance that the information will then be stored into our short term or long term memory store.