

**AQA A LEVEL
PSYCHOLOGY**

tutor2u 

TOPIC ESSAYS

Memory



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Describe and evaluate the multi-store model of memory. Refer to evidence in your answer. (16 marks)

Atkinson & Shiffrin (1968) proposed the multi-store model (MSM) which suggests that memory is made up of three components: sensory register (SR), short-term memory (STM) and long-term memory (LTM). The model proposes that memories are formed sequentially and information passes from one component to the next, in a linear fashion.

Specialist terminology associated with the model is identified from the offset.

Information enters the sensory register via our senses such as sound or sight. The sensory register has a very limited duration of less than one second. Information that is attended to is passed to STM, which has a limited capacity of 7 ± 2 'chunks' of information and a limited duration of approximately 20 seconds. Information in our STM is coded in an acoustic format. Thereafter, rehearsed information is transferred to LTM, which has an unlimited capacity and a lifetime duration. Information in LTM is coded semantically and can be retrieved from LTM to STM when required.

Accurate and detailed overview of the components of the multi-store model, including both the components and processes (e.g. attention, rehearsal, etc.).

Support for the MSM comes from the case of Clive Wearing, who contracted a virus that caused severe amnesia (memory loss). Following the virus, Wearing could only remember information for 20–30 seconds; however, he was able to recall information from his past, for example, his wife's name. Furthermore, Wearing was unable to transfer information from his STM to his LTM, but he was able to retrieve some information successfully. Wearing's case supports the idea that memories are formed by passing information from one store to the next, in a linear fashion, and that damage to any part of the MSM can cause memory impairment.

Relevant research support for this model of memory utilising an appropriate case study to illustrate the point.

While the case of Clive Wearing supports the MSM, other case studies refute the model. For example, the case of patient KF, who was injured in a motorcycle accident. Following his accident, KF could recall stored information from his LTM; however, he had issues with his STM. KF was also able to remember visual images, including faces, but was unable to remember sounds (acoustic information). This suggests that there are at least two components within STM, one component for visual information and one for acoustic information, which suggests that the MSM may provide an overly simplified account of STM.

A second case study is used to provide balance to the argument.

Further support for the MSM comes from psychological studies. For example, Miller (1959) supports the idea of a limited capacity of 7 ± 2 chunks of information in STM;

Peterson & Peterson (1959) support the idea of a limited duration in STM of approximately 20 seconds and Bahrick (1975) supports the idea of a lifetime duration in LTM. These studies all support the different elements of the MSM and therefore suggest that the model is an accurate representation of human memory. However, research examining the MSM is a clear example of experimental reductionism, as it attempts to explain a complex behaviour by relying on isolated variables, operationalised in laboratory experiments such as the capacity of STM, or duration of STM. However, as memory is a complex phenomenon, many psychologists argue that reducing memory to isolated variables undermines the complexity of human memory and does not provide us with a comprehensive understanding of memory in everyday contexts.

An excellent use of research support, combined with sound knowledge of issues and debates, serves to enhance the evaluative commentary.

Finally, evidence from brain scans has shown that different areas of the brain are active when performing STM tasks (hippocampus and subiculum) and LTM tasks (motor cortex). This suggests that different brain regions are responsible for the different components of the MSM, supporting the idea that our memory is made up of discrete stores.

An interesting piece of evidence is presented in the final evaluation point about localisation of memory in different brain regions.

[~550 Words]

Examiner Style Comments: *Mark Band 4*

This is a sufficiently detailed and accurate account of the multi-store model of memory, providing the appropriate content for a 16-mark essay question. The evaluation is well detailed, thorough and effective including one embedded reference to a relevant issue and debate to ensure the answer sits firmly within the top mark band.

Describe and evaluate types of long-term memory. (16 marks)

Psychologists have suggested that there are at least three types of long-term memory, including: episodic, semantic and procedural. Episodic memory is a type of explicit memory, which includes memories of personal experiences, such as the first day at school. Episodic memories have three elements: details of the event; context; and emotions, which are interwoven. The strength of episodic memories is determined by the strength of the emotions experienced when the memory is coded, and a conscious effort is required to retrieve them.

Episodic memory is described in detail using specialist vocabulary.

Semantic memory is also an explicit memory, which includes memory for knowledge, facts, concepts and meaning about the world around us, for example, knowing that London is the capital of England. These memories are not 'time-stamped' or linked to an event.

A second type of long-term memory is outlined in a concise manner.

Procedural memory is a type of implicit memory, which includes memory of how to perform certain tasks, actions or skills such as swimming, reading and writing, which become 'automatic'. They are implicit and therefore difficult to explain in words to someone else. They are acquired through repetition and practice and many procedural memories are formed early in life, for example, walking.

A third, and final, type of long-term memory is presented and well explained.

Brain scans provide support for different types of LTM. Research suggests that different parts of the brain are active when accessing episodic, semantic and procedural memories. Episodic memories have been associated with the hippocampus and temporal lobe; semantic memories are also associated with the temporal lobe; and procedural memories are associated with the cerebellum and motor cortex. Brain scan research suggests that different brain regions are responsible for the different types of LTM, supporting the idea that LTM is made up of at least three distinct categories.

The evaluative commentary is enhanced and elaborated efficiently. Specialist terminology is used throughout.

Support for the distinction between implicit and explicit LTM comes from the case study of patient HM (Milner, 1962). HM suffered from severe epilepsy and underwent surgery, which involved the removal of his hippocampus, to alleviate the symptoms. His STM remained intact; however, he was unable to transfer certain types of information to his LTM. Milner discovered that HM could learn procedural (implicit) tasks, but not episodic or semantic (explicit) information. HM could complete a mirror tracing task, where an image is copied whilst looking in a mirror, and retain the skill without

forgetting. However, he had no knowledge of ever completing the mirror tracing task. Therefore, HM could demonstrate his procedural memory through implicit behaviour, despite being unable to recall his experiences explicitly. HM therefore provides further evidence for the distinction between different types of LTM, namely implicit and explicit.

Appropriate evidence is presented to support the distinction between implicit and explicit long-term memories utilising HM's case study well.

Understanding different types of memory allows for the development of helpful real-world applications. Belleville *et al.* (2006) compared the performance of older people suffering with a mild cognitive impairment who received memory training with that of a control group who did not. It was found that participants in the experimental group performed better on a test of episodic memory. This suggests that being able to identify different types of LTM can provide psychologists with the opportunity to improve peoples' lives though devising appropriate treatments to help alleviate the problems associated with age-related memory impairment.

The evaluative commentary is concluded with an interesting real-world application, drawing upon psychological evidence to support the point.

[~500 Words]

Examiner Style Comments: *Mark Band 4*

This is a well-detailed essay which explains the three types of long-term memories named on the specification. A good balance of breadth and depth across the three concepts is achieved. The evaluation is effective and the use of specialist terminology is consistent throughout to ensure that this is a secure mark band 4 response.

Discuss what psychological research has shown about working memory. In your answer, refer to theory and/or evidence. (16 marks)

The working memory model (WMM) was proposed by Baddeley and Hitch (1974) to account for some of the limitations of the multi-store model. They felt that short-term memory consists of multiple stores and not just one unitary store and that STM is an active process (hence the name 'working' memory).

An interesting start to the essay outlining the rationale and purpose of the model.

The central executive controls the WMM and directs attention to one of three slave systems. The phonological loops deal with auditory information and contains the phonological store which holds the words you hear and the articulatory control process which allows for maintenance rehearsal of acoustic information. The visuo-spatial sketchpad (VSS) is used for the planning of spatial tasks. The VSS contains the visual cache which stores visual information and the inner scribe which deals with spatial relationships and stores the arrangement of objects in the visual field. In 2000, Baddeley added the episodic buffer which is a general store for both visual and acoustic information. The purpose of the episodic buffer is to integrate information from the other three components and transfer information to long-term memory.

Specialist terminology is used with accuracy.

Additional information about the WMM completes the detailed outline.

One strength of the working memory models comes from dual task studies. Baddeley and Hitch (1976) found that when two tasks require the participants to use their phonological loop, their ability to perform the tasks is impaired. However, when one task requires the participant to simultaneously use their phonological loop (remembering a series of numbers) and the other requires their visuo-spatial sketchpad (copying a drawing) then their performance is not impaired. This provides support to the model and to the existence of multiple components within our STM system.

Evaluative commentary is kicked off with relevant research support from dual task studies.

Further support for the WMM comes from case studies. For example, the case of patient KF, who was injured in a motorcycle accident, demonstrates that STM consists of multiple components. Following his accident, KF could recall stored information from his LTM; however, he had issues with his STM. He was also able to remember visual images, including faces, but was unable to remember sounds (acoustic information). This suggests that there are at least two components within STM, one component for visual information (visuo-spatial sketchpad) and one for acoustic information (phonological loop), thus supporting the WMM. However, one limitation of the working memory model is that

Evaluation is developed with further support from an appropriate case study.

it only focused on short-term memory. The working memory model provides a detailed description of our short-term memory, but no information on the sensory register and long-term memory. The WMM is not a complete model of memory and is therefore limited in its application to everyday human memory and is unable to explain how information arrives into our working memory and how information is stored in the long term.

Evaluation is balanced with a limitation of the working memory model.

Research examining the WMM often demonstrates experimental reductionism, as it attempts to examine complex behaviour by relying on isolated variables operationalised in laboratory experiments. Furthermore, the WMM adopts a nomothetic approach since it attempts to generate universal laws regarding how STM processes information, based on dual task studies conducted under laboratory conditions. Using an idiographic approach, such as was used by Oliver Sacks with Clive Wearing (Sacks, 2007) and Brenda Milner with HM (Milner, 1957), can shed light on how STM loss can vary between people, with HM's STM severely affected, but still not as badly as Wearing's, despite the almost total removal of his hippocampus and surrounding tissue.

A strong end to the essay with creditworthy reference to issues and debates related directly to the question.

[~525 Words]

Examiner Style Comments: *Mark Band 4*

This is a well-detailed and accurate account of the working memory model and its contribution to cognitive psychology. The evaluation is well-detailed, thorough and effective, drawing on a range of points to create balance between strengths and limitations. The use of specialist terminology is excellent and consistent from start to finish.

Marcus is studying for his language exams. He revises Spanish followed by Italian one evening and then gets mixed up. For example, he recalled the Spanish words for 'dog' instead of the Italian word for 'dog'. Marcus finds that when he is at home revising with his father, his knowledge and memory are significantly better than when he is in the classroom completing a test in silence.

***Discuss two explanations for forgetting and refer to Marcus in your answer.
(16 marks)***

One explanation for forgetting is proactive interference. It occurs when old information stored in long-term memory (LTM) interferes with the learning of new information. This usually occurs when the new information is similar to the old information.

One explanation for forgetting is identified and explained.

Keppel And Underwood (1962) investigated the effect of proactive interference on LTM whereby participants were presented with meaningless three-letter consonant trigrams at different intervals. To prevent rehearsal the participants had to count backwards in threes before recalling. Participants typically remembered the trigrams that were presented first, irrespective of the interval length. The results suggest proactive interference occurred, as memory for the earlier consonants (which had transferred to LTM) interfered with the memory for new consonants, due to the similarity of the information presented.

Relevant research is described with accuracy. Link to proactive interference explanation is explicit.

In Marcus's case, the Spanish word for dog that he learned first will have been replaced with the newer Italian word for dog which he revised later. It is probable that the two words are similar which explains why he is struggling to recall the Italian word.

Appropriate material from the scenario is applied to the psychological theory.

Interference research is often criticised for being artificial and lacking ecological validity. Most of the research examining interference is carried out in a laboratory, for example, Keppel and Underwood (1962) and McGeoch and McDonald (1931), while using particularly meaningless stimuli, such as three-letter consonant trigrams or simple word lists. As a result, these findings do not represent everyday examples of interference and are limited in their application to everyday human memory. Despite this criticism, the results do appear to support Marcus's case, as he is forgetting two very similar pieces of information, in the same way that Keppel and Underwood's participants were attempting to recall similar three-letter consonant trigrams.

Methodological critique of the research commences the evaluative commentary in an effective manner.

Reference to the scenario is consistent throughout the response.

Another type of forgetting occurs when information cannot be retrieved because of insufficient cues to trigger memory.

A second type of forgetting is presented and well explained,

Tulving and Thomson (1973) proposed the encoding specificity principle and argued that memory is most effective when information that was present at the time of coding is also present at the time of retrieval. Furthermore, they suggested that environmental cues and mental cues aid recall. Environmental cues include the room in which you learn information, and mental cues include your emotional state.

using specialist terminology with confidence.

Godden and Baddeley (1975) provided research support for the idea of retrieval failure. They studied the effect of contextual cues on recall to investigate whether memory for words learned and recalled in the same environment are better than memory for words learned and recalled in different environments. Their sample consisted of divers who learned words on land or underwater and then recalled the words in the same or opposite context. They found that words learned underwater were better recalled underwater and words learned on land were better recalled on land. This supports the idea that environmental cues aid recall.

Appropriate research is drawn upon to support the description.

It is no surprise that Marcus finds it easier to recall information when at home because his revision and learning take place at home and therefore the context of being at home aids his recall. It also explains why he struggles with recalling information when completing a test in silence, because the context, the classroom, and the condition, being in silence, are different to the context and condition in which the learning took place.

The essay concludes with another successful attempt at applying knowledge and understanding of forgetting to the case of Marcus.

[~525 Words]

Examiner Style Comments: *Mark Band 4*

This is a well-structured essay which clearly addressed all of the AO1, AO2 and AO3 elements that this question demands. An accurate and well-detailed account of two types of forgetting are presented, using key terms effectively to demonstrate sound knowledge and understanding. A range of effective evaluation points are used to support or critique the explanations. The application to the scenario with Marcus is clear, coherent and focused on the material provided, culminating in a great response.

Describe and evaluate how retrieval failure due to the absence of cues leads to forgetting. (16 marks)

Tulving and Thomson (1973) proposed the encoding specificity principle which argued that memory is most effective when information that was present at the time of coding is also present at the time of retrieval. They suggested that environmental and mental cues aid recall. Consequently, there are two types of retrieval failure due to the absence of cues: context-dependent failure and state-dependent failure. Context-dependent failure occurs when environmental cues are missing and state-dependent failure occurs when an individual's emotional state is different.

An interesting start to the essay drawing on appropriate theories from the outset.

Godden and Baddeley (1975) investigated the effect of contextual cues on recall using a sample of 18 participants from a university diving club. They were divided into four conditions: 1) learning words on land and recalling on land; 2) learning words on land and recalling underwater; 3) learning underwater and recalling underwater; and 4) learning underwater and recalling on land. It was found that words learned underwater were better recalled underwater and words learned on land were better recalled on land. These results provide clear support for the idea of context-dependent retrieval failure and the idea that context can aid recall.

Specialist terms are explained well.

While Godden and Baddeley provide support for the idea of context-dependent retrieval failure, their research has numerous methodological flaws. They used a repeated measures design, and each diver took part in all four conditions. It is possible that the divers worked out the aim of the experiment and displayed demand characteristics or order effects. By the fourth trial the participants may have demonstrated practice effects where their recall improved because of completing the experiment multiple times, or even fatigue effects where their results declined because of boredom. Furthermore, with a sample of just 18 divers the conclusions drawn should be treated with caution. Additionally, the context examined in their study is extreme and provides little insight into context-dependent forgetting in everyday life.

Accurate account of Godden and Baddeley's study to complete the description element of this response.

Other researchers have sought to examine the effect of state-dependent retrieval failure, which occurs when an individual's emotional state at the time of learning is different to their emotional state at the time of recall.

The evaluative commentary is effectively developed using critiques of the methodology.

For example, Goodwin *et al.* (1969) asked male volunteers to remember lists of words when they were either drunk or sober. The participants were then asked to recall the words 24 hours later, in either a drunk or a sober state. The results of Goodwin *et al.* support Godden and Baddeley, as words learned when drunk were better recalled when drunk and words learnt when sober were better recalled when sober. These results clearly support the idea of state-dependent retrieval failure and demonstrate the power of 'state' on recalling information.

The evaluative commentary is further enhanced by additional research support which is appropriate to the demands of the question.

Theories of forgetting, including context and state-dependent retrieval failure take a nomothetic approach to establish general laws regarding forgetting that apply to all humans. However, such research is often based on small sample sizes and does not provide an accurate reflection of memory in all humans in all situations. Consequently, an idiographic approach investigating forgetting using participants of different ages and cultures may give more insight into this complex phenomenon.

Confident understanding of issues and debates is demonstrated here and applied well to the theories of forgetting.

[~500 Words]

Examiner Style Comments: *Mark Band 4*

This is a detailed and accurate essay examining forgetting due to retrieval failure. Although both context and state-dependent forgetting are referred to initially, the focus is on context-dependent forgetting for the main part. This is appropriate given the number of marks available for AO1. The use of specialist terminology, including a reference to ethical issues, is impressive. The evaluation is focused, thorough and effective to provide a sound response overall.

A man is being questioned by police about an incident he witnessed outside a pub in his local area. An argument took place outside the pub, followed by a violent attack. The police later discovered a knife at the scene. “Did you see the knife the perpetrator was holding”, asked the police. “I don’t remember; however, there probably was a knife”, replied the man. “I was so shocked and scared it’s hard to remember exactly what happened. It’s all my friends have been talking about over the past couple of days, so I’m not sure what I saw”.

Discuss factors that affect the reliability of eyewitness testimony. Refer to the scenario in your answer. (16 marks)

Two key factors that affect the reliability of eyewitness testimony (EWT) are leading questions and anxiety. Loftus & Palmer (1974) examined three groups of students who watched a one-minute video of a car accident. One group was asked: “How fast were the cars going when they smashed into each other?”, while the other group was asked the same question with the verb ‘hit’. One week later they were asked: “Did you see any broken glass?”, despite the fact there was none. 32% of participants in smashed condition said yes, compared to 14% (hit) and 12% (control), suggesting that misleading questions can significantly affect the reliability of EWT and make people report seeing things that they didn’t.

Accurate and detailed outline of relevant research on misleading questions directly related to the question.

One limitation of Loftus and Palmer’s research is that their study lacks population validity. Their sample consisted of 150 American students. It is reasonable to argue that the students in their experiment were less experienced drivers, who may be less accurate at estimating speeds. Consequently, we are unable to generalise the results to other populations, for example, older and more experienced drivers, who may be more accurate in their judgement of speeds and therefore not as susceptible to leading questions.

Evaluation of the research is effective and uses specialist terminology well.

Just like Loftus & Palmer’s experiment, the man questioned in the extract was asked a leading question: “Did you see the knife the perpetrator was holding?” The use of the word ‘the’ is leading the man to think there was a knife even though he wasn’t originally sure. This is evident by his confused/uncertain reply where he says there ‘probably’ was one.

Excellent engagement with the scenario extracting appropriate material to support the point being made.

Johnson & Scott (1976) investigated the effect of anxiety on the reliability of EWT. Participants were invited to a laboratory where they were exposed to one of two conditions in which a person, known as the target, left the laboratory either holding a pen or a bloodied knife. The participants were then shown 50 photos and asked to identify the person. Those in the pen condition correctly identified the target 49%

of the time, compared to just 33% in the knife condition. Loftus claimed that the participants who were exposed to the knife had higher levels of anxiety and were more likely to focus their attention on the weapon, known as the weapon focus effect, suggest that anxiety can affect the reliability of EWT.

Research on weapon focus demonstrates a sound understanding of this area in psychology.

However, a real-life case study by Yuille and Cutshall (1986) contradicts the results of Loftus (1979). Yuille and Cutshall investigated the effect of anxiety in a real-life shooting and found that the 13 witnesses who took part in the follow-up interview were accurate in their eyewitness accounts five months later, and little change was found in their testimonies. All of the major details of their reports remained the same suggesting that the anxiety experienced at the time of the event had little or no effect on their subsequent memory for the event and the reliability of their EWT.

An interesting evaluation point comparing results of a real-life case study.

The man outlined in the extract was clearly anxious (“I was so shocked”) and this could have affected the reliability of his EWT. However, it is unclear whether or not he saw a knife and therefore the weapon focus effect would not apply to this situation. The results of Yuille and Cutshall, which are based on real-world crimes, suggest that the anxiety experienced would not affect the reliability of his EWT and that his memory of the event would remain accurate both immediately after and up to five months later.

Effective reference to the scenario again showing that all elements of the question have been addressed fully.

[~550 Words]

Examiner Style Comments: *Mark Band 4*

This is a well-structured essay which provides an accurate and detailed account of two factors – misleading questions and anxiety – which can affect eyewitness testimony. The essay is clear and coherent, and specialist terminology is used throughout the outline and evaluation sections with confidence. Application to the scenario is well considered and draws on appropriate material from the scenario to illustrate the point being made.

Outline and evaluate research into the effects of leading questions on eyewitness testimony. (16 marks)

Loftus & Palmer (1974) investigated the effect of leading questions on the accuracy of eyewitness testimony using a sample of American students. All participants watched a video of a car crash and were then asked a specific question about the speed of the cars. Loftus and Palmer manipulated the verb used in the question, for example: "How fast were they cars going when they *smashed/ collided/ bumped/ hit/ contacted* with each other?"

A key piece of research investigating this area of psychology is identified and well explained.

They found that the estimated speed was affected by the verb used. For example, participants who were given the verb 'smashed' reported an average speed of 40.5 mph, whereas participants who were given the word 'contacted' reported an average speed of 31.8 mph, an overall difference of 8.7 mph. These results show clearly that the accuracy of eyewitness testimony is affected by leading questions and that a single word in a question can significantly affect the accuracy of our judgements.

Accurate and detailed knowledge and understanding of the procedure and findings is demonstrated.

Loftus and Palmer's research has questionable ecological validity. On the one hand, questioning participants about everyday events like a car crash appears to be a genuine measure of eyewitness testimony. However, the participants watched a video of a car crash and witnessed the events unfold from start to finish. In everyday reports of car accidents, witnesses rarely see the whole event; they either are involved in the event directly, or see a small part of the event happen in their peripheral vision. Therefore, their results do not reflect everyday car accidents and we are unable to conclude if eyewitnesses to real accidents, who would have a stronger emotional connection to the event, would be susceptible to leading questions in the same way.

Effective evaluative commentary is created using methodological arguments.

A second weakness of Loftus and Palmer's research is that their study lacks population validity. Their two experiments only used American university students as participants. It is reasonable to argue that the students in their experiment were less experienced drivers, who may be less accurate at estimating speeds. Consequently, we are unable to generalise the results to other populations, for example, older and more experienced drivers, who may be more accurate in their judgement of speeds and therefore not as susceptible to leading questions.

The discussion is enhanced with a further valid limitation of Loftus and Palmer's research.

However, Loftus and Palmer's research took place in a

university laboratory and was therefore highly controlled. This high degree of control reduces the chance of extraneous variables, increasing the validity of the results. Furthermore, it is easy for psychologists to replicate their research, to see if the same results are achieved with a different population. While the highly-controlled laboratory conditions are considered a strength, Loftus & Palmer's (1974) research is an example of experimental reductionism: the complex process of memory after watch a film, for what would in real life be a traumatic event, is reduced to the effect of the wording of a leading question (IV) on the eyewitness memory (DV). Real-life EWT accounts are affected by a multitude of factors and while these results highlight the potential impact of misleading questions, the results may not reflect everyday EWT accounts which could be affected by other factors including anxiety, post-event discussion and age.

The evaluation is balanced with a strength of the laboratory method.

The commentary is concluded with an interesting reference to reductionism and how this applies to leading questions and eyewitness testimony in everyday life.

[~500 Words]

Examiner Style Comments: *Mark Band 4*

This is a highly detailed and accurate essay examining the effect of leading questions on the accuracy of eyewitness testimony. One relevant study conducted by Loftus and Palmer is presented in great depth, appropriate for the approximate 150-word outline recommended. The use of specialist terminology is impressive. The evaluation is focused, thorough and effective, incorporating issues and debates effortlessly.

Discuss research into the effects of misleading information on the accuracy of eyewitness testimony. (16 marks)

Misleading information incorporates misleading questions and post-event discussion. Loftus & Palmer (1974) examined the effect of misleading questions by using three groups of students who watched a one-minute video of a car accident. One group was asked: "How fast were the cars going when they smashed into each other?", while the other group was asked the same question but with the verb 'hit'. One week later they were asked: "Did you see any broken glass?", despite the fact there was none. 32% of participants in smashed condition said yes, compared to 14% (hit) and 12% (control). These results suggest that misleading questions can significantly affect the reliability of EWT and make people report seeing things they didn't witness.

One limitation of Loftus and Palmer's research is that their study lacks population validity. Their experiment consisted of 150 American students. It is reasonable to argue that the students in their experiment were less experienced drivers, who may be less accurate at estimating speeds. Consequently, we are unable to generalise the results to other populations, for example, older and more experienced drivers, who may not be affected by misleading questions in the same way.

Furthermore, Loftus and Palmer's research has questionable ecological validity. On the one hand, questioning participants about everyday events like a car crash appears to be a genuine measure of eyewitness testimony. However, the participants watched a video of a car crash and witnessed the events unfold from start to finish. In everyday reports of car accidents, witnesses rarely see the whole event; they are either involved in the event directly or see a small part of the event happen in their peripheral vision. Therefore, their results may not reflect everyday car accidents, and we are unable to conclude if the effect of leading questions is the same outside the laboratory.

Gabbert *et al.* (2003) investigated the effect of post-event discussion. Her participants watched a video of a girl stealing money. However, participants in the co-witness group were told that they had watched the same video when they had, in fact, seen different perspectives. 71% of the witnesses in the co-witness group recalled information they had not seen and 60% said that the girl was guilty, despite not having seen her commit a crime. These results highlight the issue of post-event discussion and the powerful effect this can have on the

Explanation of the specialist terminology sets scene for the rest of the essay.

Accurate and detailed account of this key research study on misleading questions.

A well-elaborated validity argument is presented as the first evaluation point.

A second form of validity is brought into question regarding Loftus and Palmer's research.

Thorough outline of key research study into the effects of post-event discussion.

accuracy of eyewitness testimony.

Although Gabbert's results provide an insight into the effect of post-event discussion on the accuracy of eyewitness testimony, we are unable to conclude why this distortion occurs. The distortion could be the result of poor memory, where people assimilate new information into their own accounts of the event and are unable to distinguish between what they have seen and what they have heard. On the other hand, it could be that the distortion occurs due to conformity and the social pressure from the co-witness. Therefore, further research is required in the real-world to demonstrate the exact effect on misleading information on the accuracy of EWT.

The essay concludes with an interesting point which considers the origins of memory distortion.

[~500 Words]

Examiner Style Comments: *Mark Band 4*

This essay demonstrates sound knowledge understanding of the effects of misleading information on eyewitness testimony. The discussion shows appreciation for the role of misleading questions and post-event discussion, striking a good balance between the two concepts. The evaluation is effective, interesting and focused on the demands of the question.

Outline and evaluate research into the effects of anxiety on the accuracy of eyewitness testimony. (16 marks)

Loftus (1979) reported Johnson and Scott's (1976) experiment investigating anxiety and the accuracy of eyewitness testimony. The participants were invited to a laboratory where they were told to wait in the reception area. The participants were then exposed to one of two conditions: 1) Participants overheard a conversation about equipment failure followed by an individual leaving the laboratory holding a pen. 2) Participants overheard a heated exchange and the sound of breaking glass and crashing chairs followed by an individual running into the reception area, holding a bloodied letter-opening knife.

Clarity is established about the origin of the key research.

Accurate and detailed outline of the procedure.

Both groups were shown 50 photographs and asked to identify the person who had left the laboratory. Those who had witnessed the man holding a pen correctly identified the individual 49% of the time. Those who had witnessed the man holding a knife correctly identified the target 33% of the time. Loftus suggested the participants who saw the knife experienced more anxiety and therefore focused their attention on the weapon, not the face, which is called the weapon focus effect.

Sound knowledge and understanding of the main findings is evident.

However, a real-life case study by Yuille and Cutshall (1986) contradicts the weapon focus effect. They investigated the effect of anxiety in a real-life shooting, in which one person was killed and another person seriously wounded. 21 witnesses were originally interviewed by investigating police and 13 witnesses, aged between 15 and 32, agreed to take part in Yuille and Cutshall's follow-up research interview, 4–5 months later. They found that the 13 witnesses who took part in the follow-up interview were accurate in their eyewitness accounts five months later, and little change was found in their testimonies. All the major details of their reports remained the same and only minor details, including estimates of age, height and weight, changed. Furthermore, the witnesses avoided responding in a biased way to leading questions and the anxiety experienced at the time of the event had little or no effect on their subsequent memory for the event. These results refute the weapon focus effect and show that in real-life cases of extreme anxiety, the accuracy of eyewitness testimony is not affected.

Effective use of a real-life case study, in comparison with laboratory-based research, creates a well-elaborated argument.

Loftus' (Johnson and Scott's) research has been criticised for lacking ecological validity. Although the participants were waiting in the reception area outside the laboratory, they may

have anticipated that something was going to happen, which could have affected the accuracy of their judgements.

Furthermore, the results from real-life case studies (e.g. Yuille and Cutshall) refute the findings of Loftus and suggest that her results do not represent real-life cases of extreme anxiety.

Methodological critiques of the validity of the research furthers the discussion.

A final criticism of this research is that numerous ethical guidelines were broken. The participants were deceived about the nature of the experiment and not protected from harm. Loftus (Johnson and Scott) exposed some of the participants to a man holding a bloodied knife, which could have caused extreme feelings of anxiety. This is an issue, as these participants may have left the experiment feeling exceptionally stressed and anxious, especially if they, or someone they knew, had been involved in a knife crime.

Finally, an interesting ethical issue is raised for consideration.

[~500 Words]

Examiner Style Comments: *Mark Band 4*

This is a well-detailed and accurate account of how anxiety can affect the recall and accuracy of eyewitness testimony, referring to a key piece research in this area of psychology conducted by Johnson and Scott as reported by Loftus. The evaluation is thorough and effective in most places, and the final paragraph provides an interesting discussion of the ethical implications of conducting such research.

Discuss the use of the cognitive interview as a means of improving the accuracy of eyewitness testimony. (16 marks)

Geiselman *et al.* (1985) developed the cognitive interview, identifying four key principles that they believed would enhance recall of eyewitness testimony, compared to the standard police interview, including: context reinstatement (CR), report everything (RE), recall from changed perspective (CP) and recall in reverse order (RO).

A swift start to the essay outlining the main strategies involved in the cognitive interview.

CR is when a person mentally recalls the context of the event, for example, the time of day and the weather. These details act as a trigger, helping the person recall more information. RE is when a person recalls every detail they can remember, even those that seem trivial. CP is when a person considers the event from someone else's point of view, for example, the offender. Finally, RO is where a person recalls the events in reverse chronological order.

Each strategy is outlined well with examples where appropriate.

Geiselman (1985) examined the effectiveness of the cognitive interview using students who watched a video of a simulated crime. Two days later, participants were interviewed using the standard police interview or the cognitive interview. Those who were interviewed using the cognitive interview recalled significantly more correct information than those interviewed using the standard interview. This suggests that the cognitive interview is more effective than a standard interview at eliciting information from eyewitnesses.

Relevant research study used to enhance the description and provide some initial commentary.

Fisher *et al.* (1989) supports the results of Geiselman and therefore the effectiveness of the cognitive interview. These researchers examined the effectiveness of the cognitive interview in real police interviews. Experienced detectives recorded a selection of their interviews, using a standard interviewing technique. The detectives were then divided into two groups. One group was trained to use the cognitive interview, while the other group continued using the standard interview. After training, their subsequent interviews were analysed. The trained detectives elicited 46% more information after their training, in comparison to the control group. Where it was possible to confirm the information, over 90% of it was found to be accurate, thus providing further evidence for the cognitive interview as a technique to elicit more information which is highly accurate.

Excellent choice of research to support the argument providing a good level of detail.

Although the cognitive interview increases the quantity of information recalled, research suggests that it is still susceptible to misleading information. Centofanti and Reece

(2006) showed participants a video of a bank robbery and then provided participants with a misleading or neutral post-event summary. On average, the participants who were questioned using a cognitive interview recalled 35% more information. However, the participants in both conditions were equally susceptible to misleading information. Therefore, although the cognitive interview enhances the quantity of information recalled, interviewers need to be careful that participants are not exposed to misleading information.

A counter-argument is provided to balance the evaluative commentary with both strengths and weaknesses of the cognitive interview.

Although research supports the effectiveness of the cognitive interview, Kebbell and Wagstaff (1996) have found that police typically use interviewing techniques that limit the quantity of information provided, rather than those that improve accuracy. Furthermore, the cognitive interview requires special training and many police forces have not provided more than rudimentary training, which explains why the cognitive interview is not readily used. Therefore, despite the encouraging results found in relation to the cognitive interview, both in terms of helping witnesses to recall information and ensuring accuracy, the technique is not widely used due to the constraint placed on the police. Therefore, further research is required to devise a technique that the police could implement successfully.

An interesting problem associated with the limitations of using the cognitive interview in everyday police practice.

[~525 Words]

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This essay demonstrates an exceptionally clear understanding of the cognitive interview and its role in improving accuracy of eyewitness testimony. The outline knowledge is accurate and detailed, striking a balance between each strategy involved in the procedure in equal depth. The evaluation commentary is thorough, effective and focused on the demands of the question. The evaluation draws on suitable research evidence to provide an interesting discussion.

MEMORY ESSAYS

1. Describe and evaluate the multi-store model of memory. Refer to evidence in your answer. (16 marks)
2. Describe and evaluate types of long-term memory. (16 marks)
3. Discuss what psychological research has shown about working memory. In your answer, refer to theory and/or evidence. (16 marks)
4. Marcus is studying for his language exams. He revises Spanish followed by Italian one evening and then gets mixed up. For example, he recalled the Spanish words for 'dog' instead of the Italian word for 'dog'. Marcus finds that when he is at home revising with his father, his knowledge and memory are significantly better than when he is in the classroom completing a test in silence.

Discuss two explanations for forgetting and refer to Marcus in your answer. (16 marks)

5. Describe and evaluate how retrieval failure due to the absence of cues leads to forgetting. (16 marks)
6. A man is being questioned by police about an incident he witnessed outside a pub in his local area. An argument took place outside the pub, followed by a violent attack. The police later discovered a knife at the scene. "Did you see the knife the perpetrator was holding", asked the police. "I don't remember; however, there probably was a knife", replied the man. "I was so shocked and scared it's hard to remember exactly what happened. It's all my friends have been talking about over the past couple of days, so I'm not sure what I saw".

Discuss factors that affect the reliability of eyewitness testimony. Refer to the scenario in your answer. (16 marks)

7. Outline and evaluate research into the effects of leading questions on eyewitness testimony. (16 marks)
8. Discuss research into the effects of misleading information on the accuracy of eyewitness testimony. (16 marks)
9. Outline and evaluate research into the effects of anxiety on the accuracy of eyewitness testimony. (16 marks)
10. Discuss the use of the cognitive interview as a means of improving the accuracy of eyewitness testimony. (16 marks)

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