| | |
|---|---|
| Define information processing | Information is taken in by the senses (input) then encoded in the brain where it is processed; this processing is followed by an output. |
| Define memory | Memory is the encoding, storage and retrieval of information. |
| Describe the Multi-Store Model of memory | It is structural linear model.<br>3 stores:<br>Sensory memory (SM): capacity: duration: encoding: Information is passed to the STM if we pay attention<br>Short-term memory (STM): capacity: 7 + or – 2 items (can be extended by chunking) duration: 10-20 seconds (can be extended by maintenance rehearsal) encoding: acoustic<br>Information is passed on to the LTM by elaborative rehearsal.<br>Long-term memory (LTM): capacity: unlimited duration: up to a lifetime encoding: semantic |
| Evaluate the Multi-Store Model of memory | Glanzer and Cunitz (1956) found that the first few words of a list (primacy effect) and the last few words (recency effect) are better recalled than the words in the middle of the list. The first few words are in the LTM and the last few words are in the STM at the time of recall. This is evidence for two distinct stores.<br>Clive Wearing (hippocampus damaged by viral infection) can no longer make new memories. This is evidence for a flow of information from the STM to the LTM, it is also evidence for the existence of two distinct stores. Furthermore he could remember being married but could not remember his wedding this shows that the LTM is not a single store i.e. semantic, procedural and episodic memory. This challenges the MSM.<br>KF (hippocampus damaged after an accident) has difficulties with acoustic stimuli but no difficulties with visual stimuli; this is evidence for a STM made up of at least two stores which goes against the MSM.<br>However these are case studies, they cannot be replicated for practical and ethical reasons so the results are not reliable and as they are studies of one individual we cannot generalise the results to the wider population. |

| | |
|---|---|
| Describe the Working Memory Model | It is a functional model (it explains how memory works). It focuses on the STM and contains separate components. The components do not only store information they also manipulate and analyse it. Central executive: controls and coordinates the operation of the other components. Visuo-spatial scratch pad: deals with visual and spatial information. Divided in two subsystems: Visual cache: stores visual data Inner scribe: records the arrangement of objects in the visual field. Phonological loop deals with auditory information and is sub-divided into the phonological store and the articulatory system Phonological store: acts as an inner-ear and the articulatory system acts as an inner voice. Episodic buffer: integrate the information of the other slave systems and information from the LTM. |
| Evaluate the Working Memory Model | Baddeley and Hitch (1974): showed that participants can perform two tasks at the same time (dual task technique) as long as they involve different slave systems. This is evidence that they must consist of more than one component. This is also evidence that the components have limited capacity. Word length effect: we recall more short words than long ones. This is because short words take less time to articulate than long words. This is evidence for the phonological loop. The word length effect disappears when the same experiment is done using articulatory suppression, this means that the word length effect depends on having a verbal rehearsal system(the articulatory process) therefore it supports the existence of this component. It explains why KF could deal with auditory information but had difficulties with auditory stimuli. This is evidence for the existence for different slave systems. However it is a case study focusing on a single individual therefore the results cannot be generalised to the wider population. Furthermore it is not replicable therefore the results are not reliable. fMRI scans: Braver et al. (1997) found that when their participants were performing activities involving the central executive while being scanned the prefrontal cortex showed greater activity. The activity was increased if the activity was harder. This supports the existence of the central executive. |
| Compare the Multi-Store Model of memory with the Working Memory Model | The WMM focuses on the STM whereas the MSM describes how information is processed from the sensory memory to the LTM. Neither model can explain how we remember smell and touch. The MSM is about structure whereas the WMM looks at the functioning of the memory. Both models can be used to understand brain damaged patient (explain). |

| | |
|---|---|
| What are the three types of LTM? | **Semantic memory:** Memory for facts and knowledge i.e. the multistore model of memory. This is a type of explicit memory. Semantic memories usually start as episodic memories but progressively loose their association with particular events and only the knowledge remains. <br> **Episodic memory:** Personal memories of events i.e. your last birthday party. This is a type of explicit memory. These memories usually include details of an event, the context in which the event took place and emotions associated with the event.. <br> **Procedural memory:** Memory of how to do things i.e. riding a bicycle or driving. These memories require a lot of repetition and practice- they are implicit meaning we find them very difficult to explain even if we find the actions easy to perform. Procedural memories are automatic. |
| Evidence for three types of LTM | Scans: Tulving (1989) showed that when episodic memory is used the frontal lobes are activated but when the semantic memory is used the back of the cerebral cortex is active. <br> Squire & Kandel showed that when we are learning a new skill the cerebellum is activated. <br> Rosenbaum et al., 2005- K.C. suffered brain damage after a motorbike accident-intact semantic memory but severely impaired episodic memory. <br> HM and Clive Wearing both had brain damage which severely affected their episodic memory but their semantic and procedural memories were relatively intact. However these are case studies not replicable- low reliability, results influenced by individual characteristics cannot generalise to wider population. |
| How does interference explain forgetting? | One memory disturbs the ability to recall another. This might result in forgetting or distorting one or the other or both. This is more likely to happen if the memories are similar. <br> Two types of interference: <br> **Proactive interference:** <br> Previously learnt information interferes with the new information you are trying to store. <br> **Retroactive interference:** <br> A new memory interferes with older ones. |
| Evaluate interference as an explanation of forgetting | There is supporting evidence: Underwood & Postman(1960) Most of the evidence supporting this theory comes from lab the EVs can be controlled. They can be replicated so reliability can be tested but they use artificial material (i.e. word lists) which are meaningless to the participants so they do not represent everyday situations. There is support for the influence of interference in everyday life (Baddeley & Hitch). <br> Baddeley (1990): the tasks given to participants are too close to each other and, in real life, these kinds of events are more spaced out so the effect might be different. <br> The research does not investigate whether the information has "disappeared" or can be recovered later, Ceraso (1967) showed that if tested again after 24 hours there is significant recovery so the effect of interference might be temporary. |

| | |
|---|---|
| Describe the theory of cue-dependent forgetting | This theory explains forgetting in terms of retrieval failure: the information is stored but temporarily inaccessible. According to Tulving (1974) when we learn information we also encode details about the environment in which we learned the information and the physical and emotional state we are in at the time.<br>Two types of cues:<br>contextual cues: cues relating to the environment<br>state cues: cues relating to emotional and physical state<br>Restoring context and/or the state might trigger recall of the information |
| Evaluate the theory of context-dependent forgetting | - There is supporting evidence: Godden and Baddeley, 1975. However this study lacked experimental control as it was a field experiment and the task (learning words under water or on the beach) lacks ecological validity.<br>- This theory can be applied to real life: Police uses this theory in cognitive interview by asking witnesses to describe the context in which the incident took place to enhance their recall.<br>- It does not take into account the nature of the material and the motivation of the person learning the material.<br>- It is difficult to disprove as if recall does not occur is it because the information is not stored or because you are not providing the right cue? |
| Evaluate the theory of state-dependent forgetting | - There is supporting evidence: Goodwin et al. (1969) however the tasks performed by the Ps was artificial so their performance might not reflect the way they recall in everyday life. However it was a controlled experiment so it can be replicated so reliability can be tested.<br>- Further supporting evidence Overton (1964) however the study was performed on animals (rats) so we cannot extrapolate the results to humans as we are cognitively different.<br>This theory can be applied to real life: Police uses this theory in cognitive interview by asking witnesses to describe their state of mind when the incident took place to enhance their recall.<br>- It does not take into account the nature of the material and the motivation of the person learning the material.<br>- It is difficult to disprove as if recall does not occur is it because the information is not stored or because you are not providing the right cue? |
| EWT<br><br>What is a leading question? | It is a question that is phrased in such a way that it prompts a particular answer.<br>Example "did you see **the** broken glass?"<br>The word "the" implies that there was a broken glass. |
| Describe Loftus and Palmer (1974) | Aim: to investigate how information provided to a witness after an event influences their memory of that event<br>Sample: 45 American students<br>They were shown a video of a traffic accident.<br>After watching they were asked a series of questions about the accident. The participants were divided in 5 groups. They had the same questions except for one question "what was the speed of the cars when they...<br>contacted/ hit/bumped/ collided/ smashed?<br>mean estimated speed<br>contacted (32 mph)/ hit (34mph)/bumped (38mph)/ collided (40 mph)/ smashed (41mph)<br>Conclusion: the wording of the question can affect the accuracy of the answer. |

| | |
|---|---|
| Evaluate Loftus and Palmer (1974) | It is a lab experiment therefore there is high control of the extraneous variables, this makes the experiment replicable therefore the results reliable.<br>The participants were students with probably limited experience in driving someone with more experience might not have been misled.<br>It is low in ecological validity because when we witness an accident we are stressed and worried and this can affect recall but obviously it did not affect the participants as it was a video.<br>The participants were not interviewed by the police as the would have been in real life, this could have influenced the participants as they might have considered their answers more carefully if questioned by the police which is seen as an authority figure.<br>The participants knew there would not be any consequences to their answers whereas in real life there are consequences. Foster (1994) showed that when participants know that there are consequences to their testimony they tend to be more accurate. |
| Which factors affect the influence of leading questions? | The misleading information is more likely to influence witnesses if it concerns less important (peripheral) details. If it comes from someone we trust. |
| Describe the effects of anxiety on EWT | People have better recall of non-violent events than violent ones. It could be because of the level of anxiety they create as according to the **Yerkes-Dodson Law**, an increase in arousal improves performance but only up to a point. Once arousal has passed a critical point called the optimum, performance tends to decline. It could also be that violent events are repressed (place in the unconscious mind to protect the ego). However this is not always the case as Yuille and Cutshall showed that in a real incident involving a gun (Canada, in a gun shop) witnesses had a very accurate recall. Christianson and Hubinette (1993) found that emotional involvement of witnesses increases recall after interviewing witnesses to a real crime where their safety had been put at risk. |
| Describe weapon focus | Weapon focus is the tendency for witnesses to violent crimes to focus their attention on the weapon used. Weapon focus usually results in poor quality testimony, as the witness is unable to describe much that is useful about other aspects of the incident. The witness can usually describe the weapon used in great detail, but not the person who was pointing it at them. |

| | |
|---|---|
| Evaluate weapon focus as a source of inaccuracy of eyewitness testimony. | Pickel (1998) showed that the weapon focus effect is caused by the unusualness rather than the high level of anxiety.<br>This was a lab experiment so it has high control of variables therefore it is replicable therefore the results are reliable but the participants were watching a video the arousal would be a lot higher if it was a real situation.<br>Yuille and Cutshall showed that in a real incident involving a gun (Canada, in a gun shop) witnesses had a very accurate recall.<br>Christianson and Hubinette (1993)<br>They questioned 58 witnesses of real-life bank robberies and found that those threatened in some way had improved recall and remembered more details.<br>Violent incidents increase anxiety and autonomic arousal, which has a detrimental effect on memory generally.<br>According to the Yerkes-Dodson Law, an increase in arousal improves performance but only up to a point. Once arousal has passed a critical point called the optimum, performance tends to decline. |
| Explain the cognitive interview technique | Geiselman (1985) its aim is to increase the amount of recall and its accuracy by increasing the four stages:<br>1. Reinstate feelings and context at the time of the event. *Recalling how you felt and the context enhance recall (these details act as cues to recall- see cue-dependent forgetting)*<br>2. Tell the story with maximum details even it they seem irrelevant. *Witnesses might not realise that some details are important and details might help them recall significant information*<br>3. Recall the event in different order. *When events are recalled in forward order, witnesses reconstruct based on their schemas. If the order is changed they are more accurate.*<br>4. Tell the story from the point of view of another witness. *Encourages many retrieval paths* |
| Evaluate the cognitive interview technique as a technique to aid eyewitness memory. | Fisher et al. (1990) found recall increased by 46% with 90% accuracy (research done in real life situations).<br>Kohnken, 1999 meta study reviewing the findings of 53 studies found that it produced and increase of 34% in the amount of correct information recalled.<br>It is very time consuming therefore it is used only in serious crime. It generates too much information for the police to deal with. It requires lengthy training which is expensive therefore only relatively few officers are properly trained. Police forces tend to use only the first two stages of the procedure except in serious crimes. |