Two different theories of memory processing

This assignment will explain two different theorys of memory processing. The two models are Atkinson and Shiffrins Multi store model and Levels of processing by Craik and Lockhart (1972).

These two studies have been considered in order to give conclusions, based on studies and evidence to support these, and have indicated strengths and weaknesses for each study.

The Multi store model By Atkinson and Shiffrin (1968) was the first theory that attempted to explain the memory processes which then lead to later psychologists challenging this model of memory.

Each part of the Multi store memory model looks into the capacity of our memory, duration, and types of encoding in which we use to store memories.

This model explains and demonstrates how we first encode data or information and store it and how it determines whether it goes into our short term memory or long term.

The first stage of the model shows how we first encode data or information , which goes into our sensory store which Atkinson and Shiffrin believe this, is a very limited duration from anything to milliseconds up to possibly two seconds. Our Sensory awareness makes us aware of sight, smell, sound, touch. The capacity of this store is immense but is not always necessarily paid attention to therefore we may not be able to retrieve this information unless it has some significance to us.

The Multi store model then shows that if information is not attended to it is usually “ lost” and doesn’t make it into our short term memory, whereas if it been attended to it will stay in our short term memory.

The next stage of the model then demonstrates that if information is rehearsed or repeated or makes a big significance to us it will then be stored into our long term memory possibly forever and is easier for retrieval.

The Multi store model was the first theory and attempt to explain how we retain information in our memory. The model focuses on Acoustic encoding (words being repeated) or rehearsed which has given psychologists a base to develop other theories on memory and challenge this model.

Although Long term memory (Ltm) and short term memory (Stm) have different ways of encoding and have different capacities, Atkinson and Shiffrins Experiments and theories focus mainly on rehearsal, which was questioned in 1972 By Craik and Lockharts model.

Craik and Lockhart thought that rehearsal may not be needed for a memory to form, as well as when tested their theory showed that rehearsal didn’t work and it is not always enough to transfer data or information from short term to long term memory.

Studies that support this theory of rehearsal have been studied by Psychologists Murdock (1962) and Milner(1967) in which tests and experiments with memory were carried out, and the results indicate that through rehearsal of words , these were stored and re called more accurate.

Murdock (1962) asked participants to learn and rehearse lists of words and recall them freely. He found that words that appeared earlier then at the very end of the list were recalled more accurately due to rehearsal.

Those words in the middle of the list were often lost or forgotten and were harder to recall because they hadn’t had time to be rehearsed. Murdock thought that words that were first and end of the list were more rehearsed by trying to remember them that they got stored into our long term memory.

Words in the middle of the list didn’t have the time to be rehearsed so very often were either lost or went into short term memory. (Page 157 Longman study guides)

Milner’s study also supports the multi store model of rehearsal; he looks at patients who’d suffered brain damage, strokes and various illnesses.

Milner discovered that elderly patients and stroke patients had problems with short term memory and information was often lost by not being able to successfully transfer short term memory to long term memory. Patients who suffered brain damage or alcoholism tended to have better long term memory as opposed to short term.(Richard Gross pg 250 fourth edition).

These studies both support the Attkinson and Shiffrins theory of memory by giving evidence of two stores of memory long term and short term.

Although this was the first memory model it gave future psychologists an insight into how memory is created and allowed them to develop more advanced, deeper thought into the subject.

The Multi store model is simplistic and was very influential for Psychologists. The Multi store model explains the process of memory clearly and simply it only gives encoding, storage and retrieval. The studies of psychologists do prove that we can retrieve information more easily (but only from two stores) when its been rehearsed because of the nature of the studies carried out on this theory.

After the Attkinson and shiffrin model, Craik and Lockhart (1972) proposed levels of processing (LOP) as an alternate to the Multi store model.

They looked into deeper levels of processing of memory and argued that rehearsal alone could not explain long term memory, and that it is not how many times information is rehearsed, it is how deeply it is processed.

Craik and Lockharts theory explains that their are other deeper forms of processing, this is because unrehearsed memorys can be retrieved from long term memory in which Attkinson and shiffrins model cannot explain.

Their theory proved that information is encoded more deeply when it is more meaningful, and found three processes of how we encode memory.

Organisation of information was proved to have good recall as information was easier to retrieve when organised. Distinctiveness or if the memory was meaning full also would be easier for retrieval if it had a certain impact or influence on the individual.

Another key to memory was elaboration of a memory was more likely to be stored into long term memory as its been attended to more deeply.

This theory of deeper processing was proved by (Craik and tulvin 1975)

Craik and Tulvin presented candidates to take part in an experiment in which questions were used that could only be answered with yes or no answers.

The questions were in three categories either Case questions (shallow processing) Rhyme questions (Phonemic processing) and sentence questions (Semantic processing) questions that needed deeper thought.

An example of a semantic question was “ Would the word ” rain” fit into the sentence ” He kicked a ball into the .....? (Richard Gross 2001 pg 256).

The obvious answer is no , but it the deeper level of processing in which Craik and Lockhart wanted to study in more depth.

The participants were then given a recall test of words that had been presented in the earlier questions and found participants had better recall of words that used semantic encoding rather than case or shallow.

This experiment showed that shallow processing meant it was less likely to go into long term memory as it didn’t need much thought or attention, whereas Semantic processing meant that if something is more attended to it is more likely to go into our long term memory store.

Levels of processing is an advanced theory to the Multi store model. It elaborates much deeper into the memory process by taking into account processing, distinctiveness and organisation which all are thought to play a key role in how we store memory.

The Levels of Processing is a very descriptive model but not as explanatory or simple as the Multi store model.

However this assignment is more in favour of the Multi store model as it’s a much simpler model in which has been modified and made more complex by psychologist.

Milner’s study of memory provides real life evidence by using patients with brain damage and other related illnesses, which enables to give accuracy to the theory and evaluate short term and long term memory which agrees with Atkinson and Shirrins theory of two stores of memory.

Some psychologists argue against Levels of process that if Semantic processing produces better recall, then Semantic processing must be a deeper processing of memory leading to better recall. Therefore it’s a circular argument