

Research review on accuracy of memory



**ASSIGN
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Explain and evaluate what research has taught us about why our memories are not always accurate.

Memory is a mechanism whereby the brain stores and retrieves information to be used in everyday life. Psychologists have come to understand the existence of memory, as we do not continuously re-learn information every time it is of need. This is what lead psychologist's to develop three key processes in memory. These are encoding, storage and retrieval. Encoding processes take in information from the outside world using the senses. Each piece of information is given a unique code to enable it to be entered into the memory system. Storage processes use this coded information to enable the memory system to retain information. This coded information is stored as internal representations which come in varying forms such as words, faces, sounds etc. Retrieval processes enable access to the stored information and come in two forms, recognition and recall. Recognition matches coded information which is stored to what is being perceived in the outside world whereas recall (brings information that is stored to your attention.) involves searching memory stores. Recall is what helps you to remember where you last placed an object such as your wallet. These three memory processes work together, therefore, how well and how much information is encoded then determines how much is stored and retrieved (Brace, 2007, pp113-114). This essay will now explain and evaluate what research has taught us about why our memories are not always accurate.

One possible reason for memory inaccuracy is the presence of neuropsychological impairment or accidental brain damage. Localization of function is a theoretical method that believes particular areas of the brain play a key role in functions such as memory. When studying this, psychologists use brain scanning technology such as positron emission tomography (PET) and functional magnetic resonance imaging (fMRI). Patients are asked to complete certain mental tasks during a scan. The scans can then pick up brain activity and pin point which part of the brain is not functioning correctly. This can enable psychologists to understand why or how their memory may not be accurate and help in patient's recovery. Unfortunately for some, the damage may be too severe and incurable. This can be seen in patients suffering from Alzheimer's and dementia. (Brace and Roth , 2007, pp144-145[p2])

Research conducted by (Martin) Conway and colleagues looked at how well students retained information, over a 12 year period, after completing a cognitive psychology course. The experiment tested for general overall knowledge of what was studied and they found that names were forgotten rather than principals and statistics. This is possibly due to less information being coded to a name than that of principals and statistics when information was originally taken in [p3]. This could be seen as a limitation as important information can be forgotten due to a fault in one of the key processes (in this case at encoding) . Their study also found a significant strength as after 4 years the participant's memories stabilized and what they were still able to recite at this point would potentially stay in their memory

for life, meaning the participants know the information rather than remember it. (Brace and Roth , 2007, pp118)

Other researchers that focused on the accuracy of memory were Loftus and Palmer (1974). They looked at the effect that leading questions can have on memory. They did this by conducting an experiment whereby participants were shown video clips of car accidents. Each participant was then asked a variation of the question “ about how fast were the cars going when they hit each other?” with the verb ‘ hit’ being changed each time for a more violent verb such as smashed, collided and bumped. The participant’s estimates of speed were much higher when asked how fast a car was going when it ‘ smashed’ into the other car. It seems that the more violent verb convinced the participants that the cars in that clip were going faster when they were all the same speed. In a similar second experiment, one third were asked “ About how fast the cars were going when they smashed into each other?”, one third were asked how fast they were going when they ‘ hit’ and a control group were not asked a question. After seven days all participants were then asked the question “ did you see any broken glass?” Out of the participants that had been asked the more violent leading question using the word ‘ smashed’, 32 per cent admitted to seeing broken glass, even though there had been no broken glass shown on the video clip. An advantage of the research conducted by Loftus and Palmer (1974), is that it gained a lot of knowledge into the misinformation effect. This means information that is given to a person after an event takes place can actually override (or merge with) the memory that they originally have due to the memory not being encoded properly[p4]. Yet, this can also be seen as a disadvantage as If

memory can be influenced this easily using only leading questions, it could be used to effect witness testimonies and people can be made to remember events that they did not actually witness. (Brace, 2007, pp133-134)

There is also much to be said about the accuracy of autobiographical memories, which are episodes that an individual can remember from their life. This includes past experiences and biographical information. From this, Brown and Kulik (1977) devised the flashbulb memory. Flashbulb memories are formed when certain conditions, such as surprising and emotionally arousing events, are met and create detailed and stable memories. Brown and Kulik (1977) used insider viewpoints in their research and found that memories of events, such as the assassination of John F Kennedy and Martin Luther King, were highly detailed and much more accurate than other memories. A limitation to this area of research is that it depends solely on personal circumstance. What an individual finds, surprising, arousing and important will determine how well they will remember an event. For instance, the assassination of Martin Luther King registered a higher number of flashbulb memories with black North Americans than white North Americans. This means the accounts of white North Americans were less accurate (of the event) than the accounts of black North Americans. However, their research also showed a significant strength in memory recall as flashbulb memories store such a detailed and vivid account of what happened. When asked, participants could remember who they were with, where they were and exactly what they were doing when they learned of the surprising event. (Brace, 2007, pp140[p5])

Collective memories also play a part in how accurate recollections of past events can be. Jean Piaget (1960) spoke of his own experience of collective memory. Piaget was able to describe in detail an instance when a man tried to kidnap him as a child. Subsequently, at the age of fifteen Piaget's nanny wrote to his family to admit that she had made the story up and the attempted kidnapping never took place. Fifty years on, Piaget could still remember the scratches the man had left on the face of his nanny during the supposed event. Piaget's collective memory of the kidnapping is possibly due to family repeatedly discussing in detail what happened. Over a period of time, Piaget came to believe that he had witnessed this kidnapping and formed memories of what happened based on what others had told him. (An advantage of this is that) Piaget was able to recall this particular memory in so much detail after fifty years, showing that the information had been told was encoded and stored perfectly and thus was able to be retrieved. This instance shows how memory is not always accurate, as Piaget describes his memory of the kidnapping as being witnessed first-hand. Essentially, his memory of the event was fabricated from information he had been told by family members. (Brace, 2007, pp143[p6])

Research has shown that there are many factors that can affect the accuracy of our memory[p7]. However, these factors are dependent on individual and personal circumstance. The research of Conway (1991) stated that memory inaccuracies were due to a fault in one of the key processes. For instance, if there isn't enough information taken in and coded it makes it highly difficult for the information to be retrieved in any detail. Piaget (1960) and Loftus and Palmer (1974) both focused on the effect that other people can have on

influencing the memory of an individual (. Meaning) illustrating that others can make you believe you have witnessed a situation just by talking about it often enough or using leading questions and persuasive language . The research of Brown and Kulik (1977) concentrated more on personal circumstance. They found that how accurate a person's memory is of a situation depends on how interesting, surprising or emotionally stimulating they, as a person, find the event. What also must be taken into consideration is the possibility of brain damage and neuropsychological impairment; this can affect the accuracy of memory as the part of the brain that is responsible for memory recall may be damaged in some way. To conclude, the research mentioned in this essay has given a vast pool of knowledge into why our memories are not always accurate.

References

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[p1]A good introduction in terms of explaining what is involved in memory and the issue, but you need to state precisely how you plan to organise the essay.

[p2]Note that individuals may also vary in memory function due to brain differences.

[p3]This is a good point – names do not have a specific meaning nor do they relate to the person (except in some cultures) so are easily forgotten.

[p4]In fact there is debate about the cause of the misinformation effect which could also be due to not attending at encoding, due to fear or misattributing the source of information so it is thought to be real (as with Piaget's story and Crombag's study of memories of an air crash.).

[p5]You might have commented that some psychologists question how accurate flashbulb memories are.

[p6]Like the memory of Loftus and Palmer's participants – their memory was "reconstructed".

[p7]This conclusion is well focused on the evaluative part of the question – and summarises your points well. You might also have considered methodological issues.

[p8]Don't simply add references from the end of the chapter unless you have read them first hand. If you have read ABOUT them in the course book – you need only cite them in the main body of the essay.