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AQA GCSE Psychology Revision Guide: Suggested Answers

PLEASE NOTE: This document contains suggested model answers. They are designed to help guide and instruct you but should not be considered definitive.

Chapter 1 Memory

Topic 1: Processes of memory: Encoding, storage and retrieval

Apply it

Read the item below and then answer the question that follows.

Jess loves studying languages as she finds that learning words by repeating them back to herself out loud helps her to remember them. She also has a vocabulary list of key words from each topic area for the exam with a definition of what each word means in English. She finds reading through this list useful as understanding words also helps her to remember them.

Identify the **two** types of encoding Jess uses in the item above. Explain your answer. [4 marks]

Suggested answer: Jess is repeating the words back to herself which relates to acoustic encoding as she is listening to the sound the words make.

Another type of encoding she is using is semantic as, by also learning the English definition of the words, she understands their meaning.

Knowledge check

1. Outline the difference between storage and retrieval. [2 marks]

Suggested answer: Storage involves keeping information in your memory whereas retrieval relates to bringing this information out of storage.

2. What is meant by the term 'encoding'? Give an example with your answer. [3 marks]

Suggested answer: Encoding relates to the form information takes when it is stored in your brain. One type of encoding is visual encoding where information is stored based on how it looks.

3. Briefly outline the different processes involved in memory. [4 marks]

Suggested answer: One process is encoding, which is the form information takes when we put it into our memory. For example, semantic encoding is when you understand the meaning of something, as opposed to focusing on the appearance of something (visual) or how something sounds (acoustic).

A second process is storage, which relates to holding information in your memory for a short or a long period of time.

A third process is retrieval which involves accessing this previously stored information so it can be remembered. Cued recall is retrieval involving a clue whereas free recall is when you remember without needing anything to remind you.

Word count = 103

Topic 2: Processes of memory: A study of encoding

Apply it Research Methods

A researcher studied how information is encoded in the short-term memory. Fifty participants were recruited by selecting every 20th person on a school register. Participants were given a list of words to remember.

Group 1: Had 20 words that sounded similar to each other (rolled, bold, fold, tip, sip, kip, etc.).

Group 2: Had 20 words that sounded different from each other (orange, dog, key, car, house, sea, etc.).

After 20 seconds of remembering the words, they had to recall the words in the order of presentation.

1. Identify the sampling method used in this study. [1 mark]

Suggested answer: Systematic sampling.

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2. Identify the experimental design used by the researcher. Explain **one** strength and **one** weakness of this design. [5 marks]

Suggested answer: An independent groups design was used. One strength of the design is because participants only do the experiment once there are no order effects. Therefore the order doesn't act as an extraneous variable. One weakness is that because there are different participants in each group there may be participant variables which may act as extraneous variables. This reduces the validity of the results.

Knowledge check

1. Briefly outline what the participants were asked to do in a study that investigated encoding. [3 marks]

Four groups were given 12 sets of five words to remember. Group A had similar sounding words, Group B had dissimilar sounding words, Group C had words with similar meanings, Group D had words with dissimilar meanings. Groups A and B were asked to recall their words immediately (testing STM) whilst Groups C and D were asked to recall their words after 20 minutes (testing LTM).

2. Describe and evaluate research related to how memories are encoded. [9 marks]

Suggested answer: In one study by Baddeley four groups of participants were given words to remember. Group A had similar sounding words, whereas group B had dissimilar sounding ones. Group C had words with similar meanings whilst group D had ones with dissimilar meanings. Groups A and B recalled their words immediately (testing STM) whilst groups C and D recalled after 20 minutes (testing LTM).

Group A recalled fewer words than group B whilst group C recalled fewer words than Group D. Similar sounding words were more poorly recalled than words with different sounds in STM. Words with similar meanings were more poorly recalled than words with different meanings in LTM. This shows STM is encoded by sound and LTM by meaning.

A strength was that this was a well-controlled laboratory study where extraneous variables were managed effectively. For example, hearing was controlled by giving participants a hearing test. Therefore, we can be more certain that the types of words used was the factor that affected participants' recall.

A weakness of this study is that encoding in short-term memory does not always involve sound. Other studies, such as Brandimonte *et al.*, have found that if pictures are used rather than words then visual encoding is used instead. This suggests that information does not always go into our short-term memory in an acoustic form.

A weakness is that long-term memory may not have been tested in the study. Waiting 20 minutes before recall doesn't mean the words are in the long-term memory. This may mean that the conclusion that long-term memory encodes acoustically lacks validity.

Word count = 262

Topic 3: Processes of memory: Different types of memory

Apply it

Read the item below and then answer the question that follows.

Maddie is learning to drive. She has a very good knowledge about the rules of the road and regularly gets almost full marks in the mock tests she does on theory. She is doing less well in the practical side of driving and constantly forgets how to perform the various skills she needs to know on the road.

Identify **two** types of long-term memory and explain how each of them relates to Maddie's behaviour. [4 marks]

Suggested answer: One type of long-term memory that Maddie is displaying is semantic as knowledge about the rules of the road relates to information that is stored in her 'mental encyclopedia'.

Another type of long-term memory she is displaying is procedural as learning how to drive is a practical skill that she performs. Over time this skill will become automatic so she will be able to perform it without conscious thought.

Knowledge check

1. Explain the difference between episodic and semantic memories. [4 marks]

Suggested answer: Semantic memory is your own encyclopedia of shared facts and knowledge of the world, whereas episodic memory is memory for events in a person's life. Therefore, semantic memories are always shared

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with many other people, whereas episodic memories may be unique to the person or just shared with close family and friends.

2. Explain **one** evaluation of different types of memory. [3 marks]

Suggested answer: A weakness is that distinctive types of LTM are difficult to separate. There isn't a clear difference between episodic and semantic memories because memories are usually a mixture of types. Therefore, having separate types of LTM may be an oversimplification.

3. Using your knowledge of the processes of memory, describe and evaluate different types of long-term memory. [9 marks]

Suggested answer: Episodic memory is your memory for events (episodes) from your life. This includes things you have done and experiences you have had, such as your birthday party when you were 10. You recall the time and place of such episodes, so memories are 'time-stamped'. Semantic memory is about 'meaning'. Your semantic memory is like your own encyclopedia. It is the meaning of everything you know and is shared with other people like Paris is the capital of France. Procedural memory is 'muscle memory', remembering how to do things. We can recall these memories without conscious awareness or without making a great deal of effort, such as remembering how to drive a car.

A strength of the idea of different types of long-term memories is that brain scans show that different types of LTM relate to different brain locations. For example, episodic memory is found in the right prefrontal cortex whereas semantic memory is associated with the left prefrontal area. This supports the idea that there are different types of LTM.

Another strength of different types of long-term memories is that they are supported by case studies of amnesiacs. For example, Clive Wearing lost most of his episodic memory but not his procedural memory as he could still play the piano. This shows there are different kinds of LTM.

One weakness is there isn't a clear difference between episodic and semantic memories. Amnesiac patients retain some of their semantic memories, and our everyday memories tend to be a fusion of episodic and semantic ones. Therefore, the idea of three stores may be just too neat and tidy to be true. It is an oversimplification.

Word count = 274

Topic 4: Structures of memory: The multi-store model

Apply it

Read the item below and then answer the question that follows.

A conversation takes place between two students.

Harvey: I don't understand how my teacher can remember everyone's name in the class whereas I still only know the names of a few people.

Muhsin: Maybe it is because he does things like taking the register every lesson and so he has had far more practice repeating their names than you.

Use your knowledge of the multi-store model to explain why Harvey can't remember all of his classmates' names but his teacher can. Refer to the above conversation in your answer. [3 marks]

Suggested answer: Harvey's teacher has rehearsed the names of his classmates far more than Harvey has as he has repeated them from the register every day and says them in class when he asks the students questions. As a result, he has successfully transferred this information into his long-term memory so that the names can be recalled at a later point in time. Harvey has not rehearsed all of his classmates' names as much as his teacher and so cannot remember them as well as the names have not gone into his long-term memory.

Knowledge check

1. Explain the role of sensory memory in the multi-store model of memory. [2 marks]

Suggested answer: Memory happens when information is received by one of the senses. These memories are encoded in a form appropriate to the sense so information received from your eyes is encoded visually. Sensory memory holds information from the senses for a short time and has a large capacity. Paying attention to information transfers it to the STM.

2. Outline **one** criticism of the multi-store model of memory. [4 marks]

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Suggested answer: A weakness is the model is too simple. The multi-store model suggests that we have just one STM and one LTM. However, research has shown that each of these stores has separate parts. For example, STM has been shown to be divided into separate visual and acoustic stores, and LTM into three separate stores – episodic, semantic and procedural memory. This suggests that our memory is far more complex than the multi-store model originally proposed.

3. Outline and evaluate the multi-store model of memory. [9 marks]

Suggested answer: The model consists of three kinds of memory where information moves from one store to the next. Firstly, information is received by one of the senses and is stored in our sensory memory which holds information for a short time and has a large capacity. Paying attention to information transfers it to the short-term memory (STM). This is a limited capacity store that holds 5–9 items/chunks of information for less than 30 seconds unless it is rehearsed. If information is rehearsed for long enough it is transferred into long-term memory which has a potentially unlimited capacity and duration.

A strength of the model is that there is support for the existence of different memory stores. Baddeley's study of encoding shows that STM and LTM encode information differently. This study demonstrates that the two types of memory have qualitative differences.

A weakness is the model is too simple, suggesting we have one STM and one LTM. Research shows STM is divided into visual and acoustic stores, and LTM into episodic, semantic and procedural memory. So, memory is more complex than the model proposes.

Another weakness is that research studies in the 1950s and 60s tended to use artificial memory tasks. The studies often required participants to recall word lists or nonsense syllables such as PRQ or SDF. This means that the results would not illustrate all the different ways we use memory in our everyday lives but instead tended to focus on verbal learning.

Word count = 243

Topic 5: Structures of memory: Primacy and recency effects in recall

Apply it Research Methods

Imagine that you are a psychologist and are interested in primacy and recency effects when learning a list of 30 words. Describe how you would conduct this experiment.

You need to include:

- The task you would do to assess the primacy and recency effects.
- What you would measure.
- The results you would expect to find from your experiment. [6 marks]

Suggested answer: Task: The task will involve reading participants the list of 30 words out loud and asking them to try to remember each word. After the list of words has been read out to the participants they will be asked to recall the words immediately by writing them on a piece of paper.

Measure: The primacy effect will be measured by the number of words the participants can remember from the first 10 words. The recency effect will be measured by the number of words participants can remember from the final 10 words on the list. The number of words participants could remember in the middle will also be calculated.

Results: It would be expected that participants will be able to remember more words from the first and last 10 words than those in the middle. The words in the middle won't be remembered as well as they won't be in the long- or short-term memory.

Knowledge check

1. Explain how recall is affected by primacy and recency effects. [4 marks]

Suggested answer: The primacy effect means that words which appear first in a list will be more likely to be recalled because they can be rehearsed. By the time they are recalled they will have become long-term memories because of this rehearsal. The recency effect refers to the words will have been heard more recently. This means they will still be in the short-term memory so are more likely to be recalled than words in the middle of a list.

2. What is meant by the phrase 'serial position curve'? [2 marks]

Suggested answer: 'Serial position' refers to the fact that the position of a word in a list affects the likelihood of its recall. The curve shows the tendency of people to recall the first and last words in a list best.

3. Describe Murdock's serial position curve study and evaluate the research methods used in that study. [9 marks]

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Suggested answer: Murdock wanted to see whether the position of a word in a list affected people's ability to recall it. Words from the most common words in English were chosen randomly. Participants who were on a psychology course listened to 20 word lists with 10 to 40 words on each list. They recalled the words after each list. It was found that recall was related to the position of the word in the list. Higher recall was found for the first few words in a list (primacy effect) and the last few words (recency effect) more than those in the middle of the list. This shows the serial position effect, which means the position of a word determines the likelihood of recall.

Note – the evaluations here are related to the research method as required in the question.

One strength was that the study was well-controlled. For example, the familiarity of the words was checked and the same across each list. This removes that as an extraneous variable and means the researcher can be more certain that any changes in the dependent variable are due to the independent variable and not some other variable. This means that we can be more confident about cause and effect conclusions.

Another strength is that laboratory experiments can use standardised procedures because of the control that is possible. This reduces the impact of extraneous variables and also means that the experiment can be repeated by another researcher to see if the results are the same. This can further confirm the validity of the findings.

A weakness is that in a laboratory experiment, participants are likely to know they are being tested. This may cause them to change their behaviour to try to help the experimenter get the results they want. This means that participants' behaviour is not like it would be in everyday life so the data collected might lack validity.

Word count = 298

Topic 6: Memory as an active process: Bartlett's War of the Ghosts study

Apply it

Read the item below and then answer the question that follows.

Tabitha was unfortunate enough to witness a bank robbery. She was asked to describe the robber to the police. She said the robber was a man wearing a ski mask and he had a gun in his hand. However, when the police checked the CCTV they could see Tabitha was completely wrong – the robber was clearly female, did not have a mask and no gun.

Use your knowledge of Bartlett's War of the Ghosts study to explain why Tabitha's memory was inaccurate. [3 marks]

Suggested answer: Tabitha did not recall the bank robbery accurately but instead reconstructed the memory with her prior knowledge of this type of situation. In the same way that Bartlett's participants used their previous expectations to reconstruct the War of the Ghosts story, Tabitha used her knowledge of bank robberies to influence what she recalled. Typically, bank robbers tend to be male, wear masks and have guns and so Tabitha recalled these details rather than what actually happened.

Knowledge check

1. Describe the procedure used in Bartlett's War of the Ghosts study. [2 marks]

Suggested answer: Participants were shown the War of the Ghost's story. They were asked to recall it after 15 minutes. Bartlett then showed the new version to another person and asked them to recall it a short time later and repeated this with further participants. Bartlett kept a record of the recall.

2. Briefly evaluate Bartlett's War of the Ghosts study. [3 marks]

Suggested answer: A weakness is that the story was unusual, so the recall of the story may not reflect everyday memory processes. Most of the time we use our memories to deal with everyday experiences, so these would not be affected by cultural expectations. Therefore, this study tells us little about everyday memory.

3. Describe and evaluate a study that investigated how memory is an active process. [9 marks]

Suggested answer: Bartlett wanted to see whether people would reconstruct an unfamiliar story when they recalled it. Participants were shown the War of the Ghost's story. They were asked to recall it after 15 minutes. Bartlett then showed the new version to another person and asked them to recall it a short time later and repeated this with further participants. Bartlett kept a record of the recall. Bartlett found that participants changed the story and left out information they were less familiar with. The story was shortened, and phrases were changed to words used in the participant's own culture. This shows we use our knowledge of social situations to reconstruct memory as details of the story were invented to improve meaning.

A weakness with this study is that Bartlett's own beliefs may have affected the results as he analysed the recollections himself. His belief that recall would be affected by cultural expectations may have biased the interpretation of the results. Therefore, we cannot fully trust the conclusions from his study.

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Another weakness of the study is it has a lack of control as the participants were not told accurate recall was important. Other studies found recall was better when participants were told this. This suggests recall is more accurate than Bartlett concluded.

Another weakness is the story was unusual and therefore may not represent how we use our memory in real life. In such cases our memories are not affected by cultural expectations and we therefore may recall things quite accurately. Therefore, this study may tell us very little about everyday memory.

Word count = 260

Topic 7: Memory as an active process: The theory of reconstructive memory

Apply it Research Methods

A study was conducted where participants were taken into a kitchen for 30 seconds and shown objects consistent with what would be found in a kitchen (such as a kettle) and objects not consistent (such as a brick). Participants were then asked to recall the 30 objects they saw in the room. The target population for this experiment was students at Bristol University studying history where 200 students took the subject.

1. Identify the independent and dependent variables in this study. [2 marks]

Suggested answer: The independent variable is whether objects are consistent or inconsistent with what is found in a kitchen. The dependent variable is the number of objects recalled in each condition.

2. Write a suitable alternative hypothesis for this study. [2 marks]

Suggested answer: There is a difference in the number of objects recalled that are consistent compared to inconsistent with what is found in a kitchen. (a possible non-directional hypothesis)

Or ... More objects are recalled that are consistent with what is usually found in a kitchen than objects that are not consistent. (a possible directional hypothesis)

3. Explain what is meant by 'systematic sampling' and explain how it might be used in this study to select 20 participants. [3 marks]

Suggested answer: Systematic sampling is when a list of all possible participants is drawn up and every nth person is selected.

In this study a list of all the students who study history at the university would need to be obtained which can then be put into alphabetical order. The psychologist could then choose every 10th name on the list to use as the participants.

Knowledge check

1. Outline what is meant by the phrase 'effort after meaning'. [2 marks]

Suggested answer: When we experience events, we focus on the meaning of the event. Later, when recalling the event, we try to make sense of the 'fragments' of information in terms of the general meaning. Our efforts relate to the general meaning of the event rather than the actual physical details of the event.

2. Describe how memory may be an active process. [3 marks]

Suggested answer: Memory is an active process because people do not record whole memories, they store fragments of information and build these fragments into a meaningful whole when they need to recall something. This means that elements may be missing and memories may not be an accurate representation of what has happened. People tend to remember the overall meaning of events and reconstruct memories from this overall meaning. The way that we store and recombine the small pieces can be related to social and cultural expectations which influence the meaning.

3. Describe and evaluate how the theory of reconstructive memory has increased our understanding of memory. [9 marks]

Suggested answer: The theory suggests that memory is an active rather than a passive process. People don't just record everything that happens. The reconstructive theory suggests that people store fragments of information and build these fragments into a meaningful whole when they need to recall something. This means that memories may not be an accurate representation of what has happened because elements may be missing. The way we store the small pieces is related to our social and cultural expectations. These expectations influence the way we then later recombine and recall the information.

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A strength is that the theory reflects how we use memory in our everyday lives. The research doesn't use word lists or nonsense syllables (which aren't like everyday memory) but instead uses a story. This makes the theory more relevant to real-life memory processes.

However, a weakness is that it is wrong to suggest that all memories are inaccurate or affected by social expectations. Studies have shown that memory can be very accurate. For example, in situations that are personally important or distinctive, we do remember considerable and accurate detail. In Bartlett's study, participants often recalled 'Something black came out of his mouth' because it was quite a distinctive phrase. This shows that people do not always actively reconstruct memories and shows that some memories are accurate.

A strength is that reconstructive memory explains problems with eyewitness testimony (EWT). Bartlett's research showed memory is affected by expectations so shows people do not always recall accurately. Therefore, EWT is no longer solely relied on as evidence in criminal investigations.

Word count = 259

Topic 8: Factors affecting the accuracy of memory: Interference

Apply it

Read the item below and then answer the question that follows.

Laura is revising for her exams. She finds that when she learns business studies and accounting on the same day she can't recall which topic areas belong to which subject. She thinks it is because they are both to do with money.

Describe and evaluate **one** factor affecting the accuracy of memory. Refer to Laura's problems with revising in your answer. [9 marks]

Suggested answer: Interference suggests that two memories can conflict with each other and affect recall. This often occurs when the memories are similar, as this causes them to compete with each other, which makes it difficult for the person to access the information from their long-term memory. McGeoch and McDonald illustrated this when they found that participants were able to recall a list of ten words more effectively than other groups who had other lists of words to remember as well. Recall was poorest when the additional list contained similar words to those on the first list.

This relates to Laura as learning two similar subjects together affects her recall of both of them. This could be due to the fact that both business and accounting relate to the same topic (money). This is why she can't recall which topic areas go with which subject as she has difficulty accessing the correct information from her long-term memory. She should try to revise the two subjects on different days.

A weakness with the idea of interference is that it may not explain why we forget. This is because information is not forgotten but rather cannot be accessed because an appropriate cue has not been given. This means that interference doesn't actually cause inaccurate memories.

A strength of the research is it was well controlled. For example, counterbalancing was used to reduce the impact that learning the lists in the same order would have. Using word lists is artificial but it does relate to Laura's revising for exams. So altogether this research is high in validity when considering Laura's problem.

Word count = 268

Knowledge check

1. Describe how interference theory can be applied to using memory in the real world. [2 marks]

Suggested answer: When we are revising for exams and are revising two similar subjects like French and Spanish we need to be aware that one memory may interfere with another. This is especially true because we may be learning the meaning of the same words. It might be good to revise them on different days.

2. Explain **one** problem with interference as a factor that affects the accuracy of memory. [3 marks]

Suggested answer: A problem with interference is that it may not be an explanation of forgetting. It may be that information is not forgotten but just cannot be accessed because an appropriate cue has not been given. Tulving and Psotka found participants given pointers to aid recall remembered many items that were meant to be forgotten. Therefore, interference doesn't cause inaccurate memories as the above study shows that information is stored correctly but just isn't accessible.

3. Outline and evaluate the effect of interference on the accuracy of memory. [9 marks]

Suggested answer: Interference occurs when two memories compete with each other. One memory prevents us accessing the other memory. A study was conducted by McGeoch and McDonald where participants learned a list of

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10 words (list 1) and then studied another list (list 2). It was found that when participants were asked to recall the initial list of words (list 1), their memory was affected by list 2. The effect was strongest when the words in list 2 had similar meaning to the words in list 1. This shows that interference from a second set of information reduces the accuracy of memory. Interference is strongest when the two sets of information are similar.

Research that supports interference theory has a high level of control, so it tests memory in an unbiased way. For example, McGeoch and McDonald used techniques such as counterbalancing to control order effects which would have acted as an extraneous variable and reduced the validity of the results. This gives the theory greater validity.

A weakness is that the research used to support interference theory does not reflect real-life memory activity. We don't often have to remember lists of words or very similar things. This means the conclusion about the effect of interference on the accuracy of memory is limited because it only applies to very specific conditions.

Another weakness with interference is that it may not be an explanation of forgetting. It may be that information is not forgotten but just cannot be accessed as an appropriate cue has not been given. Therefore, interference only appears to cause inaccurate memories.

Word count = 262

Topic 9: Factors affecting the accuracy of memory: Context

Apply it Research Methods

A teacher wants to see whether context does affect memory. She gives all her students 30 words to learn.

The next day she tests half the class in the same classroom where they learned the list (Group A). She tests the other half of the class (Group B) in a different classroom.

1. Write a set of standardised instructions that could be read to the participants. [4 marks]

Suggested answer: Hello, welcome to this experiment on memory. All data collected in this study will be recorded anonymously. You have the right to withdraw from this experiment at any time. In front of you is a piece of paper with 30 words to remember, you have two minutes to remember them. Please do not speak or make any noise or write anything. Your two minutes is starting now.

(After two minutes) Please stop remembering the words.

(The next day) For the experiment all of the participants in group A must go to the classroom next door whilst those in group B must stay in here.

(All participants seated with a piece of paper and a pen.) You have three minutes to write down all the words you can remember.

(After three minutes) Please stop writing.

2. The teacher used randomisation in her study. Briefly explain how she could have done this. [2 marks]

Suggested answer: The teacher could have put all the 30 words in a hat and the order that she pulls them out of the hat will be the order they appear on the list.

3. Identify **one** descriptive statistic the psychologist could use to compare the results from the two groups and explain how it would be calculated. [3 marks]

Suggested answer: The mean could be used. This is where the researcher could add up all the scores from the two groups separately and divide by the total number of people there are in each group. The means can then be compared.

Knowledge check

1. Outline what is meant by a 'context'. [2 marks]

Suggested answer: This is the situation in which something happens. If the situation is similar for remembering and later recall the context can act as a cue to recall.

2. Use your knowledge of psychology to describe how context affects the accuracy of memory. [3 marks]

Suggested answer: If the context is the same when memories are encoded and recalled, it will enhance the ability to recall information. If the context is different, this can decrease how much is recalled. This is because the context of learning acts as a trigger or cue when trying to remember information. Godden and Baddeley found participants who learned words on the beach and recalled them on the beach remembered more than those who changed context (such as learning words on the beach and recalling them underwater).

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3. Describe and evaluate a study that has investigated how context affects the accuracy of memory. [9 marks]

Suggested answer: Godden and Baddeley investigated whether context affects recall. Divers had to listen to a list of words and were asked to recall them in the same or different settings: There were four groups. Two had the same context and learned on the beach or underwater and then recalled words in the same context. Two groups learned and recalled in different contexts, they learned words on the beach and recalled them underwater or vice versa. Recall was highest when context was kept the same. When a person was in the same environment for learning and recall, their memories were more accurate. Context of learning acts as a trigger, and so improves the accuracy of memory.

One weakness is that word lists were used to test memory, which is not a 'natural' way to investigate recall. This is a field experiment, so the environment is 'natural' but the task isn't 'natural'. This shows that the results can't be applied to all situations.

Another weakness is that the study was unrealistic as participants recalled the words almost immediately. This does not relate to scenarios like exams where the gap between learning and recall is longer. Therefore, research only tells us about short-term recall.

Another weakness is that the effect only applies to very similar situations. Context only acts as a cue for recall if the context at the time of learning is very similar to the context at the time of recall. Therefore, context effects do not affect the accuracy of recall in many situations.

Word count = 252

Topic 10: Factors affecting the accuracy of memory: False memories

Apply it Research Methods

In a study on false memory, 20 mothers are asked to describe 10 childhood events to their 14-year-old child. Before the study the psychologist tells the mothers to include a false event that never happened. Four weeks later the psychologist asks the children to write down what happened in each of the 10 events.

1. Is the data that is collected primary or secondary data? Explain your answer. [3 marks]

Suggested answer: The data is primary data because the psychologist has collected data specifically for the purposes of this hypothesis.

2. The study produced qualitative data. What is meant by the term 'qualitative data'? [2 marks]

Suggested answer: Qualitative data is when information has been collected in the form of words rather than numbers. It is data that relates to people's thoughts and feelings on a particular topic.

3. Identify and briefly explain **one** ethical issue the psychologist should have considered in this study. [2 marks]

Suggested answer: One ethical issue the psychologists should have considered is confidentiality. The data collected needed to remain anonymous so participants' privacy was protected.

Knowledge check

1. Outline what is meant by a 'false memory'. [1 mark]

Suggested answer: A false memory is recalling something that did not happen but it feels like it is a true memory. In Loftus and Pickrell's study some people later had a memory of an experience in their childhood which actually never happened.

2. Describe the effect that false memories have on the accuracy of memory. [2 marks]

Suggested answer: False memories are recollections of events that are not based in reality. People either remember things that didn't happen or remember them differently from the way they really were.

3. Describe and evaluate **one** way in which false memory was investigated. In your answer include the method used, the results obtained and the conclusion drawn. [9 marks]

Suggested answer: Loftus and Pickrell gave participants four stories about childhood events of which three were true and one false (getting lost in a shopping mall was the false one). The story was created with the help of a relative so that it sounded realistic. Participants read each story and later they were interviewed about the stories and were asked to recall as much as they could. It was found that 68% of the true episodes were remembered. Six out of 24 (25%) of participants recalled the false story fully or partially. The rest had no memory of it. This shows imagining an event can implant a false memory in a person, reducing the accuracy of memory.

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One weakness of the study is that the false memory event (lost in a mall) is not of the same traumatic kind that might be recovered by a therapist. It may well be that relatively harmless events can be implanted quite easily but this does not mean that the same would be true of something much more traumatic and memorable. Therefore, the conclusions that can be drawn from this study are limited.

Another weakness is that the research raises ethical concerns. Even though participants were debriefed, they may be left with implanted false memories which lingered after the study was finished. Therefore, the study may have caused psychological harm, an ethical issue.

A strength is that this research has implications for eyewitness testimony (EWT). The results suggest that police questioning could accidentally implant false memories. Therefore, this research has been beneficial in explaining why EWT might be unreliable.

Word count = 263

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Chapter 2 Perception

Topic 1: Sensation and perception

Apply it Research Methods

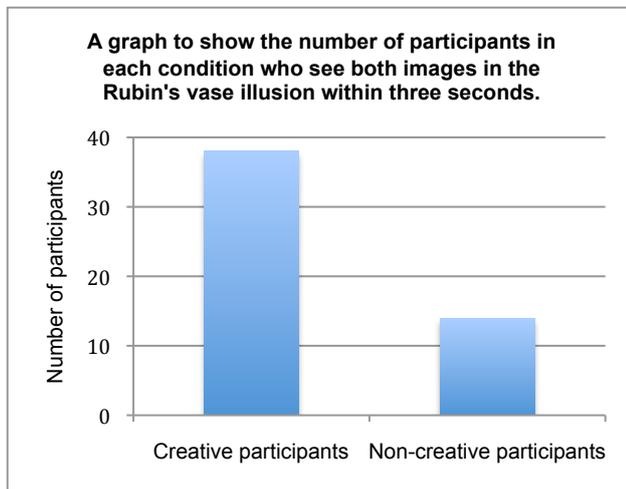
A psychologist was interested in whether people who are creative are more able to flip between the face and the vase in the Rubin's vase illusion within three seconds in comparison to those who are not creative. She showed the illusion to 80 people, 40 who were classed as creative and 40 as non-creative. She found that 38 creative people could flip between the face and the vase in the illusion within three seconds whereas only 14 of the non-creative people could.

1. Express the **two** findings as percentages of the participants in each condition. Show your workings. [4 marks]

Suggested answer: Creative participants: $38 / 40 \times 100 = 95\%$, non-creative participants: $14 / 40 \times 100 = 35\%$

2. Draw a bar chart of the data. Label the axes carefully and give it a suitable title. [4 marks]

Suggested answer:



3. Write **one** conclusion you could draw from your graph. [2 marks]

Suggested answer: People who are creative are better able to see both images in the duck-rabbit illusion than people who are not creative.

Knowledge check

1. What is meant by the term 'perception'? [2 marks]

Suggested answer: The organisation and interpretation of sensory information by the brain. Sense receptors receive information which the brain then interprets.

2. Briefly describe the Ames Room illusion. [2 marks]

Suggested answer: The room is the shape of a trapezoid. When two people stand either side of the back wall, one person looks bigger than the other.

3. The Ponzo illusion is an example of a visual illusion. Explain the illusion. [2 marks]

Suggested answer: The illusion of depth is created by two lines coming closer together as in a perspective drawing. There are two equal length horizontal lines. The line that is higher appears longer because it appears to be more distant. This is because if you see two objects that have the same retinal size and one appears more distant, then it would have to be larger to have the same retinal size.

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Topic 2: Visual cues and constancies

Apply it

Read the item below and then answer the question that follows.

Dave had a nasty accident that resulted in him losing the vision in one eye. Since this happened he has noticed that he is bumping into things far more than he used to do.

Use your knowledge of binocular depth cues to explain why this would occur. [3 marks]

Suggested answer: As Dave only has vision in one eye, he can no longer use the binocular depth cue of retinal disparity. This involves using the difference between the left and right eye's view to work out the depth and distance of objects in his visual field. Dave's lack of retinal disparity causes him to bump into things more easily as he can no longer use that depth cue.

Knowledge check

1. What is meant by the term 'convergence' in the context of perception? [1 mark]

Suggested answer: The eyes become closer together (converge) when objects are close to us.

2. Identify **two** monocular depth cues and explain how each helps us to perceive the distance of objects. [4 marks]

Suggested answer: (1) Height in the visual plane is a depth cue because objects that are higher up in the visual field are usually further away. (2) Relative size gives the perception of distance because objects that appear smaller in the visual field are seen as being further away.

3. Outline how binocular depth cues can be used to perceive distance and depth. [5 marks]

Suggested answer: Retinal disparity happens because our eyes are six cm apart so the left and right eye view slightly different images. The amount of difference there is in the image each eye receives gives the brain important information about distance. When considering two objects that are the same distance apart, the retinal image will differ as the closer the object, the bigger the distance between retinal images; conversely, the further away the object, the smaller the difference there is between the images.

Convergence relates to how hard the eye muscles have to work to view objects. The closer an object is, the harder the eye muscles have to work. This gives the brain information about depth and distance.

Topic 3: Visual illusions

Apply it Research Methods

A GCSE Psychology student is interested in visual illusions. He conducts a structured interview with 30 people in his psychology class. One question he asks the participants is to score how much they like the Necker cube illusion out of 10, where 1 means they don't like it and 10 means they love it. He collects the following data:

5,8,7,3,2,4,3,2,7,8,9,10,2,5,5,7,6,8,7,8,9,3,4,6,7,8,2,1,5,6,9.

1. Construct a frequency table of the results. Make sure it is accurately labelled and give it an appropriate title. [4 marks]

Suggested answer: A frequency table to show the ratings on a scale of 1–10 of how much the Necker cube illusion was liked.

Score: Rating of how much the Necker cube illusion was liked	Tally	Frequency
1		1
2		3
3		3
4		2
5	###	5
6		0
7	###	6
8		4

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9		5
10		1

2. The study produced a lot of quantitative data. What is meant by the term 'quantitative data'? [1 mark]

Suggested answer: Information that can be counted, usually in the form of numbers or tallies.

Knowledge check

1. Identify **one** ambiguous figure. [1 mark]

Suggested answer: The Ponzo illusion.

2. With reference to the Müller-Lyer illusion, outline what is meant by a 'misinterpreted depth cue'. [5 marks]

Suggested answer: A misinterpreted depth cue is where the brain sees linear perspective in a picture and this creates the impression of distance. The brain then mistakenly applies the rules of size constancy.

In the Müller-Lyer illusion the ingoing fins give the impression that the line is shorter, possibly because it looks like the corner of a building which projects out towards us. On the other hand, the outgoing fins make the line seem longer, possibly because it looks like the inside corner of a room which is further away from us. This means the brain is fooled into perceiving distance when it applies the rules of size constancy to a two-dimensional picture.

3. Briefly describe **two** visual illusions and explain how each of them works. [6 marks]

Suggested answer: (1) The Necker Cube is a two-dimensional drawing that looks like a three-dimensional cube. There are two possible interpretations of the same image and the brain can't decide which one to choose. The cube can be perceived as either pointing upwards to the right, or downwards to the left.

(2) The Kanizsa Triangle consists of three solid black circles with a slice cut out and three Vs. They make it look as if there is a solid white triangle in front of them. This is because the shapes suggest contours which are not there (illusory contours).

Topic 4: Gibson's direct theory of perception

Apply it

Read the item below and then answer the question that follows.

Mellissa is a curious child, constantly asking her mum questions about the world. As they are driving on the motorway Mellissa can see the hotel that they are going to but it doesn't appear to be getting any closer whereas other objects are. She also notices that bushes at the side of the road are rushing past at a faster rate than the houses behind them.

Use your knowledge of Gibson's direct theory of perception to explain why the objects in Mellissa's visual field are moving at different speeds. [4 marks]

Suggested answer: The optic flow patterns in Melissa's visual field help her as she can tell that the hotel is further away since it is stationary while she is moving whilst other objects are rushing away from it. The objects at the side of the road relate to the monocular depth cue of motion parallax which we use to judge the speed of objects in our visual field. This cue can also help her work out that the bushes next to the road are nearer as they are moving faster than the objects that are further away such as the houses behind them.

Knowledge check

1. Outline what is meant by the term 'motion parallax'. [2 marks].

Suggested answer: This is a type of monocular depth cue that provides the brain with important information to do with movement. Objects that are far away appear to move more slowly as we move than objects that are closer to us.

2. Explain the role of nature in Gibson's direct theory of perception. [3 marks]

Suggested answer: Gibson believed that our perceptual abilities are innate, i.e. they are already present at conception, they are in our nature. We do not learn to perceive the world around us. The visual environment is rich with information and the eyes can detect very fine changes in light, texture, movement and depth which allows us to deal with our surroundings and understand depth and distance without the need for past experience.

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3. Describe and evaluate Gibson's direct theory of perception. [9 marks]

Suggested answer: Gibson's theory suggests that perception happens directly. Sensation and perception are the same. The visual environment gives us all the information our brain needs to perceive things accurately. We do not need to fill in gaps by using expectations and past experience. One of the key concepts is optic flow patterns. When we are moving, the point we are moving towards stays stationary while the rest of the view seems to rush away from it. These optic array patterns are detected by our eyes and let our brains know that we are moving. Another example of direct perception is motion parallax which comes from binocular cues. Objects that are far away appear to move more slowly as we move than objects that are close to us.

A strength of Gibson's theory is that it has real-world meaning. Research was based on the experience of pilots from the Second World War. Gibson's theory is therefore very good at explaining everyday perception of things like movement and depth. This makes it more relevant to explain how we perceive the world on a daily basis.

A weakness of Gibson's theory is that it struggles to explain visual illusions. Gibson proposed that we will always perceive accurately whereas illusions trick the brain into misperception. This suggests there is more to perception than his theory suggested.

A strength of Gibson's theory comes from a study by Gibson and Walk. They found that very few infants would crawl off a visual cliff. It is unlikely that their reluctance to crawl off the edge of the visual cliff could be something they had learned. This suggests that infants are born with an ability to perceive depth, which shows that some perception is innate.

Word count = 267

Topic 5: Gregory's constructivist theory of perception

Apply it

Look at the picture and answer the questions that follow.

1. Use your knowledge of Gregory's theory to explain why people see a face in this tree. [2 marks]

Suggested answer: According to Gregory, the brain uses our past experience to make sense of the world. We therefore use the cues in the picture to make sense of what we see, so even if there is no face in the tree people still perceive one to be there.

2. Gregory's theory has been criticised. Use your knowledge of psychology to explain how the example of perceiving faces can be used to evaluate Gregory's theory. [2 marks]

Suggested answer: The ability to perceive faces may be inherited rather than something we learn. This means that we are not using past experience to interpret this image but it is an innate tendency at least in some cases.

Knowledge check

1. What is meant by a 'constructivist theory of perception'? [2 marks]

Suggested answer: This is the argument that we make sense of the world around us by building our perceptions based partly on incoming data and partly using clues from what we know about the world. The clues we use mean we construct the perception.

2. Explain the role of nurture in relation to Gregory's constructivist theory of perception. [3 marks]

Suggested answer: Gregory believed that our understanding of visual cues is learned from experience, i.e. it is not innate. Our perception becomes more sophisticated as we grow up and interact more with the world around us. Our perception of the world is therefore learned through our interactions with the physical and/or social environment.

3. Outline and evaluate how, according to Gregory, perception uses inferences from visual cues and past experiences to construct a model of reality. [9 marks]

Suggested answer: A lot of what we perceive in the world around us is incomplete, so our brain will often need to 'fill in the gaps' using inference. The brain uses the sensory information that is available in the environment to draw a conclusion about what our eyes are seeing. Most of the time the inference the brain makes will be correct but sometimes it is not. The brain has help when making inferences, in the form of visual cues and past experiences. These help us to perceive things like depth, distance, and the size and shape of objects. Sometimes the way we interpret cues turns out to be wrong, which creates visual illusions.

One strength of Gregory's theory is that it has good support from studies that show cultural differences in perception. Research in different parts of the world has found that people interpret visual cues differently. This means that their

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different experiences have affected their perception, so this shows that nurture plays a key role in helping us understand the world around us.

One weakness relates to Gregory's use of visual illusions to support his theory. They are artificial images that are deliberately designed to fool us, so his theory may not tell us much about how perception works in the real world.

Another weakness is that Gregory's theory cannot explain how perception gets started in the first place. Research has shown that babies have some perceptual abilities at birth. This suggests not all perception is the result of our experience.

Word count = 251

Topic 6: Factors affecting perception: Culture

Apply it

In his study Hudson compared different cultures who were schooled and unschooled.

1. Explain why it was important for Hudson to use standardised procedures with each participant in this research. [3 marks]

Suggested answer: It is important to use standardised procedures to make the experiment unbiased. If some people are asked questions differently, it could act as an extraneous variable and have an effect on the results, leading to an incorrect conclusion.

2. Name and explain **two** ethical issues that could be a problem in this research. [4 marks]

Suggested answer: The first ethical issue is protection from harm. Participants' physical and psychological safety should be protected at all times. Stress and embarrassment is included in this; for example, participants might feel stressed if they weren't sure of what answer to give.

The second ethical issue is informed consent, which is at the beginning of a study. Participants should be given comprehensive information concerning the nature and purpose of a study and their role in it. They need to know enough to be able to decide whether to agree to take part. If they don't know such details then they could find themselves agreeing to do something they feel very uncomfortable about.

3. Explain how **one** of these ethical issues could be dealt with in this study. [3 marks]

Suggested answer: To deal with informed consent, researchers should produce a letter for participants (or their guardians) explaining what the study involves and, if appropriate, the aims. This should explain everything participants need to know about the investigation, so they can make an informed choice about whether to take part. Participants are then asked to sign a consent form. If participants are under 16, this form should be signed by a parent or guardian.

Knowledge check

1. What is meant by the term 'perceptual set'? [1 mark]

Suggested answer: Perceptual set is a tendency or readiness to notice certain aspects of the sensory environment whilst ignoring others.

2. Briefly outline what the participants were asked to do in a study into culture and perceptual set. [2 marks]

Suggested answer: 2D drawings were shown to children from various different cultures. The drawings contained an image of an antelope, an elephant and a man with a spear. In each of these drawings, the spear is pointing at both the antelope and the elephant, but depth cues suggest where it is actually pointing. Hudson asked participants in the study which animal the huntsman in the picture is trying to spear.

3. Describe and evaluate the influence of culture on perception. [9 marks]

Suggested answer: Perceptual set is influenced by culture so what we are used to and familiar with determines what our senses pick up. Hudson looked at the impact of culture on perception. He showed 2D drawings to children from different cultures. The children had to say which animal a man was trying to spear in the picture. Although the spear was pointing at both an elephant and an antelope, the depth cues suggested it was pointing at just the antelope. Younger children had difficulty using depth cues whereas older European ones could interpret the depth cues by correctly stating where the spear was actually being pointed. This shows that people from other cultures do not use depth cues in the same way and therefore have a different perceptual set.

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One weakness of research with people from different cultures is that the instructions may not make sense to them. In all cross-cultural studies there is the problem of a language barrier. This may affect how valid the results in these studies are.

Another weakness is that some of the participants may have been confused by seeing 2D drawings. Many of the African participants that were tested had never seen paper before and seemed more interested in this aspect of the study than the general procedure. The method of presentation may have influenced the results in this cross-cultural study.

A further weakness is that Hudson's study supporting the effect of culture is from a long time ago and had some design issues. For example, the tester asked the questions out loud and may have unconsciously indicated which answer to give. This means that the conclusions may lack validity.

Word count = 274

Topic 7: Factors affecting perception: Emotion

Apply it

Read the item below and then answer the question that follows.

Oli has been dating Aimee for two months now and he couldn't be happier. He has always listened to the radio on the way to school but recently he has noticed that so many of the songs that he hears are about love.

Use your knowledge of the role of emotion on perception to explain Oli's experience. [3 marks]

Suggested answer: Emotion affects how we perceive things. When in an emotional state our brain is more likely to notice things that are exciting and unusual. In this case, Oli's feelings towards Aimee are influencing what he sees in his world. His happiness means he is more sensitive and therefore is more likely to notice that there are more songs about love on the radio.

Knowledge check

1. Outline what is meant by 'emotion' in relation to perceptual set. [2 marks]

Suggested answer: Emotion is a strong feeling or mood that has important motivational properties. In other words, it drives an individual to behave in a particular way. This is related to perceptual set because feeling emotional motivates us to look at certain things or avoid looking/hearing other things.

2. Explain **one** criticism of research on the effect of emotion on perceptual set. [4 marks]

Suggested answer: A weakness of studies that support the effect of emotion on perceptual set is that the results are contradictory. Studies of emotion and perceptual set suggest that sometimes we are more likely to notice emotional material, and sometimes we are less likely. What they do not tell us is why perceptual defence occurs in some situations and why perceptual sensitisation occurs in others. This makes it difficult for psychologists to predict behaviour if they are unsure which of the two effects emotion will have. It makes it difficult to draw conclusions about the effect of emotion on perception.

3. Describe and evaluate how research has increased our understanding of the effect of emotion on perceptual set. [9 marks]

Suggested answer: Research by McGinnes has shown that perceptual defence is used by the brain when confronted with words that are anxiety provoking. Eight male and eight female students were shown neutral and offensive 'taboo' words flashed on a screen. After each word was shown, participants had to say it out loud. The amount of emotional arousal was measured through their galvanic skin response (GSR), which records electrical changes in the skin. Participants took longer to say offensive words like 'bitch' and 'penis' than neutral ones like 'apple' and 'dance'. Taboo words produced bigger changes in the GSR than neutral words. This shows emotion affects perceptual set.

One strength of the research is that it used an objective measurement of emotion. Many studies of perceptual set are based on self-report methods such as rating scales, which may lack validity because people don't tell the truth. However, studies of emotion such as McGinnes', use more objective scientific methods such as galvanic skin response to test biological stress (anxiety) responses. This produces results that are less open to bias than, for example, rating scales.

One weakness is that delayed recognition may be more to do with embarrassment. Participants may have hesitated in giving their response as they were uncomfortable repeating rude words in a study. This suggests that awkwardness may have been an extraneous variable.

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Another weakness of studies in this area is that the results are contradictory. This is because sometimes they suggest we are more likely to notice emotional material, and sometimes we are less likely. This makes it difficult for psychologists to draw firm conclusions.

Word count = 264

Topic 8 Factors affecting perception: Motivation

Apply it Research Methods

Gilchrist and Nesberg's study into motivation and perceptual set was an experiment using an independent groups design. Participants were randomly allocated to the two conditions in the study.

1. Identify the independent variable in Gilchrist and Nesberg's study. [1 mark]

Suggested answer: Whether participants went without food for 20 hours or didn't go without food.

2. Explain **one** strength of using an independent groups design for this study. [2 marks]

Suggested answer: It means that there are no order effects, such as a practice effect. If this was repeated measures design the participants' judgement of the food might be affected the second time round because they had already made a judgement the first time around.

3. Explain why the researchers used randomisation to allocate participants to the two conditions. [2 marks]

Suggested answer: This would be done as a way to control possible differences between the participants in the two groups. You might have all the people who are good at judging brightness in one group. If they are randomly allocated to the two groups, this should control for this.

Knowledge check

1. What is meant by the term 'motivation' in relation to perceptual set? [2 marks]

Suggested answer: Motivation refers to the forces that 'drive' your behaviour. For example, hunger is a basic drive state which pushes an animal to seek food. It affects how you perceive things. For example, if you are hungry, food may seem brighter.

2. Outline **one** way that research by Gilchrist and Nesberg has increased our understanding of how motivation affects perceptual set. [2 marks]

Suggested answer: Their study increased our knowledge because it showed that when people were hungry their perception was different from people who were not hungry. It therefore supported the idea that being in a motivated state (i.e. hungry) drives you to behave differently.

3. Describe and evaluate **one** study into how motivation effects perceptual set. [9 marks]

Suggested answer: Gilchrist and Nesberg used two groups of students: one group deprived of food for 20 hours (hungry) and a control group (not hungry). Students were shown four slides, each one showing a meal. The slide was displayed for 15 seconds. The picture was shown again, and participants had to adjust the lighting so it looked the same as it did previously. Participants perceived the food as brighter if they were deprived of food. The control group who were not deprived of food didn't perceive the food brighter. Being deprived of food increased perceptual sensitivity. This shows hunger is a motivating factor that affects the way food-related pictures are perceived.

One strength is similar studies have found similar results. Sandford deprived participants of food for varying lengths of time and then showed them ambiguous pictures. The longer the participants had been deprived of food, the more likely they were to perceive the pictures as representing food – for instance, a brown blob was more likely to have been perceived as a hamburger. This increases the validity of Gilchrist and Nesberg's results.

A problem with studies in this area is that they are unethical. This is because depriving participants of food and water could cause them to feel uncomfortable. This is an issue as you should not do this in psychological research.

Another problem with the study is that it was not like everyday life. Participants were asked to judge pictures of food rather than real food. This makes it harder to apply the results to situations in the real world.

Word count = 258

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Topic 9: Factors affecting perception: Expectation

Apply it

Read the item below and then answer the question that follows.

A psychology teacher carries out a study with two classes of GCSE students. With one class he tells them a story about a young lady who goes to a fancy ball with her husband whilst the other class are told a story about an old witch-like lady who scares young children. Both classes are then told to look at the picture and describe what they see.

Use your knowledge of the role of expectation on perception to speculate what the researcher would find. Explain your answer. [3 marks]

Suggested answer: The previous experiences of the students will influence what they see in the picture. If they are told a story about the young lady going to the ball then they are more likely to see a young lady in the picture, whilst if they see the old lady in the picture, it is probably because they have heard the story about the witch-like lady. Therefore, their expectations influence their perception.

Knowledge check

1. Outline the effect of expectation on perceptual set. [3 marks]

Suggested answer: Expectation is a belief about what is likely to happen based on past experience. Expectation affects perceptual set because you are more likely to notice or attend to certain stimuli because you are anticipating them.

2. Outline what the participants were asked to do in the study by Bruner and Minturn into expectation and perceptual set. [2 marks]

Suggested answer: An ambiguous figure was shown to participants. The study used an independent groups design. One group was shown a sequence of numbers and the other group a sequence of letters. In the middle of each sequence was an ambiguous figure that looked like a B or 13. In each case, the stimulus in the middle was the same and participants had to report what they saw.

3. Describe and evaluate Bruner and Minturn's study into the effect of expectation on perceptual set. In your answer include details of the method used, the results obtained and the conclusion drawn. [9 marks]

Suggested answer: The method used an independent groups design where participants were either presented with a sequence of letters or a sequence of numbers with the same ambiguous figure in the middle. The ambiguous figure could be seen as either the letter B or as the number 13. The results were that those participants who saw a sequence of letters were more likely to report the figure as being the letter B. If shown numbers, they were more likely to say it was the number 13. The conclusion is that the expectation of what the figure represented was affected by the context in which the figure was presented, demonstrating the effect of expectation on perceptual set.

One weakness of the study is that an ambiguous figure was used to test expectation, which is not something we often come across in everyday life as ambiguous figures are designed to 'trick' participants into making errors. Therefore, studies of expectation and perceptual set may have little to tell us about everyday perception which means the results may lack validity.

Another weakness is there may be individual differences between the groups because an independent groups design was used. This is an issue as differences in perception between the groups may have been due to participant variables rather than their expectations.

One strength of this study is that it can explain errors that people make, for example, when soldiers misidentify an aircraft as an enemy plane because that is what they expect to see. This therefore shows the importance of context and expectation in perception and helps us understand (and avoid) errors of judgement.

Word count = 266

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Chapter 3 Development

Topic 1: Early brain development

Apply it

Read the item below and then answer the question that follows.

Issy is a 23-year-old woman who has severe depression. Issy has always wondered why she has the disease but her mum, dad and older brother have never had depression. Her grandmother, who also experienced the same mental illness, thinks it has something to do with Issy's mother having a virus during her pregnancy. In addition to this, Issy's parents split up when she was two and this may also have had an effect.

Use your knowledge of psychology to explain the role that nature and nurture might play in Issy's behaviour.
[4 marks]

Suggested answer: Nature could have influenced Issy to develop depression as she might have inherited the disease from her grandmother who also experienced the same illness. This would suggest that the illness runs in the family. Nurture relates to the role of the environment on Issy's behaviour. For example, she could have been affected by the virus her mother contracted when her mother was pregnant, or because of trauma she experienced when her parents split up when she was younger.

Knowledge check

1. Distinguish between nature and nurture. [3 marks]

Suggested answer: Nature refers to genetic influences, characteristics you inherit from your ancestors so is biological. Nurture refers to all other influences – how you were raised, your experiences and your environment in general. It can also be biological, for example a disease.

2. Outline the role of the thalamus and cerebellum. [4 marks].

Suggested answer: The thalamus acts as a hub of information receiving signals from other areas of the brain and sending these signals on. It also has some input into other functions such as language and emotions.

The cerebellum's main role is in the coordination of movement and sensory information (sensorimotor).

3. Briefly explain the development of the brain. [5 marks]

Suggested answer: The brain stem is highly developed at birth because it controls important functions such as heartbeat, breathing, sleeping and eating.

The cortex functions in the womb. The developing baby learns how to coordinate its sensory and motor functions. At birth the cortex is basic and develops through life.

The cerebellum is one of the last parts of the brain to develop.

Topic 2: Piaget's theory

Apply it Research Methods

A psychologist uses opportunity sampling to select 23 children from St Mary's Primary School. She asks them to write down the first three words that they think of when asked to visualise a bank robbery. The psychologist thinks most children have similar schemas. She finds that 19/23 write down the word 'gun', 13/23 write down the word 'mask' and 6/23 write down 'scared'.

1. Convert the data into percentages for the number of children who wrote down the words gun, mask and scared. Give your answer to **one** decimal place. [6 marks]

Suggested answer: One way to calculate this is:

19 divided by 23 × 100 = 82.6% visualised a gun.

13 divided by 23 × 100 = 56.5% visualised a mask

6 divided by 23 × 100 = 26.1% visualised a scared person.

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2. Explain **one** strength and **one** weakness of using an opportunity sample. [4 marks]

Suggested answer: One strength is that opportunity sampling is relatively easy to do because you simply go to people who are nearby. This makes it quicker and therefore cheaper than other methods.

One weakness is that the sample is likely to be unrepresentative of the whole population. This means that the results from the study can only be generalised to the particular group from which the sample was drawn.

3. Explain how the psychologist could have used a random sample to gather the participants for her study. [3 marks]

Suggested answer: The psychologist could have written all the names of the children at the primary school on pieces of paper. She could then put all the names into a hat. She could then pick out 23 names and these children will be the ones that will take part in the study.

Knowledge check

1. What is meant by the term 'accommodation' in Piaget's theory? [1 mark]

Suggested answer: Accommodation refers to what happens when we acquire new information that doesn't fit our current understanding, so we have to form a new schema.

2. Explain the role of assimilation in the development of intelligence. [3 marks]

Suggested answer: Assimilation occurs when a new experience can be added to an existing schema to develop the schema. For example, a car schema is changed when a two-seated sports car is seen for the first time. This means we adapt our existing schema about cars to include two-seated cars that are low to the ground.

3. Describe and evaluate Piaget's theory of cognitive development. [9 marks]

Suggested answer: Cognitive development is about the change in the way we think across time. Piaget believed that children think differently from adults. Piaget suggested that young children are not able to think logically about the world. Their brains are simply not mature enough to think in a logical way. As children get older, their brains develop and different kinds of thinking become possible such as being able to use numbers and to think in a more abstract way. These are described as different stages. As children develop, they create mental representations of the world which are stored in the form of schemas. A schema is a mental structure containing knowledge. They become more complex through assimilation and accommodation.

A strength of Piaget's theory is that it has led to many studies being carried out. These have helped test the claims of his theory. This is an important part of any theory as if we can't test it we don't know if it is right or wrong.

Another strength of Piaget's theory is that it has helped change classroom teaching for the better. It has led to teachers doing more activity-based learning. This has helped children learn in a more effective way.

A weakness of Piaget's theory is that research was carried out on middle-class Swiss children. Piaget developed his theory from research studies he conducted where he lived – in Switzerland. The children were from European academic families who valued academic abilities. In other cultures and social classes, greater value may be placed on, for example, a more basic level of concrete operations. Therefore, his theory may not be universal.

Word count = 269

Topic 3: Piaget's theory: Conservation

Apply it

Read the item below and then answer the questions that follow.

Mark and Nick are both very excited as their Dad has some lemonade for them as a special treat. Dad pours an equal amount of lemonade into two different shaped glasses – one glass is tall and thin and the other short and wide. Nick, aged four, gets upset when he is given the shorter glass. Mark, who is seven, tells his brother not to be so silly as they have the same amount of lemonade in their glasses.

1. Use your knowledge of the development of conservation to explain why Nick is upset but Mark isn't. [2 marks]

Suggested answer: Nick is too young to understand that the quantity of lemonade he has been given remains the same even though the appearance of his glass is different from his brother's. He assumes the shorter glass contains less liquid when this is not actually the case. Mark is old enough to understand the concept of conservation.

2. Explain why Nick's reaction is not typical of all children of his age. Refer to McGarrigle and Donaldson's 'naughty teddy study' in your answer. [2 marks]

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Suggested answer: Some children as young as four (Nick's age) can conserve in certain situations. In the 'naughty teddy study' some children this age could work out that the number of counters remained the same after naughty teddy had accidentally messed them up.

Knowledge check

1. Explain what is meant by the term 'conservation' in Piaget's stage theory. [2 marks]

Suggested answer: The ability to realise that quantity remains the same even when the appearance of an object or group of objects changes. For example, the volume of liquid stays the same when poured between vessels of different shapes.

2. Outline the results of McGarrigle and Donaldson's 'naughty teddy study'. [2 marks]

Suggested answer: 41% of the children conserved if the change was intentional (i.e. as Piaget did it) in his study. 68% could conserve if the change was accidental. Older children gave more correct answers than younger children.

3. Describe and evaluate McGarrigle and Donaldson's 'naughty teddy study'. [9 marks]

Suggested answer: McGarrigle and Donaldson wanted to see if younger children could conserve if there wasn't a deliberate change in a row of counters. Children aged 4–6 years old were shown two rows of counters each with four counters in them. A naughty teddy pushed the counters into one row. Before and after the transformation each child was asked if there were more counters in one row or if each row had the same number of counters. 41% of the children gave the correct answer that there were the same number of counters in each row and this figure rose to 68% if the change was accidental. More primary school children gave the correct answer than nursery children. This study shows that the traditional method of testing conservation underestimated what children could do. Piaget said that children of this age couldn't conserve but more of them could when the question made better sense. However, there were still age-related changes.

A weakness is that the sample only came from one UK city and there was a narrow age range. Their performance on Piaget's tasks may not reflect how all children would respond in these situations. Age changes were not clear with a small age range.

A weakness is that children may not have noticed the change in the accidental condition. If the teddy actually took a counter away, children still said the rows were the same. This means it wasn't that the children weren't conserving, they were just distracted.

A strength of the study is it challenges Piaget's view. McGarrigle and Donaldson's study implies that the way Piaget designed his research appears to have confused young children. Therefore, this study helped refine this type of child development research.

Word count = 285

Topic 4: Piaget's theory: Egocentrism

Apply it Research Methods

A psychologist decided to repeat Hughes' (1975) policeman doll study. She obtained a sample of 200 children aged between 3½ and 5 years. She found that 150 of the children were able to hide the boy doll from two policemen.

1. Calculate the fraction of children who could and could **not** hide the boy doll from two policemen. Show your workings. [2 marks]

Suggested answer: 150 out of 200 children could hide the doll. As a fraction this is 150/200.

The highest common factor is 50 which reduces the fraction to $\frac{3}{4}$

This means that $\frac{1}{4}$ couldn't hide the doll.

2. The psychologist gathered quantitative data. Outline **one** weakness of using quantitative data in this study. [3 marks]

Suggested answer: One weakness of quantitative data is that it lacks the depth and detail of qualitative data. We learn little in this study about why the participants have or do not have egocentric thinking, only that they are or are not egocentric. Qualitative data can provide such information.

3. The psychologist wanted to ensure that the study was high in validity. Outline what is meant by 'validity' and what she could do to ensure high validity. [4 marks]

Suggested answer: Validity concerns whether a result represents something that is real.

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To ensure high validity, it is important to control extraneous variables. So in this study the psychologist should have made sure that all of the children were given exactly the same task and instructions, otherwise some children might have been more confused by the task than others and this would explain why they didn't do the task properly.

Knowledge check

1. What is meant by the term 'egocentrism' in relation to Piaget's stage theory? [2 marks]

Suggested answer: The child's tendency to only be able to see the world from their own point of view. This applies to both physical objects – demonstrated in the three mountains task – and arguments in which a child can only appreciate their own perspective.

2. Outline what the participants were asked to do in Hughes' policeman doll study. [4 marks]

Suggested answer: Hughes tested 30 children aged 3½ to 5. He put a boy doll in each section and asked a child if the policeman could see the boy doll. The policeman was then moved and the child asked to hide the boy doll from the policeman. If the child made any mistakes, their error was pointed out. Children were then tested with two policeman dolls, one placed behind one wall and the second behind another wall. The child was again asked to hide the boy doll from the policemen.

3. Describe and evaluate **one** study that investigated egocentrism. [9 marks]

Suggested answer: Hughes investigated whether egocentrism occurred in children under 7. Children aged 3½ to 5 years old were shown a model with two intersecting walls. The child's egocentrism was then tested by asking the child to hide a boy doll from two policemen. 90% of the children could hide the boy doll from two policemen. When a complex model was used with five or six walls, 60% of 3-year-olds and 90% of 4-year-olds hid the boy doll correctly. The study shows that children aged 4 years are mostly egocentric. Piaget underestimated younger children's abilities because his three mountains task didn't make sense to the children, although he was right that thinking changes with age.

One strength of the study is that the task made better sense to children. Hiding from a policeman is easier to think about than selecting a view of a mountain top (as Piaget did in his study). Therefore, Hughes' study is a more realistic test of children's abilities.

One weakness is that the researcher may have unconsciously hinted about the correct answer. It could be the person doing the study with the children gave very subtle clues about where the boy doll could be hidden. This means that the results may lack validity.

A further strength of this study is it challenges Piaget's view. The results imply that Piaget's original study confused young children because the task didn't make sense to them. Therefore, this study helped refine this type of child development research.

Word count = 246

Topic 5: Piaget's theory: Stages of cognitive development

Apply it

Read the item below and then answer the question that follows.

Adam is teaching in a summer school and has children from the ages of 9 to 14 in his class. They all have to write a story about what they would do if they won the lottery. He finds that the children aged 12 to 14 tend to think of far more ideas than those aged 9 to 11.

Use your knowledge of Piaget's stage theory to explain why the older children found this task less challenging. Refer to the formal operational stage in your answer. [4 marks]

Suggested answer: The 12 to 14 year olds are in the formal operational stage and so can think in an abstract way, such as what they would do if they won the lottery. The younger children are in the concrete operational stage and so, although they can solve problems relating to physical things, they struggle to think about situations they cannot see or have not experienced. As winning the lottery is not something they have experienced, they struggle to think what they would do.

Knowledge check

1. Outline Piaget's sensorimotor stage of cognitive development. [3 marks]

Suggested answer: The focus of development in the sensorimotor stage is relating physical sensations with some basic physical coordination. The baby is relating what they see (sensory) with what they can do (motor). Piaget

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observed that babies stopped looking for an object if it was removed from their sight. He suggested this is because they did not yet understand that an object continues to exist even if it is hidden from view. From around eight months they would continue look for it, i.e. they now have object permanence.

2. Explain the difference in children's thinking in the pre-operational and the concrete operational stage of development. [4 marks]

Suggested answer: In the pre-operational stage children might think in apparently logical ways but not in a way that has internal consistency. Children therefore have not developed 'operational' thinking, which develops by the concrete operational stage. At this stage they can perform logical operations.

Another difference is that children in the pre-operational stage also display some characteristic errors in reasoning. They do not fully understand that quantity remains constant even though it may look like more, i.e. they lack the ability to conserve. They also tend to view the world from their own perspective (egocentric). In the concrete operational stage most children can conserve and perform much better on tasks of egocentrism. This shows that children now have better reasoning abilities.

3. Describe and evaluate Piaget's stage theory. [9 marks]

Suggested answer: Piaget suggested there are four stages of cognitive development and these happen in the same order in all children all over the world. The first stage is the sensorimotor stage where the focus of development is on relating what is seen/heard (sensory) with movement (motor) and where children develop object permanence at around 8 months. By 2 years, in the pre-operational stage, language is not fully developed and children under age 7 are egocentric and lack conservation. Around 7 years, most children move into the concrete operational stage when they can conserve and show less egocentrism. In the formal operational stage children can come to conclusions about problems presented in an abstract form.

A weakness with Piaget's theory is that he underestimated children's abilities. Other researchers (such as Hughes) have tested children using tasks that made better sense. The result was that younger children performed better than Piaget had predicted. This suggests that certain types of thinking develop earlier than he proposed.

Another weakness is that Piaget also overestimated what children could do. He argued that 11-year-old children should be capable of abstract reasoning when other researchers have found this is not true. This shows that not all children's thinking is as advanced as he suggested.

A strength of Piaget's theory is that it does show that children's thinking changes with age. Although research shows that changes in thinking occur earlier, the fact remains that the changes still occur. Therefore, the basic principle of the theory is valid.

Word count = 248

Topic 6: Piaget's theory: Application in education

Apply it Research Methods

Jack is interested in how experienced teachers apply Piaget's theory in the classroom. He decides to interview 20 teachers who had each taught for more than 10 years and ask them how they apply Piaget's stages in their teaching.

1. Explain **one** strength and **one** weakness of using an interview to collect his data. [4 marks]

Suggested answer: One strength of interviews is that they tend to produce extensive information. An experienced interviewer can ask follow-up questions that provide extra insights into a person's thoughts and feelings. Such data is useful if Jack wants a detailed insight into the way the interviewee sees the world.

One weakness is that interview data can be difficult to analyse. Jack may end up with lots of information which makes drawing general conclusions difficult. The conclusions that are drawn may be more based on Jack's preconceived ideas than what the interviewee originally meant.

2. Write **one** question Jack could ask the teachers that would gather quantitative data and **one** question that would produce qualitative data. [4 marks]

Suggested answer:

Quantitative: On a scale of 0–10, rate how valuable Piaget's ideas have been in your teaching where 0 = not valuable at all and 10 = extremely valuable.

Qualitative: Explain how you use Piaget's theory in your classroom.

3. Explain whether Jack's research produces primary or secondary data in his study. [2 marks]

Suggested answer: Jack is producing primary data because he is gathering the information from the teachers first hand specifically for the aims of his research.

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Knowledge check

1. Outline **two** ways in which a teacher could apply Piaget's theory in education. [4 marks]

Suggested answer: (1) Teachers should make a special effort to arrange classroom activities for individual children or small groups rather than for the whole class group. This is because Piaget's theory claims that children go through developmental stages at different rates.

(2) A child must discover concepts for themselves rather than rote-learning material that is given to them. It is important that children play an active role in their education.

2. Explain **one** criticism of Piaget's application in education. [4 marks]

Suggested answer: Piaget's emphasis on discovery learning may not always be the best approach. A study by Bennett compared traditional formal methods of teaching with Piaget's more child-centred active approach. More formal methods involve a teacher explaining a task to a whole class and children do lots of exercises to give them repeated practice. Bennett found that children taught using the more formal methods did better in subjects such as reading, maths and English than children taught using a more child-centred active approach. This suggests that at least some aspects of learning are best taught through direct instruction rather than active learning.

3. Describe and evaluate how Piaget's theory has been applied to education. [9 marks]

Suggested answer: Piaget's understanding of how thinking develops can be used to guide what children are taught and when. For example, in the pre-operational stage children should be given games that involve role play to reduce egocentricity. Piaget's ideas about how children go through developmental stages in the same order but at different rates means classroom activities should be for individuals and small groups rather than for the whole class. Children should also discover concepts for themselves rather than rote-learning material. Teachers should create an environment which will stimulate children to ask questions and plan activities so that a learner is challenged to accommodate current schemas to cope with new information. This will mean assimilation and accommodation will take place and the child's thinking will develop.

One strength of Piaget's theory has been the enormous effect it has had on primary education in the UK. It led to schools taking on a more child-centred, activity-based approach. Such child-centred education ran counter to the more teacher-centred, rote learning educational practices of the time. This demonstrates the value of Piaget's theory for education.

One weakness of Piaget's theory is that it suggests that practice should not improve performance. In fact, children's thinking can develop at an earlier age than expected if they are given enough practice on a task (Bryant and Trabasso). This suggests that children don't have to be 'ready'.

Another weakness is that discovery learning may not always be best. Bennett showed that formal teaching methods work best for maths, reading and English. This suggests that some parts of education are best delivered through direct instruction.

Word count = 264

Topic 7: Dweck's mindset theory of learning

Apply it

Read the item below and then answer the question that follows.

Cristiano Ronaldo and David Bentley are both professional footballers. When they started their careers, both were deemed to have a lot of talent but it is only Ronaldo who has fulfilled his potential. Ronaldo worked tirelessly on his weaker areas, continuously set new goals for himself and was never afraid to try out new things on the pitch even if they did not come off. Bentley, on the other hand, thought he would never get any better than what he was at 21 and so didn't train as hard, fell out of love with the game and ended up taking early retirement.

Use your knowledge of Dweck's mindset theory to explain the differences between the two footballers' careers. [4 marks]

Suggested answer: Cristiano Ronaldo looks like he had a growth mindset as he believed he could improve his footballing ability by working on his weaker areas. He believed he could improve himself with effort and was not afraid to make mistakes by 'trying things even if they did not come off'. As a result, he fulfilled his potential.

David Bentley may have a fixed mindset, believing that his ability was determined by things like his genes. He did not train as hard maybe because he believed that his skills were just due to genetics and therefore practice would not improve his game.

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Knowledge check

1. What is meant by the term 'fixed mindset'. [2 marks]

Suggested answer: A belief that achievements are due to innate abilities. If you cannot do something there is no point trying harder because you simply have not got the ability. People with a fixed mindset give up if they fail.

2. Outline the difference in the way a person with a growth mindset approaches learning compared to a person with a fixed mindset. [3 marks]

Suggested answer: People with a growth mindset believe that working hard can make them more successful whereas people with a fixed mindset believe that there is no point working hard because you can't change the talents you were born with. Therefore, a person with a fixed mindset thinks, if you aren't doing well, you might as well give up because no amount of effort will change the situation, whereas a person with a growth mindset always keeps trying.

3. Describe and evaluate Dweck's mindset theory of learning. [9 marks]

Suggested answer 'Mindset' refers to a set of assumptions a person has. Those with a fixed mindset hold the belief that achievements are due to innate abilities. If you cannot do something there is no point trying harder because you simply have not got the ability. People with a growth mindset hold the belief that even the most basic abilities can be developed through effort, and regard failure as a challenge. People with a growth mindset will approach learning with the belief that at any time you can always get a little bit better. People are not simply one or the other but rather a mixture of the two mindsets as they fall somewhere on a continuum from fixed- to growth-oriented.

One strength of Dweck's theory is research evidence shows that a growth mindset does lead to better grades. In a study, students did a special session on how intelligence can grow like a muscle if it is exercised (growth mindset) or a different session on memory. The students in the growth mindset group had improved motivation and grades whereas the other group did not improve. This shows that a growth mindset can be taught and can improve performance.

A weakness is that just any sort of praise may be negative. The idea of praising effort still leads people to do things for approval rather than doing it for themselves. Growth mindset can therefore discourage the type of independent behaviour it is trying to promote.

Another strength is that the theory has good real-world application. Mindset is used to improve performance in schools, businesses, sports and relationships. Teaching people to see failure as a lack of effort rather than lack of talent motivates future effort.

Word count = 283

Topic 8: The role of praise and self-efficacy

Apply it Research Methods

A psychologist is interested in the effect of praise and levels of self-efficacy on success at school. He conducts a case study with a sample of 10 students and studies them across a year collecting mainly qualitative data.

1. Explain why the case study method is likely to be the most suitable research method to use in this study. [3 marks]

Suggested answer: Using the case study method is the most suitable because each student can be studied in depth and many different kinds of measurement can be used to assess how they respond to praise. The psychologist can speak to the student's teachers, friends and relatives at different points across the year to gain in-depth information about the student, which couldn't be gained in just a one-off interview or questionnaire.

2. The psychologist gathers mostly qualitative data. Explain why qualitative data may be less reliable than quantitative data. [3 marks]

Suggested answer: It is likely that a person would provide the same answers to quantitative questions if the question was asked again. For example, if asked to rate how they feel about praise, they probably would give the same rating each time they were asked. This means such data is likely to be consistent (reliable). Whereas qualitative questions might produce different answers each time because they require subjectivity and thus are less reliable.

Knowledge check

1. What is meant by the term 'self-efficacy'? [2 marks]

Suggested answer: Self-efficacy is a person's understanding of their own capabilities. Strong self-efficacy enhances motivation to succeed.

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2. Outline the role of praise in learning. [3 marks]

Suggested answer: Praise is a reward which increases your self-esteem and increases your motivation to continue. If someone sees a person praised for doing a task better than they can, it can be demotivating because they cannot compete. However, if they are praised for effort it should be motivating because effort can be increased. Teachers or parents should not praise everything but praise should be made in proportion to the quality of performance.

3. Describe and evaluate the role of self-efficacy beliefs in learning. [9 marks]

Suggested answer: Everyone has an idea of how competent they are – they know how good they are at various activities such as singing or maths or being friendly. Self-efficacy is about your sense of your own competence. It is related to expectations – past experience leads a person to have expectations about future performance. Repeated success raises self-efficacy, whereas failures lower it. Self-efficacy also affects motivation. When facing difficulties, people who have a high sense of self-efficacy for learning are willing to make a greater effort and persist longer than those who doubt their capabilities. In other words, high self-efficacy leads to greater task persistence and also more resilience if you fail because you believe you really can do it.

There is support from research that shows reduced self-efficacy leads to poor performance. Steele and Aronson found that African-American college students did worse on an IQ test if they were asked to indicate their race before taking a test. Being reminded of their race lowered their sense of self-efficacy because it is generally believed that African-Americans do not perform well on IQ tests. This suggests that their performance was affected by their expectations.

One weakness with using praise to encourage learning is that it can have the opposite effect. Research by Lepper *et al.* found that children were less interested in doing a task if they had previously been rewarded for it. This suggests that praise can be demotivating.

On the other hand, the research in this area highlights the importance of understanding rewards. Dweck found that students who were criticised for their effort performed better on a test than those who had been previously praised. This shows that the type of praise given is important as just praise on its own does not always improve performance.

Word count = 294

Topic 9: Learning styles

Apply it

Read the item below and then answer the question that follows.

Annie and Levi have ordered a new bed online and are disappointed to find out that they have to assemble it when it arrives. Levi is dismayed at the quality of the instructions they have been given, which consist of a series of diagrams rather than a list of written instructions. Annie finds the diagrams easy to follow but Levi eventually gives up and lets her complete the job herself.

Identify which learning style Annie and Levi seem to have. Give reasons for your answers in both cases. [4 marks]

Suggested answer: Annie is a visualiser as she prefers to process information by looking at it. This means that she is happy to use diagrams to assemble her bed as they appeal to her learning style.

Levi is a verbaliser and so prefers to process information he can read or listen to. This explains why he would prefer the instructions to be written as they appeal to the way in which he learns.

Knowledge check

1. Explain what is meant by the term 'learning style'. [2 marks]

Suggested answer: This refers to a person's relatively consistent method of processing and remembering information. Quite a number of learning styles have been identified, such as verbalisers (process information through words and sounds) and visualisers (prefer to process information in terms of pictures or diagrams).

2. Explain how visualisers would prefer to learn information. [3 marks]

Suggested answer: A visualiser finds it easier to understand information in a visual form. They find it easy to understand graphs and charts. They are good at understanding the spatial relationships between objects. Visualisers tend to use memory tricks such as the memory palace and make pictures in their minds to help encode memories. When they read a story, they picture the different characters and what they are doing.

3. Describe and evaluate learning styles. Refer to verbalisers and visualisers in your answer. [9 marks]

Suggested answer: People differ in how they learn. Matching teaching to a student's preferred learning style should improve learning. Someone who prefers to process information verbally, by hearing it or reading, has a verbaliser

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learning style. They remember best by repeating information over and over again, and also learn by focusing on sounds, analysing a situation by talking about it or writing it down in words. Someone who prefers to process information visually is called a visualiser. They find it easy to understand graphs and charts and are good at understanding the spatial relationships between objects, they also find it more difficult to process written information.

One strength of this approach is that traditional teaching (and learning) methods may have focused too much on verbal methods alone. There seems to be general agreement that the best strategy for learning is to adopt a mixed approach. The learning styles approach aims to draw attention to the different ways that people learn and encourages learners and teachers to try a more varied approach. In this respect, a focus on different learning styles has been beneficial.

A weakness is that there is little evidence to suggest that learning styles work. Pashler *et al.* reviewed many good quality research studies and found no support. This therefore challenges the claim that learning styles improve performance.

Another weakness is that there are too many learning styles. Coffield *et al.* identified 71 different types. This is a problem as it will make it difficult for people to work out their preferred learning style.

Word count = 254

Topic 10: Willingham's learning theory

Apply it Research Methods

A psychologist wants to investigate if people show more motivation if praise is given before or after completing a word search. Twenty participants are asked to do a word search. Ten of the participants will be praised before they start the word search and the other ten will be given praise afterwards. Motivation will be measured by the time taken to complete the word search.

1. Identify the independent and dependent variables. [2 marks]

Suggested answer: The independent variable would be whether praise is given before or after a word search is completed. The dependent variable would be the time taken to do a word search.

2. Explain how the mean would be calculated for each group and how the two means might be used so that a conclusion could be drawn. [4 marks]

Suggested answer: The mean motivation would be calculated by adding up the 10 scores for those who were given the praise after doing the maze and dividing this total by 10. The same process would happen for those who were given the praise before the maze. The results will then be compared and the conclusion would be that the group with the lower mean score will have more motivation for completing the word search.

3. Identify and explain **one** extraneous variable that could have affected the psychologist's results. Explain how this variable could have been controlled. [4 marks]

Suggested answer: One extraneous variable that could affect the results is how much a person enjoys doing word searches. This could affect the psychologist's results as she may have people who enjoy doing word searches more in the praise group and this could explain why participants in that group did better.

This can be controlled by asking participants before how much they enjoy doing word searches and ensure that there is an equal amount of people who enjoy and don't enjoy doing word searches in each group.

Knowledge check

1. Identify **two** features of Willingham's learning theory. [2 marks]

Suggested answer: Willingham criticises the theory of learning styles because of a lack of scientific evidence. He also suggests that praising effort should be unexpected.

2. Explain **one** criticism of Willingham's learning theory. [3 marks]

Suggested answer: One weakness is that diagnosis on the basis of brain difference may not be possible. It is unlikely that there will ever be a clear correspondence between certain kinds of activity in the brain and behaviours such as dyslexia because learning disorders are likely to have a number of causes rather than one identifiable source. This means that diagnosis of a condition such as dyslexia based solely on brain differences is unlikely.

3. Describe and evaluate Willingham's learning theory. Refer to Willingham's criticism of learning styles in your answer. [9 marks]

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Suggested answer: Willingham criticises the theory of learning styles because of a lack of scientific evidence. He believes that we can improve learning by applying the results of scientific research in cognitive psychology and neuroscience. For example, research indicates that the brain waves of people with dyslexia are different from those without dyslexia. If a specific pattern is associated with dyslexia, they could receive help earlier, which will benefit their progress. Another example is that research shows that praising effort should be unexpected. Lepper *et al.* found that, if performance depends on praise, a person works to get the praise rather than to feel good. This can then be confidently applied to better educational practice. Schools therefore should avoid using techniques or ideas that do not have a strong research basis.

A strength is the theory uses scientific evidence. The studies on which it was based were well-designed, objective investigations that were methodologically sound. Willingham's approach is specifically focused on information drawn from methodologically sound research. This therefore gives the claims of his theory greater validity.

Another strength of the theory is real-world applicability. Willingham has selected research that has clear relevance to education and has a better foundation than learning styles. His approach offers an explanation of what you learn (rather than how you learn) and so has proved more beneficial in the real world.

A weakness with Willingham's research is that dyslexia cannot just be diagnosed by observing people's brain waves. There would be a number of other causes that would need to be investigated. This makes it unlikely that brain waves would be used for diagnosis in this way.

Word count = 270

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Chapter 4 Research methods

Topic 1: Starting out: Hypotheses and variables

Apply it Research Methods

Researchers wanted to see how room temperature affects student performance. To test this, one group of students took a psychology test in a room where the temperature was 30 degrees whilst a different group of students sat the same test in a room with a normal room temperature (20 degrees).

1. Identify the independent and dependent variables in this study. Each variable must be operationalised. [2 marks + 2 marks]

Suggested answer: Independent variable is room temperature, whether it was 20 or 30 degrees.

Dependent variable is performance on psychology test.

2. Identify an extraneous variable in this study and explain how it could have been controlled by the researchers. [3 marks]

Suggested answer: If one group of students took the test at a different time of day this might have affected the results because doing it in the morning might mean they were more alert. This could have been controlled by having both sets of students sit the test at exactly the same time.

3. Write a suitable alternative hypothesis for this study. [2 marks]

Suggested answer: Students perform better on a psychology test when they sit it in a room with a temperature of 20 degrees as opposed to 30 degrees (a possible directional hypothesis).

Students perform differently on a psychology test when they sit it in a room with a temperature of 20 degrees or 30 degrees (a possible non-directional hypothesis).

Knowledge check

1. What is a null hypothesis? [1 mark]

Suggested answer: A statement of no relationship or difference between variables.

2. Explain why extraneous variables are controlled in experiments. [2 marks]

Suggested answer: Determining cause and effect is threatened by extraneous variables (EVs). These are any unwanted 'extra' variables that may interfere with the relationship between the IV and the DV.

3. Outline how randomisation can be achieved. [2 marks]

Suggested answer: This is done using a chance method such as tossing a coin or picking names from a hat to control for the effects of bias.

Topic 2: Types of experiment

Apply it Research Methods

Identify which type of experiment is used in each of these studies. Explain your answer in each case.

1. A study investigating whether students in a library like a librarian more depending on whether she touches their hands or not when she returns their books. [2 marks]

Suggested answer: Field experiment – it takes place in a natural setting but the researcher still manipulates the IV (whether the librarian touches the hand of the students or not).

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- Participants were asked to give attractiveness ratings to a picture of a woman when her pupils were either dilated or not. [2 marks]

Suggested answer: Laboratory or field experiment – the IV (pupil dilation) was manipulated by the researcher but the environment could be in a lab or in the field.

- Some researchers investigated the impact of a televised boxing match on murder rates in America. They found that murder rates were higher in the week after the match in comparison to the week before. [2 marks]

Suggested answer: Natural experiment – the change in IV (the boxing match taking place) was not manipulated by the researcher. It would have occurred anyway.

Knowledge check

- Distinguish between a natural and field experiment. [3 marks]

Suggested answer: A natural experiment is where the independent variable (IV) is not manipulated by the experimenter but would have changed whether the experimenter was interested or not, whereas in a field experiment the IV is deliberately changed by the researcher for this study.

- Using an example, explain what is meant by a 'natural experiment'. [3 marks]

Suggested answer: A natural experiment is where there is an IV and DV but the IV has not been manipulated by the experimenter. An example would be a study comparing old and young people on some ability. The IV is old versus young which is a variable not manipulated by the researcher.

- Explain **one** strength and **one** weakness of a laboratory experiment. [4 marks]

Suggested answer: One strength of a laboratory experiment is that extraneous variables (EVs) can be more easily controlled than in a field experiment. This means the researcher can be more certain that any changes in the DV are due to the IV and not some other variable.

One weakness is participants generally know they are being tested. This may cause them to change their behaviour to try to help the experimenter get the results they want so the data collected will lack validity.

Topic 3: Experimental designs

Apply it Research Methods

To test the effect of caffeine on the alertness of drivers, a group of 20 participants were recruited who had all been driving for at least ten years. They took a computer-based driving awareness test where they were assessed on how many hazards they identified in a five-minute period. All participants were then given one cup of caffeinated coffee and had to re-sit the test again to see if there was any difference in their performance.

- Identify the type of experimental design used in this study. Explain your answer. [2 marks]

Suggested answer: This is a repeated measures design as the participants each took part in both conditions (before and after drinking coffee).

- Explain **one** weakness of the experimental design that you have identified in question 1. [2 marks]

Suggested answer: Order effects could have been an issue as the participants' performance in the second condition may have been affected by having done the test before so they would have had more practice.

- Explain how the researcher could have reduced the impact of the problem you identified in question 2. [2 marks]

Suggested answer: They could use an independent groups design so that they compare the results for participants who drink coffee with those who drink a non-caffeine version.

- Explain how this study could have been carried out using a matched pairs design. [3 marks]

Suggested answer: The participants could have had their driving ability tested beforehand. They then could have been paired up with somebody of similar ability to themselves. Each member of the pair could have then gone in one of two groups (caffeine and non-caffeine drinkers).

Knowledge check

- Explain why counterbalancing is needed in a repeated measures design. [2 marks]

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Suggested answer: In a repeated measures design all participants take part in both conditions and therefore order effects may happen, e.g. a practice effect when they do the same task a second time. Counterbalancing controls order effects because some participants do the two conditions in the reverse order balancing out order effects.

2. What is a matched pairs design? [2 marks]

Suggested answer: Pairs of participants are matched in terms of variables relevant to the study, such as age or IQ. One member of each pair participates in condition A of the experiment and the other takes part in condition B.

3. Evaluate independent measures design. [4 marks]

Suggested answer: One strength is that order effects are not a problem. Each participant only does the task once and therefore there is no practice effect. Order acts as an extraneous variable (EV) which is good to avoid.

One weakness is that the participants in each group may differ. The difference in performance may be more to do with these participant variables than the change in the independent variable (IV), which reduces the validity of the results.

Topic 4: Sampling methods

Apply it Research Methods

A psychologist believed that eating chocolate made people happier. He recruited the 20 students in his psychology class on a Monday morning. After finding some initial support for his hypothesis, the researcher decided to carry out the study on a larger scale by taking a systematic sample of 100 people from the 10,000 students attending the university.

1. Identify the sampling method that the researcher first used at the start of this study. Explain your answer. [2 marks]

Suggested answer: Opportunity sampling, as the researcher recruited the most readily available group of people (the students from his class).

2. Describe how the researcher could have selected his systematic sample. [2 marks]

Suggested answer: He would get an ordered list of all 10,000 students at the university and select every 100th student on the list.

3. Explain why systematic sampling would be more suitable for this investigation. [2 marks]

Suggested answer: The sample produced would be more representative of the target population as it would have been more reflective of all the students who attended university rather than just the people in one class.

Knowledge check

1. What is meant by the term 'target population'? [1 mark]

Suggested answer: The group that the researcher is interested in studying, from which a smaller sample is selected.

2. What is the difference between a random and opportunity sample? [3 marks]

Suggested answer: An opportunity sample is where participants are produced by selecting people who are willing and available at the time. All members of the target population don't have an equal chance of selection. In contrast, in a random sample every member of the target population has an equal chance of being selected.

3. Outline one weakness of a stratified sample. [3 marks]

Suggested answer: One weakness is that this requires a very lengthy selection process where you have to select the strata to use, then identify their frequencies in the target population, and finally use these frequencies to select participants from each stratum. At the end of all this, those participants selected may not always agree to take part. This complexity means that it is not a method that is used much in psychological research.

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Topic 5: Ethical considerations

Apply it Research Methods

A study found that participants would eat disgusting-flavoured biscuits if a recognised authority figure ordered them to do so. The participants thought the study was on food tasting when actually it was one into obedience to unjust commands.

1. Identify **two** ethical issues in this study. and for each one explain how the researcher could have dealt with them. [2 marks + 2 marks + 2 marks]

Suggested answer: Any two from psychological harm, deception, lack of informed consent.

Psychological harm could have been dealt with by offering the participants the right to withdraw at the start so if they felt distressed then they could leave at any point.

Deception and a lack of informed consent could have been dealt with by a debriefing where the participants would have been told the actual aim of the study after it had finished.

2. The researchers wanted to repeat the study with a group of 14-year-olds to see if there were any age differences in obedience. Explain how they would have dealt with issues surrounding informed consent in this follow-up study. [2 marks]

Suggested answer: They would have had to gain parental consent because the participants were under the age of 16 so permission would have been needed from their parent or legal guardian.

Knowledge check

1. What is meant by an 'ethical issue'? [2 marks]

Suggested answer: An ethical issue is when there is a conflict between the rights of participants to remain safe and protected, and the goals of research to produce valuable data.

2. Outline **two** ethical issues psychologists must consider when conducting their research. [4 marks]

Suggested answer: The first is informed consent which is where at the beginning of a study, participants should be given comprehensive information concerning the nature and purpose of a study and their role in it. This should include the aims of the research, the procedures and right to withdraw.

The second issue is deception, which is where participants should not be lied to or misled about the aims of a study. Participants who have been deceived, or not given full information, cannot give fully informed consent.

3. Explain how researchers could deal with **one** ethical issue. [3 marks]

Suggested answer: To deal with informed consent, researchers should produce an information sheet for participants (or their guardians) explaining what the study involves and, if appropriate, the aims. This should explain everything participants need to know about the investigation so they can make an informed choice about whether to take part. Participants are then asked to sign a consent form. If participants are under 16, this form should be signed by a parent or guardian.

Topic 6: Interviews and questionnaires

Apply it Research Methods

A study investigated whether men or women in romantic relationships were more unfaithful to their partners. The researchers interviewed 50 participants and asked them the same ten questions about their relationships. The researchers then compared the various responses to each of the ten questions.

1. What feature of the above study suggests that the researchers were using a structured interview? [1 mark]

Suggested answer: The participants were all asked the same questions about their relationships.

2. Explain **one** problem of doing an unstructured interview in this study. [2 marks]

Suggested answer: It would have made the answers to the questions more difficult to analyse as each of the 50 interviews would have had some different questions, so it would have taken a lot longer to compare all of the responses.

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3. Explain why a questionnaire would be a more suitable method of collecting data than an interview in this study. [3 marks]

Suggested answer: It would have been much quicker to mail out 50 questionnaires instead of interviewing 50 different people and probably having to hire assistants to do this. Overall this would save money and make data collection more efficient.

Knowledge check

1. Outline **one** advantage and **one** disadvantage of using interviews in psychological research. [4 marks]

Suggested answer: One advantage (particularly unstructured interviews) is that they produce extensive information. An experienced interviewer can ask follow-up questions that provide extra insights into a person's thoughts and feelings so there is detailed insight into the way the interviewee sees the world.

One disadvantage is that interview data can be difficult to analyse. The researcher may end up with lots of information, so drawing general conclusions may be complex and the conclusions that are drawn may be more based on the researcher's preconceived ideas.

2. Explain **one** difference between semi-structured and unstructured interviews. [2 marks]

Suggested answer: In a semi-structured interview there is a mixture of pre-determined questions and those made up on the spot in response to answers given by the interviewee, whereas in an unstructured interview all questions are made up as the situation demands.

3. Describe and evaluate the use of interviews in psychological research. [9 marks]

Suggested answer: Most interviews involve a face-to-face conversation between the interviewer and the interviewee, though they can also be conducted over the phone or by text. The main thing is that interviewer and interviewee are talking in real time. In structured interviews the interviewer reads out a list of prepared questions to the interviewee and works through the list. An unstructured interview is a lot like a conversation. The interviewee has few if any questions prepared in advance, though there will be a general aim. The third type of interview is a semi-structured one where there is a number of questions decided in advance but the interviewer will also ask follow-up questions at certain points.

One strength is interviews produce a lot of information. This is especially true of unstructured interviews because the follow up questions probe the interviewee to provide further information. This means that unexpected information may be collected.

Another strength is insight can be gained into thoughts and feelings in comparison to observations, which only show what people do. What people do doesn't reveal what they were thinking. This means that interviews provide a different perspective when trying to understand behaviour.

A weakness is that people may feel less comfortable about revealing personal information than when writing answers to a questionnaire. Some interviews may involve sensitive or distressing topics and interviewees may not want to reveal their true feelings to another person sitting in front of them. This limits the information collected.

Word count = 243

Topic 7: Observation studies

Apply it Research Methods

Some students decided to investigate gender differences in driving behaviour. They hid behind a bush at the entrance to their school and noted the gender of the driver of each car that entered the campus.

1. Identify the type of observation in this study. Explain your answer. [2 marks]

Suggested answer: It is a naturalistic observation as it is taking place in the normal environment of the drivers and also nothing in the environment has been altered.

2. Explain why this would be regarded as a covert observation. [1 mark]

Suggested answer: The drivers are not aware that their behaviour is being observed.

3. Explain why a covert observation might be preferable to an overt observation in this study. [2 marks]

Suggested answer: If the study was overt the drivers might be aware of being studied and change their behaviour, which could be dangerous as well as something that could affect the validity of the data collected.

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4. The students looked at whether people indicated or not when turning. Suggest **two** other categories of behaviour that could represent driving ability. [2 marks]

Suggested answer: Any two clearly observable, e.g. speed of the car, using a mobile phone, eyes on the road.

5. Explain how the students could have checked reliability of their observations. [2 marks]

Suggested answer: They would use interrater reliability where they check to see how much agreement there is between two observers. You do this by taking pairs of observations for all the different categories and correlating them. A strong positive correlation would suggest that interrater reliability was high.

Knowledge check

1. Briefly explain why categories of behaviour are necessary in observation studies. [2 marks]

Suggested answer: Categories of behaviour improve consistency of observations as they will increase agreement between different observers, which will improve interobserver reliability and make relevant behaviour clearer to the observer.

2. Outline how psychologists could check interobserver reliability in their observation. [4 marks]

Suggested answer: The researcher creates categories of behaviour (a behaviour checklist) which all observers should use when watching the same sequence of behaviour. Observers then compare the data they have recorded and talk about any differences. If there are just two observers, correlational analysis can be used to work out how similar the two sets of observations are. If there is a strong positive correlation this indicates good reliability of the observations.

3. Explain **one** weakness of using an observation to carry out research. [3 marks]

Suggested answer: One weakness of observation studies is that there are ethical issues. In order to watch or listen to natural behaviour, people don't know they are being observed (covert observation). The problem is that people may object to being observed, even if they are in a public place. The researcher is invading their right to control information about themselves (i.e. their privacy).

Topic 8: Correlations

Apply it Research Methods

A researcher wanted to investigate whether people who believe in the paranormal are less afraid of death. He used a questionnaire to determine a score for their paranormal beliefs and fear of death. In each case, a score closer to ten meant a greater belief or fear of death. The researcher found that those with a higher paranormal belief score had a lower fear of death score.

1. Name the **two** co-variables in this study. [2 marks]

Suggested answer: Belief in the paranormal and fear of death.

2. What type of correlation did the researchers find in this study? Explain your answer. [2 marks]

Suggested answer: A negative correlation because as one variable increased (paranormal belief) the other decreased (fear of death).

3. Why was it *not* possible to conclude that belief in the paranormal causes people to have no fear of death? [2 marks]

Suggested answer: Correlation does not mean causation so just because someone believes in the paranormal, this doesn't mean that this is why they don't fear death – there may be other factors involved.

Knowledge check

1. What is meant by a 'correlation'? [2 marks]

Suggested answer: This is a mathematical technique used to investigate the relationship or association between two variables, called co-variables. Correlations not only tell us whether two things are related, they also tell us the strength and direction of that relationship.

2. Outline how a scatter diagram used in a correlation is constructed and interpreted. [3 marks]

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Suggested answer: One of the co-variables being measured is represented on the x-axis – the one that goes across. The other co-variable is represented on the y-axis – the one that goes up. For each person studied a dot is placed on the graph to represent the x and y position of the co-variables. The scatter diagram means it is possible to see, at a glance, whether there is a relationship between the two variables. The closer the dots are to a diagonal line, the stronger the correlation. The direction of the line also tells us the type of correlation.

3. Explain **one** strength and **one** weakness of using a correlation. [4 marks]

Suggested answer: One strength of correlations is that they are a good starting point for research. Correlations tell us that two variables are related, and this may give researchers ideas for future investigations such as carrying out an experiment. Correlations help identify patterns between variables which might lead to new research and theories.

One weakness is that important intervening variables may be overlooked. For example, the link between stress and illness may not be because one causes the other but because of a third factor that comes in between – hence 'intervening'. For example, if a person has a stressful job, they might sleep less, smoke and drink more, and not look after themselves properly. This might increase their chances of becoming ill.

Topic 9: Case studies

Apply it Research Methods

A psychologist interested in addiction conducted a case study with a young man who had become addicted to playing fruit machines. The psychologist spent several years collecting data about the boy, David, and his family.

1. Explain how the psychologist could have collected the data in this case study. [2 marks]

Suggested answer: The psychologist probably interviewed David and his family members about patterns of behaviour and also asked questions about his early childhood. The psychologist also might have used psychological tests to assess David's personality.

2. Explain **one** strength and **one** weakness of using a case study to investigate the causes of addiction. Refer to the case study of David in your answer. [4 marks]

Suggested answer: A strength is studying one individual like David could provide in-depth understanding of the causes and experiences of an addict rather than just, for example, measuring the personality of lots of addicts.

A weakness is that case studies involve one individual, so the results tell us less about how other people will respond if put in the same situation. David will have had unique experiences which might explain his addiction but other people with similar addictions may have had different experiences. Therefore, David's case might tell us very little about what causes addiction in other people.

Knowledge check

1. Outline **two** features of a case study. [4 marks]

Suggested answer: Case studies collect mostly qualitative data, i.e. data that is not numerical and expresses people's experiences in words. The data in a case study may be a case history describing past events in the individual's life or actions leading up to a particular event.

Case studies can be conducted in a very short period of time but they tend to be longitudinal, in that they take place over a long period of time. This is so the researcher can see how behaviour changes over months or even years.

2. Give an example of quantitative data that might be collected in a case study. [1 mark]

Suggested answer: A researcher might test the abilities of the participant and then have a numerical score, for example a score for how good their memory is.

3. Describe and evaluate case studies as a method of conducting psychological research. [9 marks]

Suggested answer: A case study is an in-depth investigation of something. The something could be a single individual, a group, an event or an institution – like a school. Case studies tend to involve people or events that are unusual or unexpected but research may focus on more 'everyday' experiences as well. They collect mostly qualitative data, i.e. data that is not numerical and expresses people's experiences in words. The data in a case study may be a case history describing past events in the individual's life or actions leading up to a particular event. Case studies can be conducted in a very short period of time but they tend to be longitudinal, in that they take place over a long period of time.

One strength of a case study is that researchers are often more open-minded when conducting a case study – they don't have a particular hypothesis or focused aim. This means that unexpected results may be produced and the researcher can gain unusual insights into the behaviour they are studying.

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One weakness of case studies is that they concern unique people or events. This means it is often not possible to generalise the results beyond the particular person or event being studied. Therefore, case studies may not produce useful information.

Another weakness is that case studies are subjective. The conclusions drawn from the case study will often be based on the researcher's own 'reading' of the case which may not necessarily be the same conclusion that another researcher would come to. This challenges the validity of conclusions drawn from case studies.

Word count = 260

Topic 10: Reliability and validity

Apply it Research Methods

A questionnaire was designed by a group of students to investigate attitudes towards social media.

1. How might reliability be an issue for the students in their questionnaire? [3 marks]

Suggested answer: The students must ensure consistency so one problem might be that students were tested in different situations, so some of them might have been distracted by other students. This would mean the data collected lacked reliability. Another problem might be that different students gave out the questionnaires and gave different instructions, so there wouldn't be much consistency.

2. The students gave the questionnaires out to just their close friends. How would this affect the validity of the data collected? [2 marks]

Suggested answer: The sample was very restricted which would mean the data collected would not represent a wider population. We cannot draw any general conclusions about how people think about social media.

3. One of their questions in the questionnaire collected qualitative data. Explain why the data collected by this question might have high validity. [2 marks]

Suggested answer: The students would be free to express what they really thought instead of being restricted by a fixed range of answers. Therefore, their answers might reflect their real thoughts more closely.

Knowledge check

1. What is meant by the term 'reliability'? [1 mark]

Suggested answer: Reliability concerns the consistency of a measurement.

2. Explain **one** factor that might reduce the validity of a laboratory experiment. [2 marks]

Suggested answer: Artificial tasks make the experience less like everyday life, which reduces the validity of the results. The research therefore isn't looking at how people behave in everyday life.

3. Explain **one** factor that might reduce the validity of a field experiment. [2 marks]

Suggested answer: There is less control of extraneous variables and this can reduce validity because changes in the dependent variable may not be due to the independent variable.

4. Explain why qualitative methods are generally regarded as less reliable than quantitative methods of gathering data. [3 marks]

Suggested answer: Methods such as unstructured interviews and case studies are difficult to repeat in exactly the same way. In an unstructured interview, for instance, interviewees are encouraged to explore a particular topic and talk in detail about their thoughts and feelings. This means that no two interviews – even with the same person – are likely to be the same. Therefore, there is a lack of consistency (reliability).

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Topic 11: Types of data

Apply it Research Methods

A psychologist was investigating the amount of stress experienced in a local company. She used a questionnaire to calculate a stress score for each employee. She also used their absence record over the last year to give her more information on how they were coping with their job.

1. Identify the primary data and the secondary data in this study. [2 marks]

Suggested answer: The primary data is when the workers filled out the questionnaire whilst the workers' absence record is secondary data.

2. Explain **one** weakness of using secondary data in this study. [2 marks]

Suggested answer: It may not fit exactly what the researcher wants as the absence record does not necessarily reflect how stressed they were because there could have been others reasons why they took time off work.

3. Explain **one** strength of using quantitative data in this study. [2 marks]

Suggested answer: Quantitative data is easy to analyse and so you can quickly see how stressed somebody is by looking at a score on a questionnaire or counting the number of days off they have had.

4. In a follow-up study the psychologist wanted to gather qualitative data. Explain how she could do this. [2 marks]

Suggested answer: She could have interviewed the workers about their experiences over the last year and asked them to explain which experiences were stressful and why. This would allow her to have more detailed information about the causes of stress.

Knowledge check

1. Outline the difference between primary and secondary data. [2 marks]

Suggested answer: Primary data is information that has been obtained first hand for the purposes of a particular research project. Secondary data is information that has been gathered by someone other than the researcher before the current investigation.

2. Describe **one** strength and **one** weakness of using qualitative data. [4 marks]

Suggested answer: One strength of qualitative data is that it has more depth and detail than quantitative data. The participant or respondent is free to fully express their thoughts and feelings, so we get much more insight into the participant's view of the world than is gained with quantitative data.

One weakness is it is more difficult to analyse. The researcher may have pages and pages of material from an interview, for instance, and it may be difficult to summarise this material and therefore difficult to draw conclusions.

3. Using an example of something you have studied in psychology, explain what quantitative data is. [3 marks]

Suggested answer: Quantitative data is information that can be counted, usually given in the form of numbers or tallies. For example, in Milgram's study he measured levels of obedience in terms of the shock level that a participant was willing to give. This was numerical data.

Topic 12: Descriptive statistics

Apply it Research Methods

A teacher analysed the results of a recent class test.

Test score (out of ten)	Number of students who obtained the score
3	8
4	3

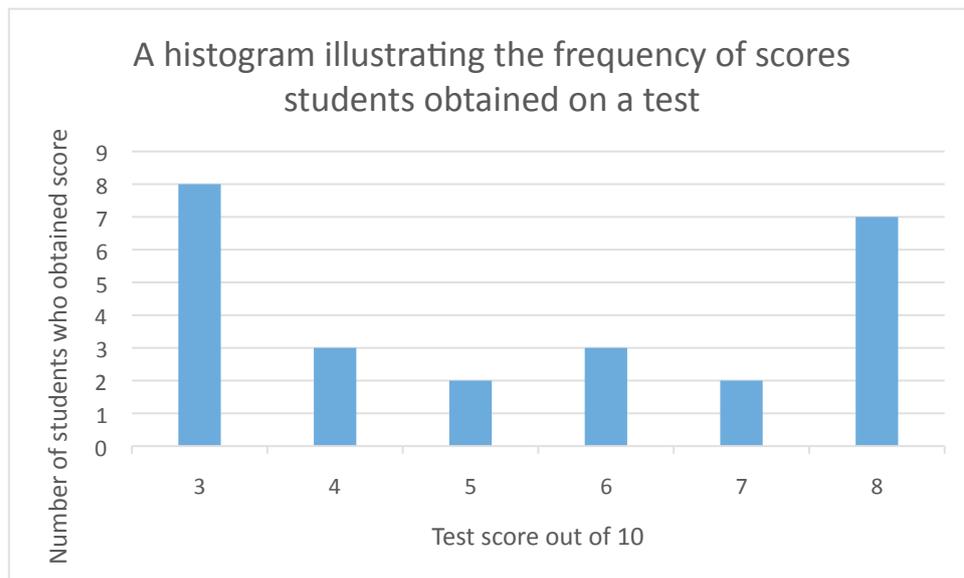
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5	2
6	3
7	2
8	7

1. Draw a histogram to represent the data. Label the axis carefully and give it a suitable title. [4 marks]

Suggested answer: Note there should be no spaces between bars.



2. Perform the following calculations:
(a) What was the modal score? [1 mark]

Suggested answer: 3

- (b) What was range? [2 marks]

Suggested answer: $8 - 3 = 5$

- (c) What was the mean? [2 marks]

Suggested answer: 134 (total of all scores) / 25 (number of scores) = 5.36 (mean)

Knowledge check

1. Explain how to calculate the median. [3 marks]

Suggested answer: To work out the median, the scores need to be arranged from the lowest score to the highest score (or vice versa). Then the middle score can be identified. If there are two scores in the middle, the mean of the two scores is used.

2. Explain **two** features of a normal distribution curve. [4 marks]

Suggested answer: One feature is that a bell-shaped curve is formed with the mean, median and mode all at the same point.

The second feature is the two halves of the distribution either side of the vertical line are perfectly symmetrical. In other words, 50% of cases are on one side and 50% of cases are on the other.

3. Outline **one** weakness of using the mean to interpret data. [2 marks].

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Suggested answer: One weakness with the mean is it can be easily distorted by an extreme score. Just one score has a strong effect on the mean and it can cause the mean to be less representative of the overall data.

Topic 13: Computation

Apply it Research Methods

Asch (1955) investigated conformity.

1. On many trials 6 out of 7 people in the group were confederates. Express this as a percentage. Give your answer to **one** decimal place and show your workings. [3 marks]

Suggested answer: $6 / 7 \times 100 = 85.7142857$, to one decimal place is 85.7%

2. There were 18 trials of which 12 were critical trials. What was the ratio of standard trials to critical trials? Express this in the lowest form. [2 marks]

Suggested answer: 6 standard trials to 12 critical trials = 6:12 (divide both numbers by 6) = 1:2

3. 75% of naïve participants conformed at least once. How many of the 123 naïve participants conformed at least once? Round your answer up to the nearest whole number. [2 marks]

Suggested answer: $123 \times 75 / 100 = 92.25$ is 92 people.

Knowledge check

1. Express 256,678 to two significant figures. [1 mark]

Suggested answer: 260,000

2. Using an example, explain how to express a very large number in standard form. [3 marks]

Suggested answer: Take a very large number such as 325,934,621,311,402,011

First you reduce the digits to a value between 1 and 10, so we might just use 3 or 3.3 (rounding up).

Second you work out how many times we need to multiply 3.3 by 10 to get to our original number (how many places did the decimal point move to the left?). This is 17 tens.

Finally this is written as 3.3×10^{17}

3. There are 15 cats and 12 dogs in a pet shop. What is the ratio of cats to dogs? Give your answer in its simplest form and show your workings. [2 marks]

Suggested answer: The ratio of cats to dogs is 15:12. However, both sides of this ratio are divisible by 3. Dividing by 3 gives us 5:4.

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Chapter 5 Social influence

Topic 1: Conformity: Asch's study

Apply it

Read the item below and then answer the questions that follow.

In 1961 the USA invaded Cuba in an attempt to overthrow the then leader Fidel Castro. However, the invasion was a failure. It later turned out that the US President's advisors had severe doubts about the invasion but no one spoke out because they believed everyone else thought it was a good idea. Therefore, they all agreed on a course of action that they privately disagreed with!

1. What is meant by the term 'conformity'? Give an example from the above item in your answer. [2 marks]

Suggested answer: Conformity relates to when somebody is influenced by the views of the majority (group pressure). In the case described, the President's advisors did not think invading Cuba was a good idea but still agreed to do it as they felt pressure from other members of the group.

2. How is the behaviour of the US President's advisors similar to that of Asch's participants? Refer to Asch's study in your answer. [2 marks]

Suggested answer: Asch's participants sometimes publicly agreed with the wrong answer given by the confederates even though privately they disagreed as the correct answer was obvious. The President's advisors also publicly agreed on a course of action (invading Cuba) that they privately disagreed with.

Knowledge check

1. Outline what Asch's study shows us about conformity. [3 marks]

Suggested answer: Asch's study shows that people are influenced by group pressure. It seems that this is due to a need to fit in with others as there was a surprisingly high level of conformity for a task that had a clear-cut answer – 75% of participants gave at least one wrong answer on critical trials.

Asch's study also shows a high level of independence. Group pressure is very strong but nevertheless the majority of the participants went against the group opinion as two-thirds of the time participants disagreed with the majority on the critical trials.

2. Outline **one** way that research into conformity can be applied to everyday life. [2 marks]

Suggested answer: An example of conformity is in a maths class: A student may answer a question incorrectly because their classmates have also given the same wrong answer, therefore they are conforming to fit in with others (even though they were incorrect). This was what happened in Asch's study.

3. Outline and evaluate Asch's study into conformity. [9 marks]

Suggested answer: Asch wanted to see whether people would conform in unambiguous situations. American male students were tested in a group of six to eight confederates. Two large cards were shown, one with a single standard line and the other with three comparison lines. Participants were asked to select the matching line. There were 18 trials with 12 of them being critical ones where confederates all selected the wrong line. The participant gave the wrong answer a third of the time on the critical trials and 25% of the participants never gave a wrong answer. Although this shows that people are influenced by group pressure, it also shows a high level of independence as, despite group pressure, the participant went against group opinion the majority of the time.

A weakness of Asch's study is it may only reflect conformity in 1950s America. Perrin and Spencer repeated Asch's study in 1980 in the UK and found just one conforming response in 396 trials. This suggests that the Asch effect is not consistent over time.

Another weakness is that the task and situation are artificial. Being asked to judge the length of a line (a trivial task) with a group of strangers doesn't reflect everyday situations where people conform. This means that the results may not explain more serious real-world situations.

A further weakness is that Asch's research is more reflective of conformity in individualist cultures. Studies conducted in collectivist countries such as China produce higher conformity rates than those carried out in individualist countries such as America and the UK (Bond and Smith). This suggests that Asch's findings cannot be generalised to collectivist cultures.

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Word count = 271

Topic 2: Conformity: Social and dispositional factors

Apply it Research Methods

Use your knowledge of psychology to design an experiment that investigates how one social factor affects conformity. Refer to the following in your answer:

- A suitable alternative hypothesis.

Suggested answer: Participants who have to say their answer out loud conform more than participants who write down their answer. (a possible directional hypothesis)

(You could also test the hypothesis that 'Participants in a group with two confederates conform less than participants in a group with three confederates' or 'Participants given a harder task to judge conform more than participants with an easier task to judge'.)

Non-directional hypotheses would be acceptable.

- The experimental design you would choose with a justification of why it was chosen in your study.

Suggested answer: An independent measures design will be chosen because otherwise participants might guess the hypothesis if they did the same thing twice but wrote their answers down the second time.

- An explanation of how you would carry out your study.

Suggested answer: I would show participants two large cards, one with a single standard line and the other with three comparison lines. The answer will be obvious. Participants will be asked to select the matching line. Six confederates would all state their answers first. In one condition the participant then also states their answer out loud. In the second condition they write their answer down.

I will do this with 40 participants, 20 in each condition. I will then compare the results to see if participants are affected by anonymity i.e. conform less.

- The results that would be expected.

Suggested answer: Participants who answer out loud should show higher rates of conformity compared to participants who are asked to write their answer down. [6 marks]

Knowledge check

1. Explain how expertise affects conformity. [3 marks]

Suggested answer: Experience increases your confidence in your opinions and knowledge so people with greater expertise tend to be less conformist. For example, a study by Lucas found that when judging the answers to Maths problems, people who rated themselves as good at Maths were less likely to conform than those who were less confident.

2. Explain the difference between a social and dispositional factor in relation to conformity. [3 marks]

Suggested answer: A social factor is the behaviour of other people, whereas a dispositional factor is your personality or character. Social factors are around us in the social world whereas dispositional factors are factors within the person that affect whether they will conform.

3. Describe and evaluate **two** factors that affect conformity to majority influence. [9 marks]

Suggested answer: One social factor that affects conformity is group size. It might seem obvious that the more people there are in a group, the greater the pressure to conform to the group opinion – and Asch found that was true up to a point. Asch tried his procedure with groups of varying size. With two confederates, conformity to the wrong answer was 13.6% on the critical trials, whilst with three it rose to 31.8%. However, adding more confederates made little difference.

One weakness with this explanation is that group size has different effects depending on the type of task. Asch found that conformity did not significantly increase when the majority was more than 3. However, other research has found that a majority of 8 or more can increase conformity if participants are given a task with no obvious answer. This suggests that the type of activity people are given influences the impact that group size has on conformity.

Another factor that affects conformity is expertise (a dispositional factor). Experience increases your confidence in your opinions and knowledge, so it is no surprise that people with greater expertise tend to be less conformist.

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There is research evidence that supports this. For example, when judging the answers to Maths problems, people who rated themselves as good at Maths were less likely to conform than those who were less confident (Lucas *et al.*). This shows that having greater knowledge on a topic causes people to resist group pressure more.

However, one weakness is that focusing on one single factor to explain conformity is simplistic. In some situations, being an expert may not be sufficient. For example, even if you are an expert you still might conform in a group of strangers in order to be liked.

Word count = 291

Topic 3: Obedience: Milgram's study

Apply it

Read the item below and then answer the question that follows.

Michael: I like school trips. The teachers seem more relaxed and wear more casual clothes.

Rebecca: I don't enjoy them really. The students muck about more than when they are in lessons.

Use your knowledge of research into obedience to explain why students misbehave on school trips. Refer to the conversation in your answer. [4 marks]

Suggested answer: One of the reasons for the high level of obedience in Milgram's study was that the experimenter was dressed in a lab coat and so looked like a recognised authority figure. As the teachers were wearing more casual clothes on a school trip, then students would also perceive them as having less authority and so are more likely to misbehave.

In addition, the location of Milgram's study was a prestigious university, so the participants would think again that the experimenter had more authority. Therefore, another reason why the students would misbehave is because they are on a trip rather than in school, so the setting gives the teachers less authority.

Knowledge check

1. Using an example, outline what is meant by 'obedience'. [3 marks]

Suggested answer: Obedience is a type of social influence that causes a person to act in response to a direct order from a figure with perceived authority. There is also the implication that the person receiving the order is being made to do something that they would not have done without the order. An example of this would be picking up some litter on the floor when a policeman tells you to.

2. Use your knowledge of psychology to describe the method used in a study in which obedience was investigated. Your answer should include how the obedience was created and what was measured. [4 marks]

Suggested answer: Participants were recruited and made to be teachers. Each teacher was paired with a learner (confederate). The learner was strapped in a chair and wired with electrodes which could give an electric shock. The teacher was instructed by the experimenter to give a shock to the learner when a mistake was made. The intensity was increased each time in steps of 15 volts up to 450 volts.

Obedience was created because the teacher was told by a figure of authority (the experimenter in a lab coat) to continue to shock the learner whenever the teacher wished to stop.

Obedience was measured by whether the participant would continue to shock the learner up to 450 volts despite a label stating 'danger severe shock'.

3. Describe and evaluate research on obedience. [9 marks]

Suggested answer: Milgram wanted to see if people would obey unjust orders. A 'teacher' was paired with a 'learner' (who was a confederate). The learner was strapped in a chair and wired with electrodes which could give an electric shock. The teacher was instructed by the experimenter (not played by Milgram) to give a shock to the learner when a mistake was made. The intensity increased from 15 to 450 volts. It was found that no participants stopped below 300 volts and 12.5% stopped at 300 volts when the learner pounded on the wall. Furthermore, 65% continued to 450 volts (the maximum voltage). Milgram concluded that obedience had little to do with someone's disposition but instead was influenced far more by situational factors such as the location where the order is given.

One weakness of this study is that participants may not have believed that the shocks were real. Perry found that Milgram's participants voiced suspicions about the authenticity of the shocks. This suggests that Milgram's participants went along with the study because they didn't want to spoil it and therefore they weren't really obeying orders.

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One strength is that other studies have found similar obedience levels. Sheridan and King found that 100% of females followed orders to give what they thought was a fatal shock to a puppy. This suggests that Milgram's results were not faked but represented genuine obedience.

Another weakness is that Milgram's participants experienced considerable distress. He could have caused psychological damage to his participants because they thought they were causing pain to the learner. Such ethical issues question whether his research should have been carried out.

Word count = 269

Topic 4: Obedience: Milgram's agency theory (social factors)

Apply it Research Methods

Milgram conducted many variations of his studies and he interviewed participants afterwards.

1. Explain the difference between a questionnaire and an interview. [3 marks]

Suggested answer: A questionnaire is a fixed set of written questions used to find a person's thoughts or attitudes on a particular topic whereas the questions in an interview can be varied. In a questionnaire answers are written down whereas in an interview answers are delivered verbally and there is an interaction between an interviewer and an interviewee.

2. Use your knowledge of interviews to explain why Milgram used an interview rather than a questionnaire to gather information about the factors that affect obedience. [5 marks]

Suggested answer: Interviews can produce extensive amounts of information because people are more willing to express their thoughts verbally instead of having to write them down. This means that Milgram would have collected a larger amount of information from an interview. Milgram would have wanted to gain in-depth information about why people did and did not obey the authority figure, which may not have been gained through a questionnaire.

In addition, Milgram might not have anticipated the answers so, in an interview, he could ask follow-up questions to probe more deeply. This could not have happened if Milgram had used a questionnaire as it would have been a set of questions that people would have to answer.

Finally, having an interviewer present to explain means that Milgram could obtain more valid information through interviews.

3. Explain **one** weakness of using an interview to gather information. [3 marks]

Suggested answer: One weakness of using an interview to gather information is people may feel less comfortable about revealing personal information than when writing answers to a questionnaire. Some interviews involve sensitive or distressing topics and interviewees may not want to reveal their true feelings to another person sitting in front of them. This limits the information collected.

Knowledge check

1. Briefly outline agency theory. [2 marks]

Suggested answer: Agency theory explains obedience in terms of whether an individual is making their own free choices or acting as an agent for an authority figure. 'Agency' concerns who is making the choices – you or someone on your behalf.

2. With reference to Milgram's study, explain how culture affects obedience. [3 marks]

Suggested answer: Certain people have more authority than others because of their position in the social hierarchy. The social hierarchy is related to your culture (your society). In some cultures, this authority structure is very strong and people are taught from a young age to obey people in authority. They are also taught which position people occupy in the hierarchy. In such cultures obedience will be stronger than in cultures where the social hierarchy is less important.

In Milgram's obedience study people obeyed the orders because the man was dressed in a lab coat, which is a sign of authority in our culture.

3. Describe and evaluate **one** social factor that affects obedience. [9 marks]

Suggested answer: One social factor that affects obedience is agency. This explains obedience in terms of the power of others and social factors. It proposes that when an individual sometimes acts as an agent for someone else, we say that they are in an agentic state. This is where the person follows orders with no sense of personal responsibility. This is different from an autonomous state where a person makes their own free choices and feels

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responsible for their own actions. The term 'agentic shift' is used to describe the change from an autonomous to an agentic state. The shift occurs when a person sees someone else as a figure of authority.

One strength is that there is research support. Blass and Schmitt showed a film of Milgram's study to students and found that they blamed the 'experimenter' rather than the 'teacher' for the harm to the learner. Therefore, the students recognised the legitimate authority of the experimenter as the cause of obedience.

One weakness is that agency theory can't explain why there isn't 100% obedience in Milgram's study. He found that 35% of the participants didn't go up to the maximum shock of 450 volts. This means that agency cannot fully explain obedience.

Another weakness is that agency theory gives people an excuse for 'blind' obedience. Nazis who were racist and prejudiced were doing more than just following orders. This means that agency theory is potentially dangerous as it can give certain people an alibi for their unjust behaviour.

Word count = 247

Topic 5: Obedience: Adorno's theory (dispositional factors)

Apply it

Read the item below and then answer the question that follows.

David is the least popular drill sergeant in the Army. He seems to enjoy inflicting pain on the members of his unit. He resented his Dad for calling him a slacker but enjoys punishing those beneath him for behaving in a similar way.

Identify characteristics of the authoritarian personality. Refer to examples of David's behaviour. [4 marks]

Suggested answer: People with an authoritarian personality have strict parents whom they have hostile feelings towards. This relates to David who resents his dad who labelled him as a slacker.

People with this personality type enjoy scapegoating others so they can displace their negative feelings towards their parents onto those who they see as inferior to them. David also enjoys punishing members of his unit as a way to deal with his own feelings of inferiority.

Knowledge check

1. Outline what is meant by an 'authoritarian personality'. [3 marks]

Suggested answer: This explains obedience in terms of people's personality. Some people have an exaggerated respect for authority. They are more likely to obey orders and look down on people of inferior status. They have a 'black and white', rigid style of thinking. They believe in stereotypes and don't like change.

2. Explain why someone with an authoritarian personality is likely to be more obedient than someone who does not have an authoritarian personality. [3 marks]

Suggested answer: The concept of the authoritarian personality is that some people have an exaggerated respect for authority, which has developed because of having a very authoritarian parent. This means they are more likely to respect authority figures and to obey orders from someone in authority.

3. Describe and evaluate **one** dispositional factor that affects obedience. [9 marks]

Suggested answer: One dispositional factor that affects obedience is the authoritarian personality. Some people have an exaggerated respect for authority so they are more likely to obey orders and look down on people of inferior status. They have a 'black and white', rigid style of thinking and they believe in stereotypes and don't like change. It originates from overly strict parenting and receiving only conditional love from parents. The child identifies with parents' moral values and so feel hostility towards their parents which cannot be directly expressed for fear of reprisal. Freud suggested that people who have hostility displace this onto others who are socially inferior in a process called scapegoating.

One weakness is that the theory was based on a flawed questionnaire. The F-scale has a response bias as anyone who answered 'yes' would end up with a higher authoritarian score. This challenges the validity of the theory because it is based on poor evidence.

In addition to this, a further weakness is that the evidence is based on correlational data. Therefore, we cannot claim that an authoritarian personality causes greater obedience levels. Other factors may explain the apparent link between obedience and the authoritarian personality.

Another weakness is the authoritarian personality cannot explain all cases of obedience. Millions of Germans displayed highly obedient and prejudiced behaviour but didn't have the same upbringing and same personality. If

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German culture was highly authoritarian we would then expect all Germans to have an authoritarian personality, but some don't. This means that there are probably social factors that affect obedience as well as dispositional ones.

Word count = 261

Topic 6: Prosocial behaviour: Piliavin's subway study

Apply it

Read the item below and then answer the question that follows.

Neche receives a nasty foul whilst playing football which causes him to fall and cry out in pain. An opposing player sees this and kicks the ball out of play so Neche can receive treatment from the physiotherapist. Later on in the same game Neche's team mate Corey falls to the floor after barely being touched by a defender who tackled him. This time, the opposition ignore him.

Use your knowledge of Piliavin *et al.*'s study to explain why the other team were more willing to help Neche compared to Corey. [3 marks]

Suggested answer: In Piliavin *et al.*'s study help was more forthcoming to the man with the cane than the man who smelled of alcohol. In the above item, Neche seemed to receive a nastier foul than Corey which is why the other team were willing to help him as he, like the disabled victim in Piliavin *et al.*'s study, was seen as more deserving of their help.

Knowledge check

1. Explain what Piliavin's subway study shows about prosocial behaviour. [3 marks]

Suggested answer: The study shows that certain characteristics of the victim make a difference to whether they receive help – if they are more deserving (appear disabled) they are much more likely to be given help than if seen as less deserving (drunk).

The results also show that, in a natural setting, the number of people who witness the emergency does not have an effect on their willingness to help.

2. Evaluate Piliavin's subway study. [4 marks]

Suggested answer: One strength of this study is that participants did not know their behaviour was being studied. The subway train passengers did not know they were in a study and behaved naturally. So the results of this investigation are high in validity.

One weakness of the study is that the participants came mostly from a city, so they may have been used to emergencies. In a city it is commonplace to see beggars in the street and occasionally witness someone being injured or needing help. Therefore, such people may be more used to ignoring someone in need. This means that their behaviour may not have been typical of all people.

3. Piliavin used a field experiment in his study into prosocial behaviour. Describe his study and evaluate the research methods used. [9 marks]

Suggested answer: Piliavin wanted to see whether certain characteristics would influence whether people received help in an emergency situation. On a New York subway a victim (a male confederate) stood in the centre of the subway and collapsed and stayed on the floor until helped up. One confederate acted as model if no one helped. In one condition, the victim appeared to be drunk and another condition he appeared to be disabled (he carried a cane). Two researchers then observed how long it took for the victim to be helped. The 'disabled' victim with a cane was given help in 95% of the trials whilst the drunk victim was helped on 50% of the trials. This shows that the characteristics of the victim affect whether they will receive help.

Note – the evaluations here are related to the research methods as required in the question.

One strength of field experiments is that they are often more realistic than laboratory experiments because they are conducted in a natural environment. Participants, like those in the subway train in Piliavin's study, often don't realise they are being studied in a field experiment so their behaviour may be more natural.

One weakness of the study is that the participants came mostly from a city. They may have been used to emergencies. In a city it is commonplace to see beggars in the street and occasionally witness someone being injured or needing help. Therefore, such people may be more used to ignoring someone in need meaning that their behaviour may not have been typical of all people.

Another strength of this study was that qualitative data was also collected. The two observers on each trial noted down remarks they heard from passengers. This offered a deeper insight into why people did or did not offer help.

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Word count = 283

Topic 7: Prosocial behaviour: Social and dispositional factors

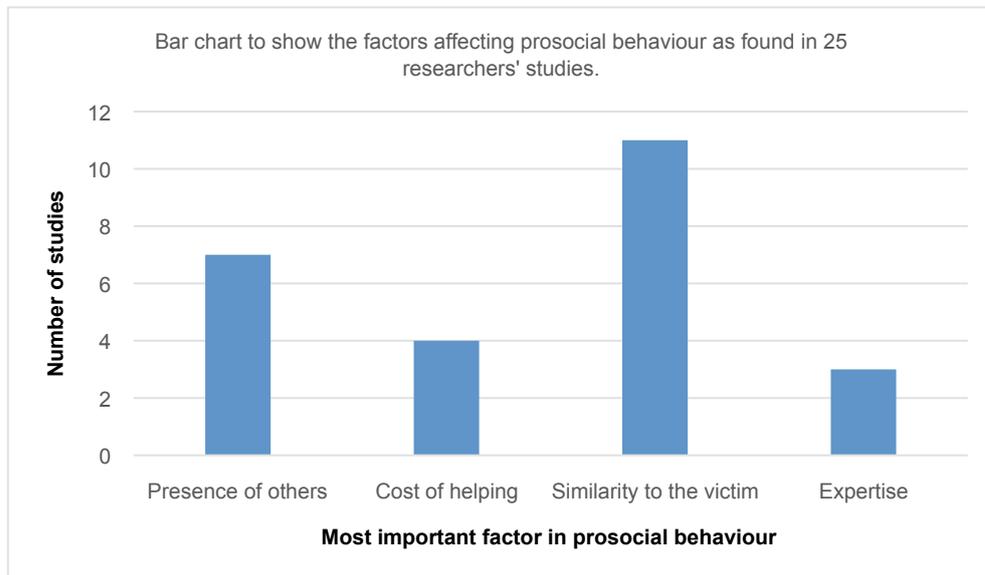
Apply it Research Methods

A psychologist plans to review research conducted by other researchers who have investigated the social and dispositional factors related to prosocial behaviour. He finds 25 studies, seven of these studies concluded that the presence of others is the main factor in prosocial behaviour, four found most support for the cost of helping, eleven found similarity of the victim was most important and three found that expertise was most significant.

1. Explain whether the psychologist has used primary or secondary data in his study. [2 marks]

Suggested answer: The psychologist has used secondary data because he has used data that has been collected by someone else for a different set of aims. He has used this data for his own research aims.

2. Draw a bar chart of the data. Label the axes carefully and give it a suitable title. [4 marks]



3. Calculate the results as a percentage. Show your workings. [4 marks]

Suggested answer:

Presence of other: $7 / 25 \times 100 = 28\%$

Cost of helping: $4 / 25 \times 100 = 16\%$

Similarity to the victim: $11 / 25 \times 100 = 44\%$

Expertise: $3 / 25 \times 100 = 12\%$

Knowledge check

1. What is meant by the term 'bystander behaviour'? [2 marks]

Suggested answer: The observation that the presence of others (bystanders) reduces the likelihood that help will be offered in an emergency situation. For example, in a car accident, bystanders are less likely to offer help if there are a lot of them than if there are only a few.

2. Explain how similarity to the victim can be used to explain bystander behaviour. [3 marks]

Suggested answer: It may be that, if you identify with a characteristic of the victim you are more likely to help. For example, Manchester United football fans were more likely to help a runner who had fallen over if they were dressed in a Manchester United shirt as opposed to a Liverpool one (Levine *et al.*).

3. Describe and evaluate research into social and dispositional factors that affect bystander behaviour. [9 marks]

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Suggested answer: One social factor that affects prosocial behaviour is the presence of other people. Darley and Latané asked participants to have a discussion on an intercom with others (confederates). One had an epileptic seizure and asked for help. If participants thought they were alone 85% reported the seizure compared to 31% if they thought four others were present.

One weakness is that other research has found that helping rates are not always lower when others are present. This is supported by a study of real-life emergencies which found that bystanders at an emergency were very helpful in situations which were very serious (Faul *et al.* 2016). This shows that the presence of others doesn't always have a negative effect on prosocial behaviour.

Another weakness is that prosocial behaviour is not just influenced by the presence of others. For example, the decision of whether to help also depends on the cost-reward model – the idea that people balance the costs and rewards of helping before deciding whether to offer assistance in emergencies. This suggests that there are other social factors that affect prosocial behaviour,

A dispositional factor is expertise, which is whether people with specialist skills are more likely to help in emergency situations that suit their expertise. For example, registered nurses were much more likely to help a workman who had fallen off a ladder (Cramer *et al.*).

One weakness with this explanation is that expertise may not always matter. Shotland and Heinold compared those who had received Red Cross training and those who had not and found that their decision to help was unaffected by expertise – both groups were equally likely to intervene but expertise did affect the quality of the help offered. This shows that expertise may be important in other ways.

Word count = 292

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Topic 8: Crowd and collective behaviour: Deindividuation

Apply it

Read the item below and then answer the question that follows.

Darren was sentenced to two years in prison for a theft. His parents were worried about how he would cope as he was never 'tough'. So they were shocked to find out that he had spent a week in solitary confinement after beating up another prisoner. When Darren was asked to explain his actions to his parents, he said that being treated as a number rather than a person just changed him.

Identify **one** social factor that could have affected Darren's behaviour and explain why it might have caused him to act more antisocially. [3 marks]

Suggested answer: Darren might have acted more antisocially because of deindividuation. He was referred to as a number in prison which made him feel anonymous and lose his sense of personal responsibility. This meant he acted in a more socially irresponsible manner which is why he ended up beating up a prisoner. The loss of identity therefore caused him to act more aggressively.

Knowledge check

1. Distinguish between the terms prosocial and antisocial behaviour. [3 marks]

Suggested answer: Prosocial behaviour is acting in a way that is beneficial to other people, and may not necessarily benefit the helper. Whereas antisocial behaviour is acting in a way which is annoying or harmful to other people. This includes behaving aggressively as well anything that might generally distress others such as noisy or rowdy behaviour.

2. With reference to an example, explain what is meant by the term 'deindividuation'. [4 marks]

Suggested answer: Deindividuation is a psychological state in which an individual loses their personal identity and takes on the group identity of the people around them. For example, when in a crowd of people or when wearing a uniform which represents a particular social group (and thus represents the group's social group norms). The result may be to free the individual from the constraints of personal norms.

3. Describe and evaluate deindividuation as an explanation for antisocial behaviour. [9 marks]

Suggested answer: Deindividuation is a psychological state in which an individual loses their personal identity and takes on the group identity of the people around them. For example, when in a crowd of people or when wearing a uniform which represents a particular social group (and thus represents the group's social group norms). The result may be to free the individual from the constraints of personal norms. This means that the person may behave antisocially because they no longer feel responsible. Normally, when you are bound by personal norms you feel people will notice what you personally do and therefore you behave in a more acceptable way.

One weakness is that deindividuation doesn't always lead to antisocial behaviour. Johnson and Downing found that participants dressed as a nurse gave fewer and milder shocks than those dressed in a KKK outfit but more shocks than those in their own clothes. This shows that people take on group norms.

On the other hand, one strength is that understanding deindividuation can be used to manage crowds. At sporting fixtures crowd control can be achieved through using video cameras so people are more self-aware. This can then reduce aggressive behaviour of the crowd.

However, a weakness of this explanation is that antisocial behaviour may be due to crowding rather than collective behaviour. Research shows that being in very crowded conditions can make animals and people feel stressed and behave antisocially. Though Freedman argued that, in some overcrowding situations, the increased excitement of being in a crowd may lead to prosocial behaviour so it may be overcrowding that creates antisocial behaviour as well as deindividuation.

Word count = 269

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Topic 9: Crowd and collective behaviour: A case study

Apply it Research Methods

Reicher conducted a case study to investigate crowd and collective behaviour in St Pauls in Bristol.

1. Explain in what way Reicher's study was a case study. [2 marks]

Suggested answer: Reicher's study is an in-depth investigation of one particular event. Many different techniques were used for data collection – interviews with people who were there at the time, observations of the events, newspaper reports.

2. Reicher gathered both primary and secondary data in his case study. Briefly outline what is meant by primary and secondary data and give an example of each in Reicher's study. [4 marks]

Suggested answer: Primary data is information that has been gathered first hand by the researcher for the purpose of the research. Reicher gathered primary data by interviewing 20 people after the riot.

Secondary data is data that has been collected by someone else for the aims of their research – so it already exists before the researcher comes to do their investigation. An example of this is Reicher's analysis of reports of the riots from newspapers, TV and radio stations.

3. Explain **one** strength and **one** weakness of the case study method, using examples from this case study. [4 marks]

Suggested answer: A strength of case studies is they are the best way of studying unusual forms of behaviour. Crowd riots are unusual, so this case study gave us a unique opportunity to study such an event.

One weakness of case studies is that they often concern unique people or events. This means it is often not possible to generalise the results beyond the particular person or event being studied. The St Pauls riot might not be typical of all mob events. For example, this event involved conflict between police and residents which would not always be the case.

Knowledge check

1. What is meant by the term 'collective behaviour'? [2 marks]

Suggested answer: This is behaviour that emerges when a group of people join together. The group may behave in a way that is different from the way the individuals might have behaved on their own. In other words the group creates its own identity.

2. Describe the method of **one** study that investigated behaviour in crowds. [2 marks]

Suggested answer: Reicher conducted an in-depth study of a riot when there was one in St Pauls in Bristol. He analysed reports of the riot from the police, newspapers, TV and radio stations. He also interviewed 20 people immediately after the riot to obtain an understanding of what happened.

3. Describe and evaluate how research into crowd behaviour has increased our understanding of antisocial behaviour. [9 marks]

Suggested answer: Reicher aimed to investigate the behaviour of a crowd to see whether or not their behaviour was unruly. Newspaper, TV, radio and police reports of the St Pauls riots were analysed. People were interviewed after the riot to understand what happened, including six interviews in depth. The riot was triggered by policemen raiding a café for drugs, an action which was seen as unjustified. When the police left, rioters calmed down and never moved beyond the St Pauls area. This shows that the crowd's behaviour was rule-driven and based on the social attitudes of the area, and therefore anger was only expressed towards predictable targets.

One strength of this research is that other researchers have come to the same conclusion as Reicher about crowd behaviour. Research on deindividuation has showed that crowd behaviour is not simply mindless and without direction but it is driven by social norms related to acceptable behaviour for that social group. Marsh concluded that the apparent disorder of 'hooligans' is actually governed by rules which prevent violence escalating beyond a certain point.

A weakness is that the case study involved subjective data. Reicher based his account on eyewitness testimony of reporters and members of the crowd who may have had a biased perspective on the events they witnessed. This means that the data may lack validity.

Another strength is that Reicher's research provides ideas about how best to police riots. Reicher's analysis suggests that increasing the police presence in riots does not always lead to a decrease in violence so it may be better to let local communities 'police' themselves. This shows that this research can have a positive effect in the real world.

Word count = 278

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Topic 10: Crowd and collective behaviour: Social and dispositional factors

Apply it

Read the item below and then answer the question that follows.

Chris and Mike are two teachers.

Chris: My students are less productive when doing group work and actually work better on their own.

Mike: I see what you mean but also I find that some students work really well in groups whereas others are just lazy. It depends on the student really.

Identify **two** factors that influence collective behaviour and explain how these may have affected the behaviour of Chris's and Mike's students. [4 marks]

Suggested answer: Chris's answer suggests his students are affected by social loafing as being put in a group causes them to put in less effort. Presumably this is because they are no longer being judged as individuals so will work less well than when they are working on their own.

Mike's students could have been affected by dispositional factors as he suggests that how much work a student does depends on the student. For example, students with an internal locus of control are less likely to be influenced by others in a crowd so will work better in groups.

Knowledge check

1. Identify **three** factors that affect crowd and collective behaviour. [3 marks]

Suggested answer: Social loafing, deindividuation and morality.

2. Explain how personality affects crowd and collective behaviour. [3 marks]

Suggested answer: One personality characteristic that may be relevant is locus of control. Someone with an external locus of control believes that they do not influence the things that happen to them, whereas someone with an internal locus of control feels that they are in charge of what happens to them. People with an internal locus of control are less likely to be influenced by the behaviour of others when in a crowd. They would be more likely to follow their personal norms than the social norms created by the others around them.

3. Describe and evaluate the effect of social factors on collective behaviour. [9 marks]

Suggested answer: Social loafing is an example of where working in a group, individually people put in less effort. This reduced effort can be understood in terms of deindividuation – being in a group reduces personal identity so no-one needs to work as hard because no-one will know the other people's contribution. For example, Latané *et al.* found participants made less noise individually when shouting in a group of six than when on their own.

One weakness with this explanation is that the negative effects of group work do not apply to all kinds of tasks. Creative tasks like brainstorming benefit from a group of people working together. This shows that in some tasks the output from a group is often greater than the sum of individuals in the group.

Culture is another social factor. In individualist cultures, such as the US and the UK, people are more focused on individual needs. Decisions, for example about your friends or your job, tend to be based on what will be the best outcome for you. In more collectivist cultures, such as China and Korea, decisions are made with reference to the needs of the group – families and society in general.

One weakness with this explanation is that we are making generalisations about a country. People vary considerably within a country. For example, people in the US do not simply belong to one culture and may belong to a religious group which holds certain values or may belong to the Democrat party which again holds certain values. It is simplistic to talk about national cultures and make predictions about behaviour.

Word count = 265

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Chapter 6 Language, thought and communication

Topic 1: Language and thought: Piaget's theory

Apply it

Read the item below and then answer the question that follows.

Toby is learning how to speak. At the age of one and a half he uses the word 'sharp' when referring to anything that is dangerous. By the age of two and a half he now only uses it in relation to objects that are sharp such as knives.

Use your knowledge of Piaget's theory to explain Toby's language development. [3 marks]

Suggested answer: At age one and a half, Toby is old enough to be using language. However, his ability to understand a range of specialised concepts has not developed. Therefore, he uses 'sharp' as a rather general word.

By age of two and a half, his schema of the world has developed further and he is able to discriminate more finely between concepts and now can apply the word 'sharp' to more specific concepts such as knives.

Knowledge check

1. Outline Piaget's view that language depends on thought. [3 marks]

Suggested answer: Children develop language by matching the correct words to their existing knowledge of the world. The child's understanding of a concept comes first (the schema), and then they learn how to express their understanding of it. So, for Piaget, thought and understanding comes first, and only then can a child use the language for the concept.

2. Explain **one** evaluation of Piaget's theory of language. [3 marks]

Suggested answer: One strength of Piaget's theory is that it is supported by the fact that early language development is not random. When children start talking they will often use two-word phrases such as 'Mummy sock' – as in a sock that is owned by Mummy. This suggests that children already have some understanding of the relationship between objects and people in the real world before they start to talk. This means that children start to use language only when they have developed the right schema – which supports Piaget's theory.

3. Describe and evaluate Piaget's theory of language development. [9 marks]

Suggested answer: Piaget's theory concerns how our thinking changes as we develop and refine our schemas about the world. Children develop their language by knowing the schema first and then matching the correct word to their knowledge. For example, a child develops a concept of furry animals and later learns to describe this as a 'dog'. Thought and understanding comes first, language develops after. Children only understand words when they have reached the correct stage of development and are ready. They can have language without understanding but will not be able to use it effectively. Children learn to understand language considerably before they produce it. Children start producing language towards the end of the first year, in the sensorimotor stage.

A strength is that Piaget's theory it is supported by the fact that early language is not random. When children start talking they use two-word phrases like 'Mummy sock', which shows they can see how objects relate to each other. This suggests that children already have some understanding of the relationship between objects and people in the real world before they start to talk. This means that children only start to use language when they have some understanding of it.

A weakness is the Sapir-Whorf hypothesis challenges Piaget's theory. It states that language comes before thought as people need a word or phrase for an object to think about it. This suggests that Piaget may have been wrong.

Another weakness is that schemas cannot be scientifically measured. It is very difficult to know if schemas exist as we cannot measure them directly. This shows that Piaget's theory of language and thought is not based on solid scientific evidence.

Word count = 276

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Topic 2: Language and thought: The Sapir–Whorf hypothesis

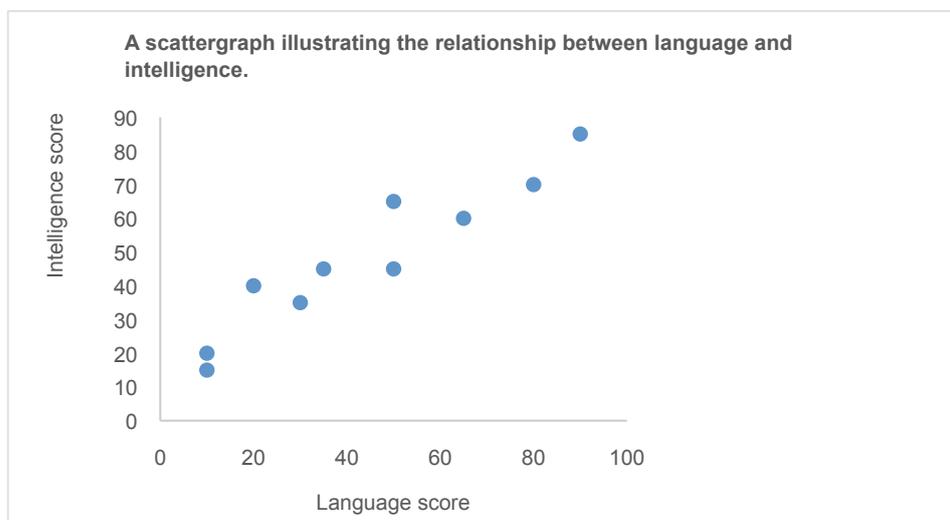
Apply it Research Methods

A researcher investigated the relationship between language and intelligence (as a measure of thought) with a group of students. The students took a language test and an intelligence test.

Participant	Language score	Intelligence score
1	20	40
2	10	15
3	80	70
4	50	65
5	35	45
6	30	35
7	90	85
8	65	60
9	50	45
10	10	20

1. Produce a scatter diagram of the results in the table above. [4 marks]

Suggested answer:



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2. Describe the relationship between the two co-variables. [2 marks]

Suggested answer: There is a positive correlation between the co-variables as each co-variable is increasing jointly. This suggests there is a relationship between language and intelligence – the more competent you are with language, the greater your intelligence.

3. Explain **one** weakness of using correlational analysis in this study. [2 marks]

Suggested answer: Correlations do not tell us whether one co-variable causes the other so we can't be sure that the reason that people were more intelligent was because they had better vocabularies/use of language (or vice versa).

Knowledge check

1. Explain what is meant by the phrase 'thinking depends on language'. [2 marks]

Suggested answer: The phrase means that language comes first, then thought comes after. Words influence our thoughts, memories and perceptions, not the other way round. The language you learn determines what you can think about.

2. Explain **two** versions of the Sapir–Whorf hypothesis. [4 marks]

Suggested answer: This theory has two versions. The strong form argues that language determines thought, so if a particular language has no words for a certain thought, object or idea, then people who speak that language will have no way of thinking about it. The language you learn, determines what you can think about.

The weak version says that language influences the way in which people think about things, but it does not completely determine what they think about. For example, it is possible for native English speakers to think about the different types of snow that were identified in the Inuit language even though they have not experienced the different types.

3. Describe and evaluate the Sapir–Whorf hypothesis. [9 marks]

Suggested answer: The Sapir–Whorf hypothesis suggests it is not possible to think about something you don't have words for. Language comes first and thought afterwards. There are two versions: the strong version suggests words determine our thoughts. If there are no words for a thought, object or idea then you can't think about it. Therefore, it is difficult to translate ideas from one language to another. In the weak version, words just influence thoughts. Words help to 'carve up' the world. However, you can still imagine something with no words for it. The weaker version is preferred. If the words we have for a concept or idea are limited, our ability to notice or recall that idea will be limited.

A weakness of this theory is that differences between cultures may have been exaggerated by researchers such as Boas. There are actually only two words for snow in Inuit culture and English probably has more words for different types of snow. This shows that the differences aren't that great, and challenges the conclusion that language may determine thought.

In addition to this, having more words for snow doesn't mean that the words came first. The Inuit language may have more words for snow because there is always lots of snow. This suggests that language develops because of the way we perceive our environment, which supports Piaget's view that thinking influences language.

In contrast to this, a strength is that the hypothesis explains the link between language and intelligence. Bernstein suggested that working-class children will always fall behind in school because their use of the restricted code will have a negative effect on their ability to think. This shows that language influences a particular type of thinking (intelligence).

Word count = 285

Topic 3: Language and thought: Our view of the world

Apply it

Read the item below and then answer the question that follows.

A group of psychology students were given a task where they had to read a personality profile of a man. Half of the students were also told he was a father whereas the others were not. An hour later, the students were asked to recall the man's details. Students who had been told that the man was a father were more likely to recall characteristics relating to him being caring and responsible than those who were not told he was a father.

Use your knowledge of the effect of language and thought on our view of the world to explain these results. [3 marks]

Suggested answer: Carmichael *et al.* found that participants who were given different descriptions of the same picture later drew a picture consistent with the label they were given. A similar thing happened in the above item as

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the descriptions of the man's characteristics were affected by whether he had been given the label of father or not. This shows that what we are told about somebody (language) affects how we remember them (thought).

Knowledge check

1. Psychologists have studied the recall of events in different cultures. Describe **one** finding from such research. [2 marks]

Suggested answer: Carmichael *et al.*'s study found that the memory of pictures was influenced by the verbal label that people are given. For example, people who saw two circles with a connecting line and read 'eyeglasses' drew the picture differently than those who had the description 'dumbbell'.

2. Explain **one** criticism of research into the variation in recall of events. [3 marks]

Suggested answer: One weakness is that Whorf's conclusions about the Hopi language were almost entirely based on just one individual, Naquayouma. Other people have argued that the way Hopi Indians recall events, and their understanding of past, present and future is not that much different from English speakers. This suggests that Whorf's conclusions lacked a firm basis in fact.

3. Describe and evaluate research into the recognition of colours in Native American cultures. [9 marks]

Suggested answer: Brown and Lenneberg found that the Zuni people have only one word for shades of yellow and orange and had difficulty recognising and recalling these colours compared to English speakers. Their lack of words for those two colours affected their ability to distinguish between them. This suggests that the difficulty distinguishing between yellow and orange could be because of a lack of words for those two colours in Zuni language. Roberson *et al.* found that the Berinmo people of New Guinea had only five words for different colours and had difficulty recalling and distinguishing between a variety of colours.

One weakness with research involving other cultures is that the participants may not have fully understood the task or researchers may have misunderstood the answers. For example, the Berinmo people may have been able to distinguish between the colours but didn't communicate this ability to the researcher because of a language barrier. This means that such research may lack validity.

Furthermore, another issue with this research is that some researchers have found the opposite – that people with different colour words were still equally good at recalling colour. Heider and Oliver tested the Dani of New Guinea who have only two words for colour: 'mola' and 'mili' (which basically correspond to light and dark). This suggests that their lack of colour words did not affect their ability to think about colour.

A strength of this research on the recognition of colours is it provides support for the Sapir-Whorf hypothesis. It shows that at least the weak version is correct.

Word count = 258

Topic 4: Human and animal communication: von Frisch's bee study

Apply it Research Methods

A researcher studied the distance 50 bees flew from their hive, giving distances to the nearest 10 metres: 60, 40, 30, 70, 50, 40, 80, 70, 30, 60, 60, 80, 30, 50, 90, 20, 40, 20, 70, 10, 90, 50, 40, 50, 70, 50, 40, 40, 60, 20, 30, 70, 20, 80, 40, 50, 60, 50, 80, 50, 70, 60, 30, 50, 40, 60, 30, 40, 40, 60.

1. Construct a frequency table from the above data. Use appropriate headings. [4 marks]

Suggested answer: A table to show the frequency of bees that flew different distances from the hive.

Distance from the hive (metres)	Frequency
10	1
20	4
30	6

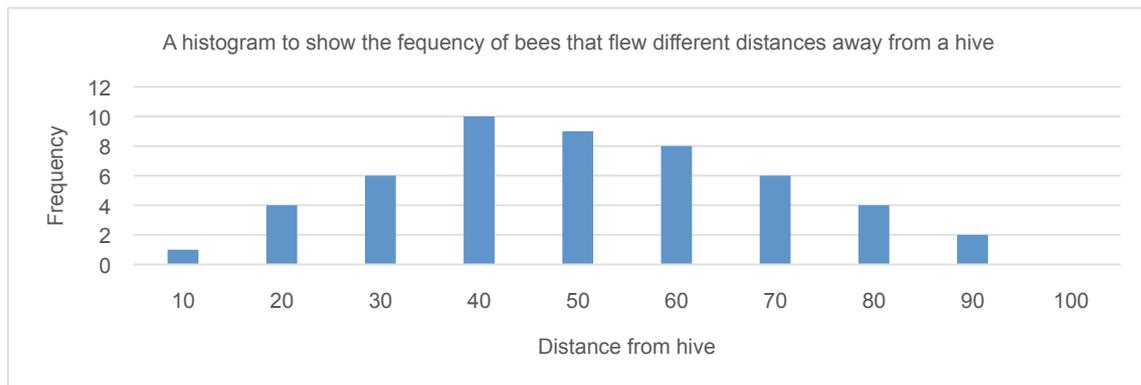
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40	10
50	9
60	8
70	6
80	4
90	2
100	0

2. Draw a histogram for the data. Include a title and label the axes. [4 marks]

Suggested answer: NB no spaces between bars



3. The researcher was interested in doing the study on a larger scale but did not have the resources to do it as there were approximately 4,150,000,000 bees in the UK which were too many to study. Express the total number of bees in the UK:

(a) To one significant figure. [1 mark]

Suggested answer: 4,000,000,000

(b) In standard form. [1 mark]

Suggested answer: 4.15×10^9

Knowledge check

1. What is meant by the term 'animal communication'? [2 marks]

Suggested answer: Animal communication is the exchange of information between animals within the same species using a variety of signals. Some of these signals are vocal (involve sound) – but some are visual or involve smell.

2. Describe the method von Frisch used in his bee study. [3 marks]

Suggested answer: von Frisch observed bees as they went about their daily business. However, he would sometimes change aspects of the bees' environment to study how this changed their behaviour. For example, von Frisch would put a food source close to the hive (within about 10–20 metres), as well as one further away (up to 300 metres).

3. Describe and evaluate the study into bees by Von Frisch. [9 marks]

Suggested answer: von Frisch put a food source close to the hive (within about 10–20 metres), as well as one further away (up to 300 metres). Over 20 years he made over 6000 observations. He found that worker bees tell the others where pollen is located by using two types of dance. One dance is the round dance which involves moving in

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a circle to indicate that food is less than 100 metres away. The other dance is the waggle dance – the bee moves in a figure of eight, wagging its abdomen on the straight line in the 'middle' of the eight. This line points at the source of pollen. Speed indicates distance. von Frisch also found that 60% of other bees went to food sources at the distance indicated by the dances.

A strength of this study is that von Frisch's work made an important contribution to science. People always knew that bees danced but had no understanding of the meaning of these movements. This shows how valuable his research was as it has improved our understanding of how these animals communicate.

A weakness of this research is the importance of sound was overlooked. Esch found that when bees performed dances in silence, other bees would not then go on and investigate food sources. This shows that sound-based signals also play a part in directing other bees.

Another weakness is that bees do not always respond to the waggle dance. Gould found that bees did not use the information from the waggle dance to fly to nectar if it was placed in a boat in the middle of a lake. This shows von Frisch's account was incomplete.

Word count = 277

Topic 5: Human versus animal communication

Apply it

Read the item below and then answer the question that follows.

Donny prefers the company of his dog Max to that of people as he finds it easier to understand the dog's behaviour. For example, when Max is happy he wags his tail whereas some people will smile even when they are talking about how unhappy they are.

Explain **one** difference between animal and human communication. Refer to Donny's experience in your answer. [3 marks]

Suggested answer: Animal communication uses single channels whereas human communication uses multiple channels. Donny prefers his dog Max because he uses just a single channel to show his emotion as in this case, he wags his tail to show that he is happy. In the above item Donny finds human communication confusing because the information people give from one channel (smiling) contradicts information from another channel (what they say).

Knowledge check

1. With reference to a specific type of animal, explain how communication is related to survival. [2 marks]

Suggested answer: Vervet monkeys produce specific sounds that warn other vervet monkeys of dangers – known as alarm calls. Such alarm calls may be a risk for the monkey making the sound but are important for the survival of members of the species.

2. Outline how animals communicate their territory to other animals. [2 marks]

Suggested answer: Many animals mark their territory using the signal of scent marking. They do this by spreading their urine, faeces or other naturally produced scents to discourage other animals from invading their territory. White rhinos lay their dung in piles to mark their territory.

3. Describe **two or more** properties of human communication not present in animal communication. [6 marks]

Suggested answer: Animals are much more restricted in how they use signals. Animal communication is a closed system whereas human language is an open system. In human language, words can be combined in completely new ways.

Human language can be expressed using a whole range of different methods or channels, like sign language or Braille, sending a text or an e-mail, or using social media to get a message across. This is not a feature of animal communication as animals tend to use single channels.

Humans can use their language to plan ahead and discuss future events (displacement). In contrast, animal communication tends to focus on things that are physically present in the environment, such as food sources or predators. Therefore, displacement is not a part of animal communication in the same way as it is part of human communication.

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Topic 6: Non-verbal communication: Eye contact

Apply it Research Methods

In a study on the role of eye contact in conversation, two people have a conversation. In one condition the listener looks at the floor, whilst in the other condition they maintain eye contact with the speaker. Two independent observers judge how many speech errors the speaker makes.

1. Identify **two** categories of behaviour that could be used to represent speech errors. [2 marks]

Suggested answer: Examples of some common speech errors could be: pauses, stuttering, mispronouncing words, using the wrong word or using 'fillers' like 'erm'.

2. Explain how the researcher could check interobserver reliability in the study. [2 marks]

Suggested answer: They could compare the responses of two separate observers by doing a correlation to see how similar the scores were in each category of behaviour observed.

3. Explain **one** way that the researcher could standardise the procedure in this study. [2 marks]

Suggested answer: They could have made sure that the participants are always talking about the same topic area when they are having a conversation with each other.

Knowledge check

1. What is meant by 'eye contact'? [2 marks]

Suggested answer: When two people look at each other's eyes at the same time. Eye contact has a number of roles in communication: regulating the flow of conversation, signalling attraction and expressing emotion.

2. Using an example, explain what is meant by 'non-verbal communication'. [3 marks]

Suggested answer: NVC means exchanging information without words. For example, communicating by using eye contact and facial expressions as well as more general body language. Such aspects of communication have an important role in relaying meaning to other people, such as hunched shoulders to show sadness.

3. Describe and evaluate the function of eye contact. [9 marks]

Suggested answer: The first function of eye contact is regulating the flow of conversation, as Kendon found that speakers looked away when they were about to speak and gave prolonged eye contact when about to finish. This shows eye contact encourages turn-taking in conversation. Another function is it is used to signal attraction. Conway found that people who use eye contact are judged as more attractive even with a negative facial expression. Eye contact is also used for signalling emotions, Adams and Kleck found participants judged emotions of joy and anger as more intense when shown a picture of someone gazing straight at them as opposed to gazing away.

A strength of this research is that studies can explain an important feature of autism. People with autism may have difficulty communicating with others because they do not use eye contact. Therefore, knowing the importance of eye contact means that people with autism could be taught these skills.

In contrast to this, an issue with this research relates to the use of rating scales to make judgements. Studies in this area rely on people rating their views of 'attractiveness' and 'intensity of emotion', and these are open to bias and interpretation. This suggests that studies of eye contact may produce subjective evidence.

Another weakness is that studies of eye contact also involve quite artificial tasks. In Kendon's study, participants were asked to get to know someone as part of the experiment. This means the findings may lack validity as they do not reflect what would happen in everyday life.

Word count = 255

Topic 7: Non-verbal communication: Body language

Apply it

Study the item below and then answer the question that follows.

Identify and briefly describe **one** feature of body language shown by the people in the picture which might indicate that they like each other. Refer to the method and results of **one** psychological investigation to support your answer. [5 marks]

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Suggested answer: One feature of body language that reveals liking for another person is touch. Fisher *et al.* found that a librarian who touched a student's hand when returning a book to the student was later rated by the student more positively than if the librarian didn't touch a student's hand. This relates to the above item as the older woman has her arm around the younger woman and they are both leaning towards each other. Such body contact would suggest that they like each other.

Knowledge check

1. What is meant by the term 'postural echo'? [2 marks]

Suggested answer: A similarity or mirroring of body positions by people in a social interaction.

2. Use your knowledge of psychology to explain how people use open posture in an everyday situation. [2 marks]

Suggested answer: Having an open posture means you are standing or sitting without your arms or legs being crossed. You can use an open posture in an interview to show you are listening and in agreement with what is being said.

3. Describe and evaluate research into body language. Refer to 'touch' in your answer. [9 marks]

Suggested answer: Fisher arranged for a librarian to hand books to female students in a library. Half of the students were touched lightly on the hand and half were not. When asked afterwards, those students who were touched spoke more positively about the librarian/library than those who were not. This shows that touch can affect our attitudes towards other people. McGinley got an experimenter to go up to people and have conversations with them using an open or closed posture. When questioned later, those people who saw an open posture described them as warm and friendly whilst those who saw a closed one viewed them as unfriendly and hostile. This suggests that posture influences our impression of people.

A strength of this research is that it can be applied to real-world situations. For example, people who are trying to create a good relationship with others should use an open posture, postural echo and touch. This shows the research is useful in everyday life.

A weakness is that the studies are not always well controlled. For example, in the library study there may have been other reasons why the participants liked or disliked the librarian aside from the presence or absence of touch. This is a problem for the validity of the results.

Another weakness is that research in this area raises ethical issues. For example, field experiments on postural echo and touch involved a lack of informed consent. It is also unclear if participants were debriefed. This could therefore affect the trust people have in psychologists.

Word count = 254

Topic 8: Non-verbal communication: Personal space

Apply it Research Methods

A study looked at gender and personal space in a local park. A female confederate sat on a park bench next to 10 participants who were female and 9 who were male. The researcher timed (in seconds) how long it took the person (participant) to move away from the bench:

Same gender: 59, 75, 60, 45, 70, 49, 52, 62, 75, 40.

Different gender: 20, 15, 28, 32, 12, 25, 38, 15, 19.

1. Identify the experimental design used in this study. Explain your answer. [2 mark]

Suggested answer: It was an independent groups design because there were separate participants in each condition of the study.

2. Explain **one** strength of the design you have identified in question 1. [2 marks]

Suggested answer: Order effects are not an issue as the participants only do one condition, so participants are less likely to be affected by things like practice.

3. Calculate the mean for each condition. Show your workings. [4 marks]

Suggested answer: Mean for same gender condition

$59 + 75 + 60 + 45 + 70 + 49 + 52 + 62 + 75 + 40 / 10 = 58.7$

Mean for different gender condition

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$$20 + 15 + 28 + 32 + 12 + 25 + 38 + 15 + 19 / 9 = 22.67$$

4. Draw a conclusion about the role that gender plays in personal space. Refer to the results of the above study in your answer. [2 marks]

Suggested answer: People feel less comfortable when somebody of the opposite sex sits next to them as the mean time taken for someone to leave the bench in this condition is less than half the mean it took for someone to leave when a member of the same sex sat next to them.

Knowledge check

1. What is meant by the term 'personal space'? [2 marks]

Suggested answer: Personal space is the distance we keep between ourselves and others in everyday life. It is like a bubble that we carry around with us. We feel uncomfortable when it is invaded.

2. Outline the way status affects personal space. [3 marks]

Suggested answer: Status might be defined as someone's rank or position within society or a workplace. For instance, two geography teachers in a secondary school would have similar status, whereas a student and the head teacher will have different status. Zahn found that people who have equal or similar status tend to maintain a closer personal space than those with unequal status.

3. Describe and evaluate how cultural differences and gender affect personal space. [9 marks]

Suggested answer: There are different cultural norms for personal space. Sommer observed groups of white English people and groups of Arab people in conversation. The English people were comfortable with a personal space of between 1 and 1.5 metres whereas for the Arab people it was much less. Men and women use their personal space differently as well. Men generally prefer a larger social distance when interacting with other men than women interacting with other women. There are also other gender differences. Byrne *et al.* found that when talking to friends, men prefer to sit opposite one another whilst women prefer to sit side-by-side.

A strength of this research is that it has proved useful in everyday life as if we know that particular groups of people prefer to maintain a larger personal space, we know to 'keep our distance'. Furthermore, doctors could use knowledge about cultural differences by using personal space to make their patients feel more at ease. Therefore, these studies have had a positive impact on the real world.

A weakness is that research into personal space only looks at one factor at a time. Several factors may be affecting personal space distances at the same time such as culture, gender and status. This makes research in this area too simplistic.

Another weakness is studies may use unrepresentative samples. It is difficult to use a sample of people in a personal space experiment that reflects all people within a culture, or all males and all females. This means we should be cautious in generalising the findings to everyone.

Word count = 259

Topic 9: Non-verbal behaviour: Darwin's evolutionary theory

Apply it Research Methods

Past research has suggested that people with dilated pupils are seen as more attractive. A lab experiment was carried out to investigate this. Participants were shown two pictures of the same woman. In one condition, the woman's pupils were of normal size whilst in the second condition, they were dilated. Each participant had to rate the attractiveness of each picture.

1. Write a suitable hypothesis for this investigation. [2 marks]

Suggested answer: The picture of the woman with dilated pupils is rated as more attractive than the picture of the woman with normal sized pupils. (a possible directional hypothesis)

The picture of the woman with dilated pupils is rated as different in terms of attractiveness than the picture of the woman with normal sized pupils. (a possible non-directional hypothesis)

2. Explain **one** strength of using a repeated measures design in this study. [2 marks]

Suggested answer: There are no participant variables as each participant is compared against themselves so we can be sure that any differences in terms of how attractive the picture is rated are due to pupil dilation rather than any individual differences in what counts as attractive.

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3. Order effects are an issue with studies like the one above. Explain how counterbalancing could have been carried out to reduce the impact of order effects in the above study. [3 marks]

Suggested answer: The group of participants could have been split into two separate groups. Both groups would still look at both pictures of the woman but one group would do the conditions in reverse order so in this condition, they would look at the picture with dilated pupils first and then the one with normal sized pupils afterwards. This would have reduced the impact that factors like practice and boredom can have on performance in the second condition.

Knowledge check

1. What is meant by the term 'adaptive'? [2 marks]

Suggested answer: Adaptive means any physical or psychological characteristic that enhances an individual's survival and reproduction, and so is likely to be naturally selected. Such characteristics are passed on to future generations.

2. Explain what is meant by the phrase 'non-verbal communication has evolved'. [2 marks]

Suggested answer: Non-verbal communication refers to signals that are used without words. The way that animals use such signals has changed over time because signals that are not adaptive are not naturally selected, and therefore disappear. Those that are adaptive (benefit the animals) remain in the gene pool.

3. Describe and evaluate Darwin's evolutionary theory. [9 marks]

Suggested answer: Darwin proposed the theory of natural selection, which is that genes for any behaviour that improve an animal's chances of survival and reproduction are naturally selected and more likely to be passed to the next generation. He believed that non-verbal behaviour has evolved in animals as a way to express emotion because it enhances survival (and thus reproduction). Baring teeth in a fight causes an animal to get scared and leave, and therefore both animals in the fight are more likely to survive. Therefore, the behaviour is adaptive as it helps protect survival of species. Behaviours that were adaptive to our distant ancestors like baring teeth are still used to show how we feel but may not serve the original adaptive purpose.

A strength is the theory is supported by research. Ekman *et al.* identified six primary emotions: surprise, fear, disgust, anger, happiness and sadness that are found in all people. If a behaviour is universal this suggests it is in our genes, supporting Darwin's evolutionary theory.

Another strength is that there is support from newborn baby studies. Babies are born with the ability to smile or maintain eye contact, which suggests that, because these behaviours are innate. This supports the idea that they have been selected by evolution to help the child's survival.

A weakness is that Darwin's theory can't explain cultural differences in non-verbal communication. Personal space and gestures differ from culture to culture. This suggests the theory doesn't explain all non-verbal communication.

Word count = 246

Topic 10: Non-verbal behaviour: Innate or learned?

Apply it

Study the conversation below and then answer the question that follows.

Kim: I think non-verbal behaviour is instinctive as neonates can show different facial expressions which they couldn't have learned.

Karen: I am not so sure as I have friends from Italy who have different mannerisms from me and my friends. For example, they stand much closer when talking to us.

Identify evidence from the above item that non-verbal behaviour is innate and/or learned. Use research to support your answer. [4 marks]

Suggested answer: Rosenstein and Oster found that young babies' faces showed disgust with new foods like citric acid, which supports the innate view because babies could not have learned this emotion as it would have been the first time they tasted lemons. This relates to what Kim says about facial expressions not being learned.

Karen says her friends from Italy have different mannerisms from her, which suggests that they have been learned. Social learning theory can explain this cultural difference as people observe what other people in their culture are doing (e.g. mannerisms) and copy those behaviours.

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Knowledge check

1. What is meant by the term 'neonate'? [1 mark]

Suggested answer: It means newborn babies.

2. Outline evidence that non-verbal behaviour is learned. [4 marks]

Suggested answer: According to Hall, people from contact cultures are comfortable with a smaller personal space whereas people from non-contact cultures maintain a larger distance between themselves and others. This is evidence of cultural differences, which must be learned rather than innate as, if they were innate behaviours, then people all over the world would behave the same.

Black has described how pointing one's finger can mean different things depending where you are in the world. Black said that pointing one's index finger is acceptable in Western culture to emphasise what is being said. However, in Hindu culture this is regarded as offensive, so Hindus tend to point with their thumbs. This shows that non-verbal behaviour may not be innate but is learned as it is the product of cultural norms.

3. Outline evidence that non-verbal behaviour is innate. [4 marks]

Suggested answer: Bowlby suggested that neonates (babies) are born with social releasers. These include non-verbal behaviours such as smiling and giving eye contact. Social releasers influence others – they 'make' others want to look after the baby, releasing a desire to offer care which will aid the baby's survival. This suggests that the behaviour is likely to be innate because it is adaptive and thus naturally selected.

Rosenstein and Oster gave babies who were a few weeks old tastes they had not experienced before. The babies showed a disgust reaction, particularly to very sour foods such as lemons. This suggests that facial expressions as a way of communicating emotions are likely to be innate because babies could not have learned this emotion as it would have been the first time they tasted lemons.

Topic 11: Non-verbal behaviour: Yuki's study of emoticons

Apply it Research Methods

A researcher wanted to investigate whether students preferred teachers that smiled more than those that didn't. Twenty A level students were approached in the sixth form common room and asked to take part. They were each given 30 pictures to look at, 15 of which had teachers smiling, whilst the other 15 had teachers not smiling. For each picture students had to state how much they liked the teacher on a scale of 1 to 10.

1. Explain how randomisation could have been used to reduce bias in this study. [2 marks]

Suggested answer: The pictures could have all been given a number and then all 30 numbers could be placed in a hat. Each number would then be selected to determine the order in which each picture would be seen by the participants. This is an example of using a random method to reduce any bias.

2. Identify the sampling method used and explain a weakness of this sampling method in relation to this study. [3 marks]

Suggested answer: Opportunity sampling. The sample is not representative of all students in the school but rather just those who happened to be around and might be the least studious ones! This makes it difficult to generalise the findings of the study.

3. Write a null hypothesis for this investigation. [2 marks]

Suggested answer: There is no difference in the liking ratings for pictures of teachers that smile and don't smile.

4. Identify one extraneous variable that could have been a problem in this study and explain how it could have been controlled. [3 marks]

Suggested answer: The students could have been influenced by the ratings that other students gave the teachers. This might have been controlled by having the students rate the pictures in separate rooms on their own.

Knowledge check

1. What is meant by an 'emoticon'? [2 marks]

Suggested answer: The word 'emoticon' is a combination of the words emotion and icon. It is a non-verbal way of expressing mood or emotion within a written communication, such as a text or email.

2. Outline the method used in Yuki's study into emoticons. [3 marks]

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Suggested answer: This was a cross-cultural study that involved students from Japan and America using an independent groups design. All participants were presented with a set of six emoticons. The emoticons featured different combinations of eyes and mouths. Some of the mouths were 'happy', some 'sad' and some 'neutral' (neither happy nor sad). This was the same for the eyes. The participants had to rate each emoticon for how happy they thought it was. This was done on a 9-point scale and the average ratings for each emoticon were worked out.

3. Describe and evaluate Yuki's study of emoticons. [9 marks]

Suggested answer: Yuki investigated whether there was a difference in how emoticons are understood by people in the East (Japan) and the West (America). He carried out a cross-cultural study with an independent groups design using students from Japan and from America. Six emoticons were shown with different combinations of eyes and mouths (sad, happy or neutral). Participants rated them for happiness using a 9-point scale. It was found that the Japanese gave higher ratings to faces with happy eyes than the Americans, even when the mouth was sad. Americans gave higher ratings when mouths were happy even when the eyes were sad. This suggests that cultural groups interpret facial expressions differently, which may be due to cultural norms and expectations.

A weakness of this study is that emoticons may not represent human faces. Emoticons do not include those tell-tale lines on people's faces which give us further information on how to interpret their eyes and mouth. This means that the results may lack relevance to everyday life.

Another weakness is the study only investigated two types of emotion. In everyday life, faces express a whole range of emotions – fear, surprise, disgust, etc. Therefore, the study does not give us insight into how the full range of emotional expressions are interpreted by people of different cultures.

A final weakness is that rating scales may not be the best method of measurement. Emotions are very complex and rating scales reduce emotion to a single score. Therefore Yuki *et al.* may have measured the interpretation of emotions in too simple a way.

Word count = 258

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Chapter 7 Brain and neuropsychology

Topic 1: The structure and function of the nervous system

Apply it Research Methods

A study on how prisoners responded to traumatic situations used a systematic sample of 50 prisoners from a prison population of 500. They had their heart rate measured whilst being shown a film of someone being murdered. They were also interviewed afterwards about how stressful they found the film.

1. Explain how the researcher would have recruited a systematic sample for this study. [2 marks]

Suggested answer: He could have obtained a list of all 500 prisoners and then selected every 10th person from the list.

2. Explain the difference between qualitative and quantitative methods in psychology. Refer to the above study in your answer. [3 marks]

Suggested answer: They differ in terms of the type of data they use. Quantitative methods use data that can be counted such as the prisoner's heart rate. Qualitative methods, on the other hand, use non-numerical data that can be expressed in words such as the participants' responses to how stressful they found the film.

Knowledge check

1. What is meant by the term 'somatic nervous system'? [1 mark]

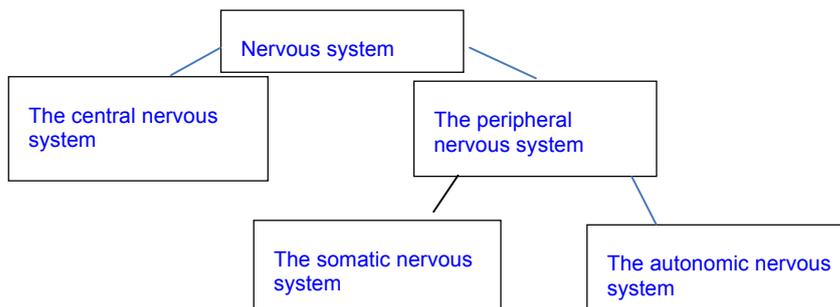
Suggested answer: The somatic nervous system transmits information from sense organs to the central nervous system (CNS). It also receives information from the CNS that directs muscles to act.

2. Explain the function of the peripheral nervous system. [3 marks]

Suggested answer: The peripheral nervous system (PNS) sends information to the central nervous system (CNS) from the outside world and transmits messages from the CNS to muscles and glands. The PNS is sub-divided into the autonomic nervous system (ANS) and the somatic nervous system (SNS).

3. Draw a diagram showing how the nervous system is structured. Include the following in your diagram: central nervous system, peripheral nervous system, somatic nervous system, autonomic nervous system. [4 marks]

Suggested answer:



Topic 2: The autonomic nervous system

Apply it

Read the item below and then answer the question that follows.

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Holly sees herself as a bit of a practical joker and decides to surprise her friend Tom by jumping out from behind the door when he walks into the room. Tom's reaction makes Holly feel bad as his face goes red and he starts breathing more heavily.

Use your knowledge of the autonomic nervous system and the fight or flight response to explain Tom's reaction to Holly's surprise. [4 marks]

Suggested answer: Tom's reaction to Holly's surprise relates to the sympathetic branch of the autonomic nervous system being triggered. This causes his adrenal glands to release adrenaline, which makes his heart beat faster, his face goes red and his breathing to become heavier.

This produces a fight or flight response to make an animal ready to stand and fight or to flee away from danger. The surprise has been interpreted as a threat and so causes these increases in physiological arousal which prepare him to fight or run away.

Knowledge check

1. Identify **three** bodily changes that occur during the fight or flight response. [3 marks]

Suggested answer: Pupils dilate, increased heart rate, increased breathing.

2. Explain what happens in the fight or flight response. [5 marks]

Suggested answer: The fight or flight response is the immediate physiological response of an animal when confronted with a threatening or stressful situation. The actions of the sympathetic division of the autonomic nervous system cause the body to become physiologically aroused because of the effects of the hormone adrenaline. This prepares the body to be able to fight the threat or run away by increasing heart rate and breathing, which causes the person to sweat more. All of these changes happen almost immediately after a threat is perceived. When the threat has passed, the parasympathetic division returns the body to a resting state. This reduces the activities of the body that were increased during fight or flight response. The person may feel hungry or thirsty having used up so much energy and because digestion is then stimulated.

3. Explain the function of the autonomic nervous system. [2 marks]

Suggested answer: The autonomic nervous system transmits information to and from internal bodily organs. It is 'autonomic' as the system operates involuntarily (i.e. it is automatic). It has two main divisions: the sympathetic and parasympathetic nervous systems.

Topic 3: The James–Lange theory of emotion

Apply it Research Methods

A study investigated how physiological arousal affects judgements of attractiveness. One group of participants were asked to run on the spot (high arousal condition) as they rated 10 photos for attractiveness (on a scale of 1 to 5). A second group were asked to rate attractiveness while swaying gently (low arousal condition).

1. Explain why the second group had to sway gently while completing the task. [3 marks]

Suggested answer: If they didn't do something while doing the rating task this might have acted as an extraneous variable because both groups have to be doing something – one is high arousal and one is low arousal.

2. Explain how the researcher could have standardised the procedures. [3 marks]

Suggested answer: He could have ensured that:

- All of the participants were tested by the same investigator.
- The same rating scale was used when assessing the attractiveness of each participant.

3. Explain **one** weakness of measuring attractiveness using a questionnaire. [2 marks]

Suggested answer: It may lack validity as it is reducing human behaviour (e.g. attractiveness) down to a score.

Knowledge check

1. Explain the role of the autonomic nervous system in the James–Lange theory of emotion. [3 marks]

Suggested answer: The James–Lange theory says it's the physical changes that occur first. The sympathetic division of the ANS is activated and this, in turn, leads to the release of adrenaline, creating physiological arousal,

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experienced as an increase in bodily activity such as a rise in our heart rate and blood pressure (the fight or flight response).

The labelling of the emotion comes afterwards. The brain interprets the physiological activity and decides whether the arousal is, for example, fear or love.

2. Explain **one** criticism of the James–Lange theory of emotion. [4 marks]

Suggested answer: One weakness of the theory is that it has been challenged by the Cannon–Bard theory which argues that we experience emotions at the same time as physiological arousal (they are simultaneous) and not one after the other. For example, we feel embarrassed (emotion) at the same time as we blush (physical reaction). Walter Cannon also argued that some physiological changes (for example, during exercise) do not necessarily lead to an emotion as the James–Lange theory would predict. Therefore, the Cannon–Bard theory draws attention to emotional situations that the James–Lange theory would struggle to explain.

3. Outline and evaluate the James–Lange theory of emotion. [9 marks]

Suggested answer: The theory states physiological arousal comes first and emotion after. An event causes physiological arousal in the following way: The hypothalamus activates the sympathetic division of the autonomic nervous system (ANS). Adrenaline is then released which creates physiological arousal. This is experienced as an increase in bodily activity such as a rise in our heart rate and blood pressure (the fight or flight response). The brain interprets the physiological activity which causes emotions. If there are no physiological changes then emotions are not experienced. For example, if you stand in front of your class and your heart rate doesn't increase, then you do not feel scared because there are no physiological changes.

One strength of the theory is there are real-life examples of emotions following physiological arousal. Emotional states seem to follow physiological arousal in cases such as phobias or panic disorders. This suggests that the emotion and avoidance occur as a result of the physiological reaction, as predicted by the theory.

A weakness is that it is challenged by the Cannon–Bard theory. We experience some emotions (e.g. embarrassment) at the same time as physiological arousal and not one after the other. Therefore, this theory can explain emotional situations that the James–Lange theory cannot.

Another weakness is that the theory is challenged by the two-factor theory. We need arousal plus social cues to correctly label the emotion we are feeling (Schachter and Singer). This means the James–Lange theory does not explain how a person 'decides' the emotion they are experiencing.

Word count = 253

Topic 4: Neuron structure and function

Apply it

Use your knowledge of synaptic transmission to explain how SSRI drugs work. Refer to the release and reuptake of neurotransmitters in your answer. [4 marks]

Suggested answer:

- An electrical impulse travelling along a neuron causes serotonin molecules to be released from the vesicles in the presynaptic neuron.
- The molecules cross the synaptic cleft and attach to the receptors on the postsynaptic neuron.
- SSRIs prevent any remaining serotonin being absorbed back into the presynaptic neuron, plus more serotonin may be released.
- This leads to more serotonin being available at the synaptic cleft, so more will attach to postsynaptic receptors and the postsynaptic neuron is more likely to fire and pass on messages that will increase mood.

Knowledge check

1. Explain the function of a motor and a relay neuron. [2 marks]

Suggested answer: Motor neurons carry messages from the central nervous system to effectors in our body, such as muscles and glands. They have short dendrites and long axons.

Relay neurons connect sensory neurons to motor neurons as the neurons do not connect directly. Relay neurons also connect to other relay neurons. They have short dendrites and short axons.

2. Outline how excitation and inhibition work together. [3 marks]

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Suggested answer: Excitation is where some neurotransmitters generally increase the positive charge of the next neuron, making it more likely to fire. Inhibition is where some neurotransmitters generally increase the negative charge of the next neuron, making it less likely to fire.

The summation of the two processes results in an overall negative or positive charge at the postsynaptic neuron and determines whether a message is sent or not.

3. Describe the process involved in synaptic transmission. Refer to the release and reuptake of neurotransmitters in your answer. [4 marks]

Suggested answer: Neurons communicate using neurotransmitters which are released from the presynaptic to the postsynaptic neuron across the synaptic cleft. Neurotransmitters are stored in vesicles at terminal buttons of the presynaptic neuron. An electrical signal releases neurotransmitters into the synaptic cleft.

Once the transmitter crosses the cleft, it is taken up by the next neuron at the postsynaptic receptor sites. These are located on the dendrites of the next neuron. If the summation of chemical signals is positive, the chemical message is turned back into an electrical impulse which sets off again down the neuron.

The chemical neurotransmitter left in the gap is broken down by enzymes and reabsorbed by the presynaptic neuron so it can be used again.

Topic 5: Hebb's theory of learning and neuronal growth

Apply it Research Methods

A researcher wanted to see the effect of environment on learning. One group (group 1) of rats were brought up in a stimulating environment that promoted neuronal growth whilst the other group (group 2) were brought up in an unstimulating environment. Both groups were then timed on how quickly they could escape from a maze.

1. Write a suitable alternative hypothesis for this study. [2 marks]

Suggested answer: Rats brought up in a stimulating environment escape from the maze more quickly than rats brought up in an unstimulating environment (a possible directional hypothesis).

The time taken for rats brought up in a stimulating environment to escape from the maze is different from the time taken by rats brought up in an unstimulating environment (a possible non-directional hypothesis).

2. Explain how the researcher might allocate rats to group 1 or group 2. [2 marks]

Suggested answer: The researcher could use randomisation. This is done by numbering each rat and putting their numbers in a hat and then drawing half of the numbers out, which will be the rats who go in group 1.

Knowledge check

1. What is meant by the term 'neuronal growth'? [2 marks]

Suggested answer: It is about the growing efficiency of neurons. During learning, groups of neurons called cell assemblies fire together. This leads to the neurons becoming more efficient. They change physically and grow so that they can manage the new learning more effectively, which is called neuronal growth.

2. Outline Hebb's theory of learning. [4 marks]

Suggested answer: Hebb suggested that synaptic connections in the brain become stronger the more they are used. This means that the brain is not fixed in structure, but that it is constantly changing and developing. Therefore the brain can adapt, change structure and form new connections as we learn. Hebb argued that learning leaves a trace in the brain, known as an 'engram'. The trace that learning leaves in the brain can be made permanent if we continually practise and rehearse the thing we are learning. During learning, groups of neurons, known as cell assemblies, fire together. The more this happens, the stronger the synaptic connections between them become.

3. Describe and evaluate Hebb's theory of neuronal growth. [9 marks]

Suggested answer: Hebb suggested that synaptic connections in the brain become stronger the more they are used. This means that the brain is not fixed in structure, but that it is constantly changing and developing. Therefore the brain can adapt, change structure and form new connections as we learn. Hebb argued that learning leaves a trace in the brain, known as an 'engram'. The trace that learning leaves in the brain can be made permanent if we continually practise and rehearse the thing we are learning. During learning, groups of neurons, known as cell assemblies, fire together. The more this happens, the stronger the synaptic connections between them become.

A strength of Hebb's theory is that it is scientific. Hebb explained learning in terms of brain function, which provided an objective basis for understanding behaviour. This shows that learning can be studied through brain processes.

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A further strength of Hebb's theory is it can be applied to education. He found that rats raised in stimulating settings were better able to find their way through mazes as adults. This could be applied to education by creating more stimulating environments to encourage learning.

A weakness with Hebb's theory is that it reduces learning to a neuronal level. This means that other levels of understanding are ignored, such as Piaget's ideas about how accommodation moves learning forwards. This is an issue as a more complete account of learning would discuss non-biological factors as well.

Word count = 239

Topic 6: Structure and localisation of function of the brain

Apply it

Read the item below and then answer the question that follows.

An accident meant that Fred's brain was damaged. He struggles to think clearly at times and finds it difficult to make future plans. He also can no longer move his right arm.

Use your knowledge of psychology to identify which area of his brain Fred damaged and on which side of his brain this damage occurred. Explain your answers. [4 marks]

Suggested answer: It looks like Fred has damaged his frontal lobe as this affects processes such as thinking and planning ahead. This could explain why he struggles to focus his thoughts or make future plans.

It also looks like he has damaged the left side of his brain as this controls the right side of his body, which is perhaps why he cannot move his right arm.

Knowledge check

1. Identify the location and the basic function of the occipital lobe. [2 marks]

Suggested answer: At the back of the brain is the occipital lobe which contains the visual area. Each eye sends information to the visual areas on each side of the brain (each hemisphere).

2. Use your knowledge of localisation of function to state what would happen if a person damaged the somatosensory area of their brain. [2 marks]

Suggested answer: Damage to the somatosensory cortex would mean the person would be less able to feel things like pain and changes in temperature.

3. Explain how knowledge about localisation of function has contributed to our understanding of behaviour. [6 marks]

Suggested answer: Localisation means that particular areas of the brain have particular functions and do particular jobs. This means that if a certain brain area becomes damaged – through illness or injury – then the function it controls may be affected or lost altogether.

This has contributed to our understanding of behaviour because we now understand that damage to the motor area in the left hemisphere affects the right side of the body. Damage to the visual area such as the left visual cortex may cause blindness in the right visual field of both eyes and damage to the auditory area may cause partial or total hearing loss.

In most people, the areas controlling language are in the left hemisphere only. This means that damage to the right side of the brain may not affect a person's language abilities all that much whereas damage to the left side may affect language quite significantly. Damage to the left temporal lobe may produce Wernicke's aphasia, which is difficulty understanding and producing language.

Topic 7: Penfield's study of the interpretive cortex

Apply it

Read the item below and then answer the question that follows.

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When I smell bacon, it triggers a memory of having breakfast at home as a child.

Use your knowledge of Penfield's study of the interpretive cortex to explain this experience. [3 marks]

Suggested answer: Penfield electrically stimulated different areas of the temporal lobe and found that this led to the vivid recall of specific memories. So the memory of bacon frying may stimulate an area of the temporal lobe and trigger this other memory.

Knowledge check

1. What is meant by the 'interpretive cortex'? [2 marks]

Suggested answer: The interpretive cortex is an area of the temporal lobe of the brain where interpretations of memories are stored, i.e. the emotional component of the memory.

2. Explain what Penfield's study of the interpretive cortex can tell us about localisation of function. [3 marks]

Suggested answer: Penfield concluded that the area of the temporal lobe he had stimulated must have a role in storing memories of previous events. He found that the interpretive cortex is the area that stores information on feelings. This therefore shows that different brain areas are responsible for specific functions and behaviours, i.e. the function is localised.

3. Describe and evaluate Penfield's study of the interpretive cortex. [9 marks]

Suggested answer: Penfield operated on people to treat their severe epilepsy. His technique meant that a conscious patient's brain was exposed and areas could be electrically stimulated. Patients could then report their thoughts and sensations. With temporal lobe stimulation, patients recalled experiences or recalled feelings associated with the experiences, including experiences of déjà vu. The same memory was recalled each time the same area of the brain was stimulated. This suggests that memories of previous experiences are stored in the temporal lobe. An associated area stores the personal meaning of the experience. Penfield called this the interpretive cortex which is the area that stores information on feelings.

A strength is that Penfield used a very precise method of studying the brain. He could stimulate the exact same area of the brain repeatedly and patients could report their experiences. This enabled him to produce an accurate 'map' of brain function.

A weakness is that the participants in the study made up an unusual sample. Participants were all patients suffering from severe epilepsy so it may be that the experience of epilepsy had changed the structure and function of their brains in some way. This could mean that any findings produced were unusual and not reflective of people with non-epileptic brains.

Another weakness is that Penfield's later research did not always support his original findings. Only 40 of the 520 patients he studied reported vivid memories when their temporal lobe was stimulated. This suggests that the interpretive cortex does not always respond in the same way.

Word count = 252

Topic 8: An Introduction to neurophysiology

Apply it Research Methods

A man fell off a ladder, landing on his head. Afterwards, he experienced memory difficulties and was studied in depth by a psychologist.

1. Explain why a case study would have been suitable to investigate this person's brain. [2 marks]

Suggested answer: People who have memory problems caused by brain damage are rare and so it would be difficult to do an experiment on them as you would struggle to recruit the number of people you needed. Therefore a case study is better.

2. Explain **one** weakness of using case studies like this one to study topics such as memory. [2 marks]

Suggested answer: It is an in-depth study of just one individual. We don't know what his memory was like before the accident. So the study may not tell us about how all people's memories work. There are issues with generalising the findings of the study to the rest of the population.

3. Explain how qualitative data could have been collected in this study. [2 marks]

Suggested answer: The man's relatives and friends could have been interviewed as well in order to discover what they observed about his memory before and after the accident.

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Knowledge check

1. What is meant by the term 'cognitive neuroscience'? [2 marks]

Suggested answer: Cognitive neuroscience is the scientific study of how biological structures, such as areas of the brain, influence or control mental processes. For instance, research has shown how the hippocampus is linked to the formation of memories in the brain.

2. Briefly outline how stroke or injury can affect motor abilities and behaviour. [4 marks]

Suggested answer: Damage to the motor area through stroke or injury in the left hemisphere will affect movement on the right side of the body, and vice versa. A person with such damage may struggle with fine movements, such as picking up a pen, or more complex movements, such as walking.

Another example of a behaviour that can be damaged by stroke or other injury is language. In most people, the language centres are in the left hemisphere. Damage to these language areas affects the ability to use language. This is called 'aphasia' which means an inability to understand or use language.

3. Describe how the structure and function of the brain relates to behaviour and cognition. [6 marks]

Suggested answer: Different structures within the brain control different behaviours. For instance, the frontal lobe includes the motor area which controls and coordinates movement.

The amygdala is an area located deep within the temporal lobe. It plays a key role in processing emotions, such as fear and pleasure in humans and other animals. The amygdala has also been linked to aggressive behaviour.

There is lots of evidence to show that different aspects of memory are located in particular parts of the brain. For example, Tulving's study suggests that episodic and semantic memories are separate forms of long-term memory. It also seems likely that these types of memory are located in different parts of the brain. When participants thought about semantic memories, there was greater concentration of blood flow towards the back of the brain (the posterior cortex).

Word count = 249

Topic 9: Scanning techniques to identify brain functioning

Apply it

Read the item below and then answer the question that follows.

Misha is discussing which type of brain scan would be best to investigate the cause of her 5-year-old son's learning difficulties. Ultimately, she wants a technique that is safe but one that will also give her the most precise images of her son's brain. She is a wealthy woman who is happy to fund her son's treatment.

Identify a brain scanning technique to use with Misha's son and explain the strengths and weaknesses of using it to investigate the cause of her son's learning difficulties. [5 marks]

Suggested answer: An fMRI scan would provide clear images of the brain, which is important as she wants them to be precise.

Images also show the brain in action, which would be important when studying learning processes.

She is a wealthy woman so would be able to afford such an expensive technique.

However, the person having the scan would have to sit very still and a 5-year-old boy may struggle to do this.

In addition, there is a time lag between brain activity and the image appearing on the brain scan, which makes any images lack a little accuracy as they are not produced in real time.

Knowledge check

1. Outline **one** difference between a PET and an fMRI scan. [3 marks]

Suggested answer: One difference is that PET scans use a radioactive substance whereas fMRI scans involve no radioactivity because they measure blood oxygen levels using radio signals.

2. Explain what is involved in taking an fMRI scan and how it has been used to identify brain functioning. [4 marks]

Suggested answer: A person is placed in a scanner and fMRI measures changes in blood oxygen levels in the brain. These are picked up using radio signals and these signals produce 3-D images on a computer screen.

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The images produced by fMRI are extremely clear and can show brain activity to the millimetre. This is very useful for seeing in detail what areas of the brain are active whilst a person engages in a certain task

3. Describe and evaluate CT and PET scans as techniques used to identify brain functioning. [9 marks]

Suggested answer: In a CT scan, the brain is examined by taking a large number of X-rays of it. During the scan, the person lies inside a large doughnut-shaped scanner. The scanner is slowly rotated around them so images are taken from many different angles. The images are put together to build up a detailed picture.

CT scans are useful for revealing abnormal structures in the brain such as tumours or structural damage. The quality of the images provided by the CT scan is much higher than that of traditional X-rays.

However, a weakness is that CT scans require more radiation than traditional X-rays, and the more detailed and complex the CT scan is, the more radiation exposure the patient receives. This means that CT scans cannot be used often.

PET scans work by measuring metabolic activity within the brain, so they record which parts are most active. The person is injected with radioactive glucose called a radiotracer. When taken up by the brain, the areas that are most active will absorb more of it and this is sent to a computer.

A strength of PET scans is they show localisation of function. For instance, the person can be asked to look at a picture, solve a jigsaw puzzle, or think about family holidays they went on as a child, and the linked brain area can be identified.

However, a weakness is there are ethical issues to do with the injection of radioactive glucose. Therefore, the technique can only be used a few times.

Word count = 252

Topic 10: Tulving's 'gold' memory study

Apply it Research Methods

A psychologist used brain scans to investigate the location of different types of long-term memories in the brain. He interviewed his participants about the terrorist attack on the World Trade Centre in America in 2001. He measured their brain activity in relation to two types of questions: those that related to what they were doing when they heard about the event (episodic memory) and also facts about the event (semantic memory).

1. Write a suitable question that could provide the researcher with quantitative data about episodic memory. Explain why it would produce this type of data. [3 marks]

Suggested answer: Do you remember what you were doing when the terrorist attack on the World Trade Centre occurred? Please circle the appropriate response Yes/ No.

This would produce quantitative data because it can be counted so you could easily see how many participants remembered what they were doing when the terrorist attack occurred.

2. Explain **one** strength and **one** weakness of using an interview for this investigation. [2 marks + 2 marks]

Suggested answer: A strength is that the researcher can clarify any questions that the participant does not understand. This means that their responses are more likely to accurately reflect their recollection of the events and facts about the attack on the World Trade Centre.

A weakness is that participants may not be truthful as they may say they remember more about what they were doing at the time they heard the news about the terrorist attack than they actually did. This means their answers could be affected by social desirability bias.

3. In total 20 questions were asked about episodic memories and on 17 of these there was greater blood flow in the frontal lobe than in the posterior cortex. Express this as a percentage. Show your workings. [2 marks]

Suggested answer: $17/20 \times 100 = 85\%$

Knowledge check

1. Outline the results of Tulving's 'gold' memory study. [3 marks]

Suggested answer: Tulving found clear differences in blood flow patterns for three of the six participants.

When participants thought about semantic memories, there was greater concentration of blood flow towards the back of the brain (the posterior cortex). When participants thought about episodic memories, there was greater concentration of blood flow towards the front of the brain (the frontal lobe).

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2. Describe what Tulving's 'gold' study of can tell us about neuroscience. [3 marks]

Suggested answer: Tulving's study is related to neuroscience because it relates brain activity to behaviour. Tulving investigated episodic and semantic memories as separate forms of long-term memory. It also seems likely that these types of memory are located in different parts of the brain – the anterior cortex and posterior cortex. This is related to neuroscience because it supports the idea that memory has a biological basis, and that different types of memory are localised in different areas of the brain.

3. Describe and evaluate Tulving's 'gold' memory study. [9 marks]

Suggested answer: Tulving wanted to see whether episodic and semantic memories were located in different areas of the brain. Six participants were injected with radioactive gold. A repeated measures design was used. Each participant took part in four episodic trials (thought of personal experiences) and four semantic trials (thought of facts). The blood flow in the brain was monitored on a PET scan. It was found that different blood flow patterns were found in three out of six participants. Semantic memories created a greater concentration of blood flow in the posterior cortex. Episodic memories created greater flow in the anterior cortex. This shows that episodic and semantic memories are localised in different parts of the brain and memory has a biological basis.

A strength is that the study produced scientific evidence. This is because it used evidence from brain scans that is difficult to fake, unlike other psychological investigations where you can be less sure that participants are behaving genuinely. This means that Tulving produced unbiased research.

On the other hand, a weakness of the study was that the sample was restricted. There were only six participants in the experiment, including Tulving himself. The differences in blood flow for episodic and semantic memories were seen in only three participants. This means the results were inconclusive as few people showed the same pattern of blood flow, so it is difficult to generalise these findings to all people.

An additional weakness is that episodic and semantic memories are often very similar. Memories for personal events also contain facts and knowledge about the world so it is difficult to work out which type of memory is being studied. This may explain why the evidence from Tulving's study was inconclusive.

Word count = 256

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Chapter 8 Psychological problems

Topic 1: An introduction to mental health

Apply it

Read the item below and then answer the question that follows.

Javid has schizophrenia, a mental problem. In the past he may have been called 'a lunatic', resulting in people treating him in a negative way. Nowadays he would be said to have a mental health problem – a label that causes others to treat him more favourably as they view him as having a problem that can be treated.

What is meant by the phrase 'lessening of social stigma' in relation to mental health? Refer to Javid in your answer. [4 marks]

Suggested answer: The phrase relates to the idea that if people, such as Javid, are given a label like schizophrenic then people may discriminate against them due to the negative expectations that such a label brings. The label acts as a stigma. Referring to Javid as having mental health problems means he is less likely to be stigmatised as people will see him as having an illness that can be treated. So the new label lessens social stigma.

Knowledge check

1. Describe how the incidence of significant mental health problems changes over time. [3 marks]

Suggested answer: It is reported that for adults in the UK in 2007, 24% were accessing treatment, whereas in 2014 this had risen to 37%. MIND estimates that by 2030 approximately two million more adults in the UK will have mental health problems than there were in 2013.

More women than men are treated for mental health problems and this gender gap is widening.

2. Briefly outline **two** cultural variations in beliefs about mental health problems. [4 marks]

Suggested answer: In India and Africa, more people report hearing voices and they regard it as a positive experience, whereas in the Western world 'hearing voices' is categorised as an auditory hallucination and is seen as a symptom of schizophrenia.

Another example of a cultural difference is eating disorders, which for many years have been quite rare outside the Western world.

3. Explain how increased challenges of modern living, such as isolation, have led to mental health problems. [2 marks]

Suggested answer: Lower income households are more likely to have mental health problems compared to higher income households. Also social isolation for people living in cities is a problem.

Topic 2: Effects of mental health problems

Apply it Research Methods

1. What type of distribution is displayed in the graph? [1 mark]

Suggested answer: A normal distribution.

2. What is the relationship between performance and anxiety shown in the graph. [3 marks]

Suggested answer: Too little or too much anxiety has a negative effect on performance which is why the performance scores are very low at each end of the graph. A moderate amount of anxiety leads to the best performance so most people (the mode/median/mean) have scores in the middle of the anxiety scale.

3. Give the graph a suitable title. [1 mark]

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Suggested answer: A graph showing the relationship between performance and anxiety.

Knowledge check

1. Explain why mental health problems may have a negative impact on relationships. [3 marks]

Suggested answer: Mental health problems often affect a patient's ability to talk to others as someone who is depressed may become very focused on themselves and find it difficult to understand what other people are feeling. Mental health problems are also isolating as patients tend to avoid being with other people because they feel bad about themselves and may fear being judged.

2. Explain the effect that mental health problems can have on a person's physical well-being. [3 marks]

Suggested answer: Your psychological state has an impact on your physical well-being. For example, people who are stressed often get more colds and other illnesses. Usually the immune system can cope in keeping the invaders at bay but, if you are anxious or stressed, your body produces a hormone called cortisol. This hormone prevents the immune system functioning as well as it should and physical illness is more likely.

3. Describe the effects that significant mental health problems can have on society. [4 marks]

Suggested answer: One aspect of mental health problems that may affect society is the link between mental health and crime. Research does indicate an increased risk of violence amongst mentally disturbed patients, perhaps as much as four times greater than in the 'normal' population.

The effect on society is also financial. Looking after people with mental health problems costs a considerable amount of money. A recent government report, the McCrone report, suggests that the direct cost of mental health in England is about £22 billion a year.

Topic 3: Depression

Apply it

Read the conversation below and then answer the questions that follow.

John: I am worried about Ivy as she hasn't seemed like her normal self lately. She usually loves playing hockey with her friends but last time she played she looked bored and had to go home early as she felt tired and 'flat'.

Daisy: I agree, I watched a TV programme about someone with depression and they acted in a similar way to Ivy.

1. Identify **two** symptoms of depression. Refer to Ivy's behaviour in your answer. [4 marks]

Suggested answer: One symptom is loss of interest in pleasurable activities such as playing hockey with her friends, which does not make Ivy happy like it normally does.

Another symptom is reduced energy levels as she felt tired which would have a knock-on effect on her social life if she does not have the energy to do activities involving other people.

2. Which type of depression is Ivy experiencing? Explain your answer. [3 marks]

Suggested answer: Unipolar depression, as she only is experiencing one extreme emotional state which is low mood. If she had bipolar depression she would have periods of mania and normal mood but this is not the case as she just appears to be unhappy.

Knowledge check

1. Distinguish between depression and sadness. [3 marks]

Suggested answer: Depression is characterised by an abnormally low mood and low energy levels whereas sadness is a normal human emotion. It is a natural reaction to certain experiences such as the death of a beloved pet. In contrast, depression is deeper and stops the ability to function.

2. Explain how the International Classification of Diseases is used to diagnose unipolar depression. [4 marks]

Suggested answer: The ICD lists symptoms of unipolar depression and it is up to clinicians to identify symptoms in a patient. In order for a diagnosis to be made the clinician must have noted two out of the three key symptoms – low mood, loss of interest and reduced energy levels.

In addition, two other symptoms must have been observed such as a reduced energy level, change in sleep patterns or ideas of self-harm.

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Symptoms should be present all or most of the time, and for longer than two weeks.

3. Describe **two** characteristics of depression. [4 marks]

Suggested answer: One characteristic is a low mood. This is a depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g. feels sad) or observation made by others (e.g. appears tearful).

A second characteristic is a reduced energy level, making the person lethargic. This has a knock-on effect, with sufferers tending to withdraw from work, education and social life.

Topic 4: Theories of depression: Biological explanation

Apply it Research Methods

A study was carried out to see whether eating foods that raise serotonin levels would decrease depression. A group of 80 patients diagnosed with depression were recruited for the study and their depression level was measured at the start of the study. Half of the patients were given a high serotonin diet for six months. At the end of six months all patients' depression levels were measured again.

1. Identify a sampling method that could be used in this study and explain **one** strength of using this method. [3 marks]

Suggested answer: Opportunity sampling could be used. This is a very convenient sampling method as you just use the most readily available group of people, which in this case could have been the patients at a particular clinic.

2. Explain how the participants could have been allocated to each condition. [3 marks]

Suggested answer: Randomisation could be used. All 80 of the participants' names could have been placed in a hat and then 40 could have been picked out to go in each condition.

3. Identify **one** extraneous variable that could affect the outcome of the study and explain how it could be controlled. [3 marks]

Suggested answer: The participants might have taken other drugs or food that would affect their serotonin levels. To deal with this, the patients' diets and drug habits would need to be monitored, maybe by asking all participants to keep a record of what they ate or by using only patients in hospital.

Knowledge check

1. Explain what is meant by the term 'serotonin'. [2 marks]

Suggested answer: Serotonin is a neurotransmitter. It regulates mood, and low levels are associated with depression.

2. With reference to depression, explain what is meant by an 'imbalance of neurotransmitters'. [4 marks]

Suggested answer: An 'imbalance of neurotransmitters' means that these biochemical substances are not present in the right quantities at the synapse – there is either too much or too little.

In the case of depression, levels of serotonin in the synaptic cleft are too low, which means that mood-relevant information is not passed to the postsynaptic neuron. The effect is a lower mood.

3. Describe and evaluate the biological explanation of depression. Refer to the influence of nature in your answer. [9 marks]

Suggested answer: The biological explanation of depression focuses on physical influences (usually determined by nature). This means that the explanation suggests that depression isn't caused by other people or influences on the way we think, instead it is caused by inherited genes that produce imbalanced levels of the neurotransmitter serotonin. Messages travel along a neuron electrically and are transmitted chemically across the synapse via neurotransmitters. Low levels of serotonin mean less stimulation of the postsynaptic neuron, resulting in a low mood. This affects memory, sleep and appetite, which is linked to the characteristics of depression, e.g. lack of concentration, disturbed sleep and reduced appetite.

One strength of the biological explanation of depression is that it has supporting research evidence. McNeal and Cimbalic found lower levels of serotonin in people with depression. This suggests that there is a link between low levels of serotonin and depression which supports the biological explanation.

One weakness is low levels of serotonin could be an effect of being depressed. Thinking sad thoughts and having difficult experiences could cause low serotonin levels. Therefore, low levels of serotonin may be an effect of psychological experiences rather than the cause, so may not be biological (due to nature).

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Another weakness is that depression may not be solely caused by abnormal levels of neurotransmitters. Some people with low levels of serotonin don't have depression and some people with depression don't have low levels of serotonin. This means that the neurotransmitter (nature) explanation isn't enough on its own.

Word count = 246

Topic 5: Theories of depression: Psychological explanation

Apply it

A magazine article explained depression as being like seeing a glass as half empty instead of half full.

Explain how this article relates to the psychological explanation of depression. Refer to negative schemas in your answer. [3 marks]

Suggested answer: Having negative schemas means that you are more likely to interpret information about yourself and your life in a negative way. This means you would see the glass as half empty because that is a negative view.

So the psychological explanation is that the preference for negative interpretations is what leads to depression because the world looks less good because of your negative schemas.

Knowledge check

1. What is meant by a 'negative schema' in relation to depression? [2 marks]

Suggested answer: A negative schema means you are likely to interpret all information about the world and yourself in an unfavourable way and have a 'glass is half empty' way of thinking, which makes a person depressed.

2. With reference to an example, explain how attributions could cause depression. [4 marks]

Suggested answer: Attribution is the process of explaining causes of behaviour. When we observe someone else's behaviour, we unconsciously think of explanations for their behaviour, i.e. we attribute causes. We also know ourselves in this way. Some people have a depressive or negative attributional style. For example, a person who bakes a cake for their child's birthday and when they cut a slice it's still uncooked in the middle and they think to themselves that everything they do goes wrong. Such attributions make it difficult to see that things can change and there is hope, so the result is depression.

3. Outline and evaluate the psychological explanation of depression. [9 marks]

Suggested answer: Depression may be caused by irrational thinking. When a person is depressed they focus on the negative and ignore positives. This is partly due to negative schemas. Having a negative self-schema means you are likely to interpret all information about yourself in a negative way. Attributions also create depression. Seligman proposed that some people have a negative attributional style. If people make negative internal, stable and global attributions they are more likely to become depressed. The result is depression. Seligman also proposed the idea of learned helplessness – that we learn this negative attributional style through experiences where escape from negative experiences was not possible so you learn to give up. The result is again depression.

One strength of this explanation is there is support for learned helplessness. Seligman has demonstrated the process of learned helplessness where dogs learned to react to challenge by 'giving up'. Therefore, this research supports his explanation of depression due to negative attributions.

Another strength is that irrational thinking is a cognitive explanation which leads to ways of treating depression through cognitive behavioural therapy. People learn to replace irrational thinking with rational thinking to help relieve depression. Therefore, the explanation leads to successful ways to help people with depression.

On the other hand, one weakness is that negative beliefs may simply be realistic rather than depressing. Alloy and Abramson found that depressed people gave more accurate estimates of the likelihood of a disaster than 'normal' people. They suggested that depressed people may be 'sadder but wiser'. This means that a negative attributional style may sometimes be a good thing.

Word count = 263

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Topic 6: Therapies for depression: Antidepressant medication

Apply it

Read the item below and then answer the question that follows.

Emma is unsure about whether to continue taking antidepressants to treat her depression. She has been taking them for two months and they haven't made a difference. Her friend Nelly suggests that something as complex as depression is more than just a chemical imbalance in her brain so taking pills won't fix it, especially as they can make you feel sick and give you problems with your sleep.

Briefly evaluate antidepressants as a treatment for depression. Refer to the above conversation between Emma and Nelly in your answer. [5 marks]

Suggested answer: Nelly's friend says that something as complex as depression is more than just a chemical imbalance in the brain, which suggests that antidepressants are a reductionist approach as there may be other psychological causes they do not treat.

Another issue is that these drugs have side effects such as sickness and sleep problems which could discourage Emma from taking them in the long term.

Their effectiveness is also questionable, which could explain why they haven't made a difference to her after two months. Research suggests they may not be any better than a placebo, so perhaps Emma would be better off getting some alternative treatment for her illness.

Knowledge check

1. What is meant by an 'antidepressant medication'? [2 marks]

Suggested answer: Antidepressant medications are a group of drugs which increase the production of serotonin and/or noradrenaline, and reduce symptoms of depression.

2. Distinguish between reductionism and holism in relation to antidepressant medication. [4 marks]

Suggested answer: Reductionism refers to the belief that human behaviour is best explained by breaking it down into smaller constituent parts. Holism refers to the belief that our understanding of human behaviour is more complete if we consider the 'bigger picture' rather than focusing on the constituent parts.

The use of an antidepressant medication suggests that neurotransmitters are the only factor that causes depression. In other words, this reduces depression to the action of neurotransmitters alone and doesn't consider other factors. A more holistic approach would focus on the whole person using a combined form of therapy.

3. Outline and evaluate antidepressant medication as a therapy for depression. [9 marks]

Suggested answer: Low levels of serotonin may cause depression, therefore increasing serotonin levels may alleviate the symptoms of depression. SSRIs are a type of antidepressant that selectively target serotonin at the synapse and aim to increase amounts in the synapse. Serotonin is stored at the end of a transmitting (presynaptic) neuron in sacs called vesicles. The electrical signal travelling through the neuron causes the vesicles to release serotonin into the synaptic cleft. Serotonin locks into the postsynaptic receptors, chemically transmitting the signal from the presynaptic neuron. Normally serotonin is taken back into the presynaptic neuron, broken down and reused. SSRIs block this reuptake so when new serotonin is released it adds to the amount held in the synaptic cleft which increases the amount of serotonin and raises a person's mood.

One weakness is SSRIs can have serious side effects. The side effects include nausea, insomnia, and, most seriously, suicidal thoughts. Side effects mean that people stop taking the drugs, which reduces the effectiveness of the drug therapy.

An additional weakness of antidepressant medication is that the evidence for the effectiveness of them is questionable. Asbert found that the serotonin levels of depressed people may not actually be that different from the normal population. This suggests that the effectiveness of the drug may not be related to serotonin. It may be a placebo effect.

A further weakness of antidepressant medication is that it is a reductionist approach to the treatment of mental illness. Antidepressant medication targets serotonin (and sometimes noradrenaline) so focuses on only one kind of factor. This suggests that other treatments are not necessary but a more successful treatment might include both biological and psychological approaches (a holistic approach).

Word count = 278

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Topic 7: Therapies for depression: CBT

Apply it Research Methods

A study was carried out to see which technique proved most effective at treating depression – 200 patients with depression were treated with one of four techniques. The table below displays the number of patients who showed an improvement in their symptoms after 6 weeks.

Technique	1	2	3	4
Number of patients who improved after 6 weeks	25	30	10	48
Total number of patients	50	40	30	80

1. What percentage of those given technique 1 showed an overall improvement in their symptoms? Show your workings. [2 marks]

Suggested answer: $25/50 \times 100 = 50\%$

2. Which of the four techniques was the most effective treatment for depression? [2 marks]

Suggested answer: Technique 2 was most effective as 75% improved.

Effectiveness:

Technique 1 = $25/50 \times 100 = 50\%$

Technique 2 = $30/40 \times 100 = 75\%$

Technique 3 = $10/30 \times 100 = 33\%$

Technique 4 = $48/80 \times 100 = 60\%$

3. Calculate the percentage of patients who didn't improve from any of the four techniques. Show your workings and round your answer up to the nearest whole number. [4 marks]

Suggested answer: 44% did not improve.

$25 + 10 + 20 + 32 = 87$ (total of patients who did not improve)

$50 + 40 + 30 + 80 = 200$ (overall number of patients)

$87/200 \times 100 = 43.5\%$ rounded up = 44%

Knowledge check

1. Explain how CBT improves mental health. [4 marks]

Suggested answer: CBT focuses on what a client thinks. Negative, irrational or faulty thinking causes depression because people tend to catastrophise and think in all-or-nothing terms. The aim for the therapist is to therefore change this to rational thinking to reduce depression. Disputing can be used to challenge the client's irrational thoughts and then more rational thinking leads to greater self-belief and self-liking.

CBT also aims to change behaviour indirectly, for example by using behavioural activation where a pleasant activity is planned each day. This creates more positive emotions and mood.

2. Explain **one** criticism of using CBT to treat depression. [4 marks]

Suggested answer: One weakness is that some people are not willing to spend the considerable amount of time and thought that is required for successful CBT. Typically, a client will spend months meeting with their therapist once a week, and also doing homework in between sessions. Taking medication such as SSRIs is much quicker and you just have to remember to take the pill. CBT involves a willingness to think about yourself and also to be prepared to change. This means that many people drop out of CBT treatments or fail to engage sufficiently to gain any benefits.

3. Describe and evaluate CBT as a therapy for depression. [9 marks]

Suggested answer: One key element of CBT is that it focuses on what a client thinks. Good mental health is the result of rational thinking. Poor mental health, such as depression, results from negative, irrational or faulty thinking. The aim of therapist is to change this to rational thinking to reduce depression. More rational thinking leads to greater

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self-belief and self-liking. Any negative emotions experienced are recorded in a 'thought diary', where the client also records the 'automatic' thoughts created by these emotions. The client rates how much they believe in these thoughts. A rational response to the automatic thoughts is then recorded and rated. CBT also aims to change behaviour indirectly, for example by using behavioural activation where a pleasant activity is planned each day. This creates more positive emotions and mood.

One strength of using CBT to treat depression is that it has lasting effectiveness. The 'tools' learned in CBT to help challenge irrational thoughts can help the client deal with future episodes of depression. Therefore, this therapy offers a long-term solution where they can draw on the skills they have learned in the future.

One weakness is that it takes a long time and thought for CBT to be successful. Therapy takes months, homework is expected so a lot of effort is needed in comparison to just taking a pill. This means that many people drop out or fail to engage enough for it to work.

Another strength of CBT is that it is holistic. CBT focuses on treating the whole person and what they think/feel. This may be preferable to drug treatment because it deals with the core symptoms of depression (e.g. feeling sad).

Word count = 276

Topic 8: Therapies for depression: Wiles' study

Apply it Research Methods

In order to test the effectiveness of antidepressants, a sample of undergraduates who had depression were either given an antidepressant or a placebo (a pill that did nothing). All assumed they were taking an antidepressant. Mood was measured before the study and again six months later to get a mood improvement score.

1. Write a null hypothesis for this study. [2 marks]

Suggested answer: There is no difference in the mood improvement scores of participants given antidepressants and those given a placebo.

2. Identify **one** ethical issue in this study and explain how it could be dealt with. [2 marks]

Suggested answer: Deception is an ethical issue as the participants all thought they were being given antidepressants. This could have been dealt with by telling them at the start of the study that some participants would receive a placebo (just debriefing them at the end of the study would not be a sufficient way to deal with this deception).

3. This study used an independent groups design. Explain **one** weakness of using this type of design in this study. [3 marks]

Suggested answer: There are participant variables in independent groups design which means that individual differences could have affected the results and therefore affected any conclusions drawn. In this case the patients in one group might have been more depressed than the other group and that might explain poorer improvement in one group.

Knowledge check

1. Outline the method Wiles used in her study into the effectiveness of CBT. [3 marks]

Suggested answer: The study recruited 469 participants from Bristol, Exeter and Glasgow belonging to 73 different GP practices. The study involved patients who had treatment-resistant depression, i.e. they had been taking antidepressant medication for more than six weeks and still showed symptoms of clinical depression. Patients were randomly allocated to one of two conditions where they either took antidepressants only or antidepressants and CBT. Improvement was assessed by measuring symptoms of depression using the Beck Depression Inventory.

2. Explain what Wiles' study shows about the effectiveness of CBT. [3 marks]

Suggested answer: The study shows that CBT is effective in treating patients who do not respond to antidepressants. This is because those taking antidepressants and CBT continued to show much greater levels of recovery and a greater chance of remission than those in the antidepressant only group. This shows that CBT is a useful addition to treatment. CBT plus antidepressant medication is more effective in reducing depressive symptoms than antidepressant medication alone.

3. Describe and evaluate Wiles' study into the effectiveness of CBT. [9 marks]

Suggested answer: The study recruited 469 participants from Bristol, Exeter and Glasgow belonging to 73 different GP practices. The study involved patients who had treatment-resistant depression, i.e. they had been taking antidepressant medication for more than six weeks and still showed symptoms of clinical depression. Patients were

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randomly allocated to one of two conditions where they either took antidepressants only or antidepressants and CBT. Improvement was assessed using the Beck Depression Inventory (BDI) before and after treatment. After six months the number who had more than 50% reduction in symptoms was about 20% for usual care and about 50% for usual care and CBT. After 12 months those having usual care and CBT continued to show greater levels of recovery. This shows that CBT plus antidepressant medication is more effective in reducing depressive symptoms than medication alone.

One strength of the study is that extraneous variables were carefully controlled. The two groups had the same average depression score at the start and participants were randomly allocated to groups through a computer. This means that we can conclude that changes in the dependent variable (reduction in symptoms) were not affected by extraneous variables.

One weakness is the use of self-report methods to determine levels of depression. Some people might have underestimated how sad they feel and others might have overestimated. This questions the validity of the information collected about depression.

Another strength of the study is that it is focused on developing a useful therapy. The study shows that a more holistic approach to treating depression is more successful than antidepressant medication alone which is reductionist. Such real-world usefulness is one of the main reasons for conducting research.

Word count = 275

Topic 9: Addiction

Apply it

Read the item below and then answer the question that follows.

Gary loves to drink alcohol because of the 'high' that it gives him. His job has been difficult recently so having a few drinks helps him forget the negative events of the day. He tried stopping this habit but he found he was constantly craving a drink.

Distinguish between dependence and addiction. Refer to Gary's behaviour in your answer. [4 marks]

Suggested answer: Dependence relates to doing something because you rely on it and you want to avoid withdrawal symptoms. Gary is dependent on alcohol as he uses it to help him deal with his difficult job (reliance) and also finds he constantly craves a drink when he stops drinking alcohol (withdrawal).

Addiction includes dependence but also has additional characteristics as well. Gary also loves drinking, which suggests that he is also addicted to alcohol as it gives him a buzz and helps him escape from the reality of his job.

Knowledge check

1. Using an example, explain what is meant by 'dependence'. [3 marks]

Suggested answer: Dependence is indicated either by a compulsion to keep taking a drug or continue a behaviour (psychological dependence), or it is indicated by withdrawal symptoms (physical dependence).

For example, a person may become dependent on pain medication. The pain they experience makes it impossible to lead a normal life without the medication. There is a psychological reliance on the substance/activity. The person may also have a physical dependence on the pain medication and experience withdrawal symptoms if they stop taking it.

2. Distinguish between substance misuse and substance abuse. [3 marks]

Suggested answer: Substance misuse occurs when a person uses a drug in the wrong way or for the wrong purpose whereas substance abuse occurs when someone uses a drug for a bad purpose, i.e. to get 'high' rather than as a 'real' form of medication. The difference therefore is the person's intentions when using a substance.

3. Explain how the International Classification of Diseases is used to diagnose addiction. [4 marks]

Suggested answer: The International Classification of Diseases (ICD-10) has a category called 'Mental and behavioural disorders due to psychoactive substance abuse disorders'. A diagnosis of addiction is usually made only if three or more characteristics have been present together at some time during the previous year.

There are six characteristics of addiction, this includes persisting despite harm, so the individual continues to take the substance despite clear evidence of harmful consequences.

Another characteristic is a difficulty in controlling use, where the individual may have difficulty stopping usage and/or limiting the levels of use.

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Topic 10: Theories of addiction: Biological explanation

Apply it

Read the item below and then answer the question that follows.

Darren and his identical twin James' lives have turned out in a very different way. Darren is an alcoholic whilst his brother is not. Although they both went to the same schools when they were younger, Darren ended up being badly bullied, something that his mum reckoned had a profound effect on him. Sadly, alcoholism runs in their family and she feels that the bullying Darren experienced triggered his urge to drink.

Use the biological explanation of addiction to explain Darren's alcoholism. [4 marks]

Suggested answer: The biological explanation suggests that addiction is due to hereditary factors. The fact that alcoholism runs in their family suggests Darren's alcoholism is inherited – however, his identical twin James did not inherit it despite having the same genes.

The diathesis explanation would suggest that both Darren and James would have inherited a vulnerability to addiction but the reason why Darren became an alcoholic and James didn't is because Darren was bullied in school. This negative experience acted as a trigger for Darren's alcoholism. Although his brother had the same genes and vulnerability level, James' life experiences were more positive, which is why his life turned out in a different way.

Knowledge check

1. Explain how genetic vulnerability can influence addiction. [3 marks]

Suggested answer: Very few genes have an all or nothing effect on behaviour. One gene does not make the difference to whether, for example, you become addicted to alcohol or not. Multiple genes are involved and, moreover, genes do not cause the disorder they simply create a vulnerability, i.e. they increase the likelihood of an addiction. The diathesis-stress explanation proposes that a genetic vulnerability (nature) is only expressed if a person's life stresses and experiences (nurture) act as a trigger.

2. Describe the conclusion of **one** study that investigated alcohol abuse. [2 marks]

Suggested answer: The Kaij study suggests that alcoholism is related to hereditary factors. The data from the study supports the idea of a vulnerability because identical (MZ) twins were more likely to both be alcoholic than non-identical (DZ) twins. The increased social problems among alcoholic twins suggests that there are environmental factors that contribute to alcoholism.

3. Outline and evaluate the biological explanation of addiction. Refer to Kaij's twin study of alcohol abuse in your answer. [9 marks]

Suggested answer: Kaij wanted to see whether alcoholism was hereditary. Male twins from Sweden were identified from twins registered with the temperance board. Twins and close relatives were interviewed, to collect information about drinking habits. 48 of the twins were identified as MZ and 126 as DZ. It was found that 61% of the MZ twins were both alcoholic whereas only 39% of the DZ twins were. Twins with social problems were overrepresented among the temperance board registrants. This shows alcohol abuse is related to genetic factors but it is a vulnerability because, if it was entirely genetic, we would expect all MZ twins to be the same. If it was entirely due to environment we would expect no difference between MZ and DZ twins.

One weakness of Kaij's twin study is that there were flaws in the design of the study. Temperance board data only includes drinkers who made a public display of their alcohol abuse. This means that the results lack validity.

One strength is support from later research. Kendler *et al.* conducted a well-controlled study using a similar but larger sample of over 2,500 twins. It was found that MZ twins were more likely to both be alcoholics than DZ twins. Research generally supports the view that genetic factors have a major influence on alcoholism for both males and females (Prescott *et al.*).

Another weakness with biological explanations of addiction is that they may be misleading. People assume that if you inherit certain genes, then addiction is inevitable but this is not the case as nurture also plays a role. It is therefore very important to fully understand the implications of genetic research.

Word count = 257

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Topic 11: Theories of addiction: Psychological explanation

Apply it Research Methods

A psychologist conducted a study to see whether exposure to films that glorify addiction was more likely to cause people to smoke. They selected twenty films that showed addiction in a positive light and asked people to indicate which films they had seen and also to say if they smoked and how many cigarettes a day on average. They found that the more of the selected films that people had seen, the more cigarettes they smoked.

1. Identify the **two** co-variables in this correlational study. [2 marks]

Suggested answer: Number of films watched and number of cigarettes smoked.

2. Explain **one** strength of using correlational analysis in this investigation. [2 marks]

Suggested answer: Correlations are useful at the start of the research process to see if two variables are related so that then researchers can do further investigations into the impact of watching films that glorify addiction on people smoking.

3. Describe the type of correlation the researchers found. [2 marks]

Suggested answer: A positive correlation as both variables increased together – the more films people watched about glorifying addiction, the more they smoked.

Knowledge check

1. What is meant by the term 'peer influence'? [2 marks]

Suggested answer: Peer influence concerns the effect that our peers have on us. Peers are people who, for example, share our interests and are of similar age, social status and background to ourselves.

2. Explain **one** way the psychological explanation of addiction can be evaluated. [4 marks]

Suggested answer: One strength of peer influence as an explanation of addiction is that there is research support. Simons-Morton and Farhat reviewed 40 studies into the relationship between peers and smoking and found that all but one showed a positive correlation between the two factors. A correlation does not mean that the peer influence caused the addictive behaviour but at the very least it suggests that peer influences are a risk factor. This shows a strong relationship between peers and addiction.

3. Outline and evaluate the psychological explanation of addiction. Refer to nurture in your answer. [9 marks]

Suggested answer: Peers are people who are equal in terms of, for example, age and they can also influence a person to become addicted. Bandura's social learning theory states we learn how to behave and think by observing what others do and we imitate them, especially if they are rewarded, because we want to be accepted by them. This is an example of a nurture influence – the influence of experience coming from the social environment. Furthermore, adolescents may feel 'pressure' to conform to the social norms of their peer group, another environmental/social influence. Finally, peers influence addictive behaviour because they provide opportunities for an individual to smoke or use alcohol.

One strength of peer influence as an explanation of addiction is that there is research support. Simons-Morton and Farhat reviewed 40 studies and found that all but one showed a positive correlation between peers and smoking. This shows a strong relationship between peers and addiction.

A further strength of the peer influence explanation is its real-world application. Social norms programmes have had more success than just teaching resistance skills (Hansen and Graham). Thus there is a value in peer influence explanations.

In contrast to this, one weakness is peers may not be influencers. Individuals may be actively selecting others who are like them rather than conforming to social norms. This means that addictive behaviours shared within a friendship group happen as a consequence of addiction rather than the group causing the addiction through social norms and group pressure.

Word count = 246

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Topic 12: Theories for addiction: Aversion therapy

Apply it

Read the item below and then answer the questions that follow.

Annie takes her netball career seriously, which is why she knows she must cut out fast food from her diet. She recognises that she has an addiction and so is willing to try aversion therapy even though she has heard that it can be painful.

1. Briefly explain how aversion therapy would be used to treat Annie's addiction to fast food. [3 marks]

Suggested answer: One way would be to give her electric shocks whenever she ate fast food or looked at pictures of fast food. Eventually she would associate the pain of the shocks with the fast food, which would discourage her from eating it in the future. Fast food would therefore become the conditioned stimulus and pain would be the conditioned response.

2. Briefly evaluate aversion therapy. Refer to the above item in your answer. [4 marks]

Suggested answer: Annie has heard that aversion therapy is unpleasant as the electric shocks are painful. This means that many patients give up before the therapy has had any effect on their behaviour. This makes the therapy ineffective unless you are very strong-willed.

The long-term benefits are questionable. In a long-term follow-up McConaghy *et al.* found aversion therapy was no more effective than a placebo. So even if Annie found a dislike of fast foods while doing the therapy, she might find this disappeared in the long run, which limits the effectiveness of the therapy.

Knowledge check

1. Briefly explain why aversion therapy could be used as a holistic treatment for addiction. [2 marks]

Suggested answer: Aversion therapy can be combined with CBT for greater effectiveness. Aversion therapy deals with the addictive behaviour directly, but other issues can be addressed by CBT such as how a person feels/thinks. This is therefore a better way to treat the whole person rather than simply discourage the addiction.

2. With reference to an example of an addiction, explain the way aversion therapy works as a therapy for addiction. [4 marks]

Suggested answer: Aversion therapy is based on the principles of classical conditioning. The aim is that an addict will associate their addiction with something unpleasant and then will avoid the addictive substance. In treating alcoholism, the alcoholic is given a drug that causes them to vomit, for example the drug Antabuse. Just before the patient vomits, they are given an alcoholic drink. Treatment involves several repetitions to strengthen the association between the neutral stimulus (alcohol) and the unconditioned stimulus (Antabuse). After repeated pairing, the alcohol becomes a conditioned stimulus causing vomiting (the conditioned response). After conditioning, alcohol is associated with something unpleasant and thus avoided.

3. Outline and evaluate aversion therapy as a method to improve mental health. [9 marks]

Suggested answer: Aversion therapy is where the patient is exposed to a stimulus while simultaneously being subjected to some form of discomfort. It uses classical conditioning which is learning by association. The stimulus becomes associated with the discomfort, which means it is avoided in the future. If the stimulus is related to an addiction, this means the individual should avoid the addictive substance or behaviour in the future. In a smoking addiction the unconditioned stimulus is intensive smoking which creates feelings of disgust and nausea. These feelings are then associated with 'normal' smoking so that when the smoker looks at a cigarette they feel nausea (now a conditioned response).

One weakness is addicts may abandon therapy as it's unpleasant. Many addicts drop out before the treatment is completed as the aversive stimulus has to be negative. This problem means it is difficult to assess the effectiveness of the treatment because, in research studies, the participants who stay in a study tend to be the ones who cope well.

Another weakness is that benefits of aversion therapy seem to be short term rather than long term. In a long-term follow-up McConaghy *et al.* found aversion therapy was no more effective than a placebo. Covert sensitisation was better. This suggests aversion therapy lacks effectiveness.

There are positives to aversion therapy as it can be combined with CBT in a holistic way. Aversion therapy gets rid of the immediate urge to use the addictive substance whilst CBT provides longer-lasting support with a person's feelings/thinking. This provides a longer-term solution to the addiction.

Word count = 257

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Topic 13: Theories for addiction: Self-management

Apply it Research Methods

A researcher accessed the NHS database for all of the patients who had sought help to stop smoking. 50% of those who had used CBT had stopped for more than a year, 30% of those who had attended a self-help group had stopped for a year and 10% of those in a control group who had no treatment had also stopped for a year.

1. Put the results in a suitable table. [2 marks]

Suggested answer:

	CBT	Self-help	Control group
% of people who quit smoking for more than one year.	50	30	10

2. Identify whether primary or secondary data used in the study. Explain your answer. [2 marks]

Suggested answer: Secondary, as the researcher did not collect the data themselves for this study but used data collected by the NHS database for their own purposes.

3. Identify **one** ethical issue in this study and explain how it would be dealt with. [3 marks]

Suggested answer: Confidentiality is an issue here. This could be dealt with by not revealing the identities of the participants in the study when the results were published in order to preserve their anonymity.

Knowledge check

1. Explain what is meant by a 'self-help group'. [2 marks]

Suggested answer: Self-help groups are composed of people who share the same problems and regard each other as 'peers'. The 12-step programme is a peer-sharing model where peers offer help and support to each other so it's an example of a 'self-help' approach.

2. Explain how a self-management programme can be used to improve mental health. [4 marks]

Suggested answer: Addiction is a mental health problem. One of the ways that has been used to help people with addictions is a self-management programme such as the 12-step recovery programme developed by Alcoholics Anonymous (AA). This programme focuses on giving control to a higher power and letting go of your own will. The person accepts things they have done, and the members of the group and the higher power listen to the confession to accept the 'sinner'. Recovery is a lifelong process where the group supports each other.

3. Outline and evaluate a self-management programme for addiction. [9 marks]

Suggested answer: Alcoholics Anonymous (AA) has developed a self-management programme called the 12-step recovery programme. One key element is giving control to a higher power and letting go of your own will. The person accepts things they have done, and most importantly shares their sense of guilt about their addiction with others. By sharing guilt the higher power and the others in the group forgive the 'sinner'. This forgiveness means the sinner can forgive themselves. Recovery is a lifelong process where the group supports each other. They can call other members in case of relapse. Some programmes avoid the religious element of surrendering to a high power.

One weakness is poor quality research on the effectiveness of the 12-step programme. The AA reported in 2007 that 33% of its 8000 North American members have remained sober for ten years or more but this doesn't include how many left without success. This suggests that it is difficult to get clear evidence on effectiveness.

Another weakness is that the 12-step programme may only be effective for certain types of people. Dropout rates are high, suggesting that the self-help approach is demanding, requiring high motivation. This means such self-management programmes may offer a limited approach.

However, one strength is that the 12-step recovery programme focuses on the whole person. Many steps are concerned with emotions, particularly guilt, together with providing social support to help a person cope with their emotions. This can be contrasted with more reductionist programmes, such as aversion therapy which just target stimulus-response links.

Word count = 253