

Study Psychology

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A-Level Psychology Practice Paper MARK SCHEME

This is a practice paper intended for revision following the **EDEXCEL** specification.

Paper 3: Psychological Skills

2 hours



Research Methods

1. a. AO2 (2 marks)

Description of one way the behavioural category of 'aggressive' behaviour could be operationalised. This includes specific suggestions for how this aggression would be measured through observation. Examples include; fighting, punching, biting, hitting. **For example: One way the behavioural category of 'aggressive' behaviour could be operationalised is by counting the number of times a chimpanzee is seen to hit another chimpanzee with force or aggression. This would have to be clearly displayed as a negative behaviour with the chimpanzee showing their teeth or disgruntled aggression in their facial expressions. This would have to be observed as a key difference compared to playful hitting or fighting to be recorded objectively.**

Other reasonable marking points gain credit.

b. AO2 (2 marks)

Explanation of what the data in **table 1** shows about the differences between males and females and their 'aggressive behaviour over other males in the group'. Examples include; difference in data - males (16), females (3), suggesting difference in aggressive behaviour in the group. Must relate to the context of this study. **For example: The data in table 1 shows that male chimpanzees demonstrated more aggressive behaviour over other males in the group (total number 16), compared to females (total number 3). This suggests that male chimpanzees are more aggressive at asserting their dominance over other males in the group. They could be demonstrating alpha male behaviour as less females showed aggression.**

Other reasonable marking points gain credit.

c. AO2 (1 mark) AO3 (1 mark)

Outline of one strength of conducting a naturalistic observation in the context of this study. Examples include; high ecological validity, mundane realism, usefulness. **For example: One strength of conducting a naturalistic observation in this study is there is high ecological validity. This is the extent to which the setting or environment reflects real-life. In this study all the chimpanzees were studied in their natural habitat in the zoo where they lived. This is likely to give a realistic view of how the chimpanzees would normally behave. This means that the male chimpanzees were acting in a natural way.**

Other reasonable marking points gain credit.

d. AO2 (2 marks)

Definition of what is meant by event sampling, in the context of this study. Examples include; recording all behaviour that is observed during the entire event. **For example:** *Event sampling is where researchers record every behaviour they see during the entire observation. That means any behaviour which occurs in the observation is recorded. In this study all the chimpanzees' behaviour was recorded over the course of the 3 days, in both morning and afternoon sessions.*

Other reasonable marking points gain credit.

e. AO2 (2 marks)

One suggestion of how the psychologist could improve the reliability of this observation. Examples include; control, standardisation, inter-observer reliability. **For example:** *One way the psychologist could improve the reliability of this observation is by using more than one observer to record the data from the categories of behaviour listed in the tally chart. If both observers agree on the behaviour displayed this would give the study high inter-observer reliability.*

Other reasonable marking points gain credit.

f. AO2 (3 marks)

Outline of the three correct reasons why a Chi-Squared test is appropriate in this investigation; must mention - test of difference, experimental design and level of measurement (e.g. nominal). **For example:** *A chi-squared test is the most appropriate statistical test as the researchers are looking for a difference between the chimpanzees using an independent groups design (separate groups of males and females) and they are recording nominal data from the categories in the observation tally chart.*

Other reasonable marking points gain credit.

g. AO2 (1 mark)

1 mark for the correct value of the calculated degrees of freedom figure; 1.

For example:

$$df = (r - 1)(c - 1)$$

$$df = (2 - 1) \times (2 - 1)$$

$$df = 1$$

h. AO2 (2 marks)

A correct significance statement to explain the result determined by the critical value in the table (e.g. 2.71). **For example:** *The calculated value of the chi-squared test was 2.093 which is less than the critical value of 2.71 (for a one-tailed test, when $p < 0.05$, $df = 1$). Therefore, this result is not significant as the calculated value is less than the critical value, so the research hypothesis would be rejected and the null hypothesis accepted.*

Other reasonable marking points gain credit.

i. AO2 (1 mark)

Brief outline of one conclusion that could be made about social dominance in chimpanzees. Must be in context of the results. Examples include; aggressive behaviour is more likely in male chimpanzees, aggressive behaviour is less likely in female chimpanzees, males display more dominance over females in the group. **For example:** *One conclusion that can be made about social dominance in chimpanzees is that although males generally display more aggressive behaviour over other males in the group and show more evidence of dominance over females in the group, this is not significant enough to say all male chimpanzees would behave like this. This limits the conclusions that can be made from the results of this investigation.*

Other reasonable marking points gain credit.

2. a. AO2 (2 marks)

Outline of how the researchers could use volunteer sampling to gather a sample of 20 student participants in this study. Examples include; advertisement/ posters in colleges or university campuses, volunteers are selected by random from all student respondents, a sample of 20 selected. **For example:** *The researchers could place a poster in the student areas of a sixth form college, asking for volunteers for their investigation into colour and mood. They could leave a contact email or telephone number at the bottom, so students can get in touch. A sample of 20 participants would need to be collected at random from all the respondents to the poster. This could be done by placing all names in a hat and randomly selecting 20 students as required.*

Other reasonable marking points gain credit.

b. AO2 (2 marks)

Outline of one conclusion about feelings of mood after seeing the coloured pictures, using the mean data in table 2. Statement must be a conclusion and not a finding. **For example:** *One conclusion which can be made about feelings of mood after seeing the coloured pictures is that people tend to report greater feelings of happiness when shown blue coloured pictures like the boat on the ocean. The study showed*

the mean for this picture to be much greater than all the others (e.g. mean of 62) suggesting this colour was preferred by people.

Other reasonable marking points gain credit.

c. AO2 (2 marks)

One reason to explain the differences in the standard deviation scores seen in **table 2**. Examples include; personal preference, personality, subjective opinion, social desirability. **For example: *One reason for the differences seen in the standard deviation scores in table 2, is that there could be individual differences. For example, there may be personal preference regarding participants' ratings of happiness after seeing the coloured pictures. For example, despite the mean for the blue picture being the greatest, the standard deviation is the largest, suggesting more variation in the spread of scores, particularly when compared against the other coloured pictures.***

Other reasonable marking points gain credit.

d. AO2 (1 mark)

Suggestion of one way the researchers could improve this study. Examples include; reliability, validity, control over extraneous variables, qualitative data collection. **For example: *One way the researcher could improve this study is to include a method of collecting qualitative data such as open-ended questions. These would provide a more detailed insight into why mood changes in response to the coloured pictures, increasing the validity.***

Other reasonable marking points gain credit.

Review of Studies

3. a. AO2 (2 marks)

Correct calculation of the percentage (%) for boys who said 'Yes; listen to advice' based on the data in table 3. Answers must be calculated using the data for question 1 (total = 14). **For example: The percentage (%) for boys who said 'Yes; listen to advice' when comparing responses to question 1 is 86%.**

b. AO2 (3 marks), AO3 (3 marks)

Up to three marks for applying social identity theory to the findings of the study (3 AO2). Up to three marks for judging/ justifying how social identity theory supports the study (3 AO3). Examples for AO2 include; social identities based on Tajfel & Turner (1979/ 1986), social categorisation, in-group/ out-group formation, social identification, social comparison. Examples for AO3 include; evidence from the responses to the two questions (listen to advice and copies behaviour of peers), differences in the data in table 3 to show comparisons. **For example: The social identity theory supports this study in that our social identity is linked to the social groups we belong to and we build our sense of self-esteem through group membership and the acceptance of others. Developing a positive sense of self-esteem from group membership helps us feel valued as individuals. The boys could have categorised themselves into in-groups (peers) and out-groups (other boys). This will create an 'us' and 'them' mentality amongst the boys, particularly at the influential age of 12 years old. Evidence of this is in the responses to the two questions in the study. For example, the findings show that more boys responded 'yes' to the question about whether they listen to the advice of their friends. This shows they feel an allegiance to their in-group as 12 of the boys said yes and only 2 boys said no to this question. The boys could also have identified with the other boys in their group, sharing similar experiences and adopting the values and beliefs of their in-group. This could be apparent in their shared behaviour or appearance, creating a new social identity as a member of the in-group. The boys may act in similar ways and could imitate the behaviour of others in their in-group. Evidence of this is in the boys responses to question two, which asked them whether they copy the behaviour of their peers. More boys (9) answered 'yes' to this question stating they do copy the behaviour of their peers. Once the boys have developed a social identity, they are more likely to compare themselves with others in the out-group. They might boost their sense of self-esteem by making comparisons between the in-group and out-group. The boys might view their in-group as more superior, and attribute positive traits to other members of the group. This might increase the likelihood of them imitating the behaviour of the other boys in their group. Evidence of this comes from the responses to question two where 9 boys compared to 5 boys said they were more likely to copy the behaviour of their peers. One problem with this sample of boys is they all come from a year 7 class at high school and may have formed friendships based on existing relationships**

from previous schools where they were pupils in year 6. This means the in-groups and out-groups may have already been established, which could act as a confounding variable on the results.

Other reasonable marking points gain credit.

4. AO1 (6 marks), AO3 (10 marks)

To evaluate the classic studies by Sherif (1954/61) and Watson and Rayner (1920) in terms of reductionism. Examples include; manipulation of variables, conditions, contributing factors, holism.

For example:

Watson & Rayner studied the case of Little Albert, at 9-months of age a healthy and happy infant. They were investigating the principles of classical conditioning, which is learning through association. They wanted to see if they could condition a fear of an animal (e.g. white rat) by pairing it with a loud noise, by striking a steel bar. They also wanted to explore if a conditioned emotional response could be established, would it transfer to other animals or other objects (could it be generalised). Experimental testing began when Albert was 11 months old. It was felt that Albert would face frightening noises at some stage in his life and that the study was not too unethical to conduct. **Watson and Rayner** conditioned Little Albert by striking the steel bar each time Albert was presented with the white rat. The steel bar was the unconditioned stimulus (UCS) creating an unconditioned response (UCR) of fear at the beginning. This was then paired over time with the white rat, which was a neutral stimulus (NS) and over time, became the conditioned stimulus (CS), creating a conditioned response (CR) of fear alone. **Watson and Rayner** successfully conditioned Little Albert, as evidence showed that when he was presented with the rat he would cry and try to crawl away quickly. Five days later this procedure was repeated with other white objects like a rabbit, and Little Albert showed stimulus generalisation by responding in the same way. **Watson and Rayner** argued that the process of classical conditioning was the one reason for Little Albert's response. They collected most of the data from the control over the conditions in the laboratory. They were able to manipulate specific variables such as the rat or noise from the steel bar. This is a reductionist view as they assumed that Little Albert's behaviour was only caused by their manipulation of the materials used in the conditioning process. They claimed that the response of fear was based on the simple explanation of stimulus-response (S-R). This idea ignores any other factors like biological or cognitive processes. As they did not know Little Albert from birth there may have been other factors which influenced his behaviour in the study. This means there could be other factors such as personality or temperament or simply being unfamiliar with the lab, or feeling uncomfortable with the researchers, which contributed to his fear response. However, **Watson and Rayner** would argue that Little Albert was selected on the whole for seeming being unemotional and his stability was one of the principal reasons for using him as a participant in this test. **Watson and Rayner** could substantiate their claims as much of the case study data from the observations were video and audio recorded in the lab. Adopting a reductionist view from the findings from **Watson and Rayner** allows for a better understanding of how phobias or fear responses are classically conditioned. In contrast, **Sherif's** study into inter-group conflict with boys could be viewed more holistically. They conducted a field experiment at Robber's Cave State Park, with 22 boys aged 11 years old. Initially the boys were kept in two separate camps unaware of each other's presence. They spent their time creating

group identities and chose a name for their camp; The Eagles (one group) and The Rattlers (other group). The boys engaged in separate group activities and games prompting social identity. In the second stage of the study the two groups were informed of each other's presence and brought together to compete in challenges and tasks. In this stage it was intended to bring the two groups into competition with each other, in conditions that would create frustration between them. The findings showed that in-group favouritism and out-group discrimination occurred as boys showed hostility against others in the rival group. The researchers observed the behaviour of the boys by spending up to 12 hours a day with their respective group. The observers noted down any interactions or conversations between or within the two groups as soon as possible after they occurred. The boys were also asked to complete questionnaires about their friendship choices in their in-group and against the out-group. At the beginning friendship choices were in favour of the in-group and only changed after the researchers introduced tasks which involved working collaboratively. These superordinate goals aimed to reduce intergroup friction. Sherif could be considered reductionist as they argued the underlying reason for the boys' discrimination in the early stages of the study was due to the boys' identification with other members of their in-group. They had socially categorised themselves in their particular in-group and identified with others in that group after creating camp allegiances. The boys' behaviour could also be seen as reductionist as they were observed to create group identities by naming their camp and designing flags and t-shirts. Sherif and the observers noted that the division of the groups was the underlying reason for the hostility seen in the initial stages of the study. However, this argument does not consider individual differences, as the boys will have entered the camp with pre-existing personality traits which could have influenced their behaviour. Some of the boys may have been more conformist than others and will have wanted to fit in with the others, this could have resulted in more imitation of others in the group. Some boys may have been introverted and would have preferred to go along with the others in the group. It is likely that there are several other contributing factors beyond the division of the two groups, responsible for the behaviour seen in the study. Both of these studies demonstrate reductionist views by identifying single, underlying reasons for the behaviour of their participants. However, there may also be other more holistic factors which may have contributed to the behaviour in both studies.

Other reasonable marking points gain credit.

Issues & Debates

5. AO1 (4 marks), AO2 (4 marks), AO3 (4 marks)

For example:

AO1

Anger is an emotional response which may trigger aggressive outbursts. There are several biological explanations of aggression. For example, low levels of serotonin have been associated with aggressive behaviour. Serotonin is a mood stabilising neurotransmitter found in the brain. A drop in serotonin changes our mood in a depressive way and the anxiety and stress related to this could cause people to feel irritable. In addition, the hormone testosterone has been correlated with aggression in many studies in biological psychology. High levels of testosterone have been shown to result in increased levels of aggressive behaviours. Another biological explanation assumes that genetics are responsible for an increased vulnerability to aggression. Twin studies are able to show concordance rates (levels of agreement) between twins who share the same characteristics. This argument is stronger when referring to identical twins (MZ) as they share 100% of their DNA. There could also be psychodynamic explanations for aggression such as catharsis. This is the unconscious need to release negative emotions which build up causing the individual stress. These 'pent up' emotions are often released through aggressive behaviour. The feelings from catharsis are stored in the unconscious mind (usually from negative experience) but the behavioural act of catharsis is experienced consciously, like with an angry outburst.

AO2

Henry is a 50-year-old male, so is likely to have higher levels of testosterone than his wife. This might explain why he is more prone to angry outbursts with his family. He is also experiencing headaches which may be due to hormonal fluctuations.

Henry's father also has issues with anger which may suggest it's innate. He could have inherited the predisposition from his father, making him experience more anger than others.

Henry may have issues from his relationship with his father which could have caused him stress. This could be building up as negative emotions which only get released when he is angry. This is an unconscious process which might explain why Henry does not mean to snap at his sons.

Henry's wife has noticed a change in his mood following the loss of his employment in property management. This could be related to a drop in serotonin levels. This could also be contributing to his feelings of resentment for his wife.

AO3

There is evidence to support the association of serotonin with aggression known as the 'serotonin deficiency hypothesis' of human aggression. [Duke et al \(2014\)](#) conducted a meta-analysis using results from 175 independent samples with over 6,500 participants and found an inverse correlation. They suggested that serotonin levels are lower in individuals who act more aggressively. In addition, [Mann et al \(1990\)](#) found that a drug (dextfenfluramine) which reduces serotonin increases measures of hostility and aggression in males. However, this was only assessed via questionnaire method which limits the validity of the findings. Supporting evidence for hormonal explanations like testosterone comes from [Dolan et al \(2001\)](#) who found a positive correlation between testosterone levels and aggression in 60 male offenders, suggesting a link. One problem with correlational research is cause and effect cannot be inferred. Moreover, [Popma et al \(2007\)](#) found that high levels of testosterone only lead to aggression when levels of cortisol are low, suggesting that the combination of testosterone and other hormones may be a better explanation of aggression than testosterone alone. Evidence for the genetic explanation was demonstrated by [Coccaro et al \(1997\)](#) who found that up to 50% of the variance in aggressive behaviour can be explained by genetics. They reported a 50% concordance rate amongst identical (MZ) twins, and a 19% concordance rate for non-identical (DZ) twins for physical aggression. Suggesting that genetics play a part in aggressive behaviour. However, evidence from twin studies raise issues with poor generalisation as well as causation, as most twins are reared together.

Other reasonable marking points gain credit.

Candidates must demonstrate an equal emphasis between knowledge and understanding vs application vs evaluation/conclusion in their answer.		
Level 0	0	No rewardable material.
Level 1	1–3 marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	4–6 marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	7–9 marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques & procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning. Leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	10–12 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

6. AO1 (8 marks), AO3 (12 marks)

For example:

Cognitive psychology focuses on internal mental processes such as memory, thinking, and perception. There are several ways of explaining these processes which have different perspectives. For example, [Atkinson and Shiffrin \(1968\)](#) proposed the first model of memory. Their linear model aimed to show how memories pass from short-term into long-term, using attention and rehearsal. They claimed that information from the external environment enters the sensory store, where if attended to, passes into short-term memory. This store is a brief collection of information from all the senses. Sensory memory has a large capacity but can only hold information for a short duration; less than 1 second for iconic (visual) information and 2–4 seconds for echoic (auditory). The capacity of short-term memory was found

to be 7 ± 2 items (Miller, 1956), and this is known as the immediate span. Peterson and Peterson (1959) found the duration of short-term memory to be 18 seconds without rehearsal. Atkinson and Shiffrin (1968) suggested that rehearsal was significant in moving information into long-term memory, by using either maintenance or elaborative techniques. This model of memory was supported by experimental research into the primacy and recency effect. Glanzer & Cunitz (1966) illustrated this in their experiment suggesting words at the start of a list (which are rehearsed) get pushed into LTM, whereas the last remaining, recent words on the list remain in STM. The multi-store model has helped our understanding of information processing, particularly of words or digits in short-term memory. However, this model was criticised for being too simplistic and overemphasised the role of rehearsal. Despite this, the multi-store model of memory which suggested human memory was a series of separate stores each with distinct differences in capacity, duration and coding, made a valuable contribution to cognitive psychology. In contrast to this idea was a model of memory proposed by Baddeley and Hitch (1974) which focused on the role of short-term memory as an active processor. They argued that information coming into short-term memory was dealt with by an organisational store called the central executive (CE). This acts as a decision-maker passing new information into other sub-stores for processing. One of these stores which deals with visual information is the visuo-spatial sketchpad (VSS). The verbal processor is called the phonological loop (PL) and consists of two systems: phonological store and articulatory control system. Baddeley and Hitch (1974) also suggested that working memory plays a part in verbal reasoning and prose comprehension. This model attempts to offer a more sophisticated explanation of memory function and provides a better idea of how information is actively processed in short-term memory. Research support from brain-damaged cases like K.F (Shallice and Warrington, 1970) show how visual and verbal information is processed by the working memory. K.F was able to recall visual information (using the visuo-spatial sketchpad) but struggled to recall verbal information (phonological loop). This demonstrated the components (VSS & PL) of the model are separate entities working independently in short-term memory. However, studies using brain-damaged patients can be limited in terms of generalisation. In addition, more sophisticated ways of investigating internal mental processes are now used in cognitive psychology, such as brain scanning techniques like PET scans or fMRIs. As research has evolved, cognitive psychology has been able to offer a greater understanding of internal processes like memory. Baddeley and Hitch (2000) revised their model of memory by adding an additional component called the episodic buffer. This was used to explain how information was transferred to and from long-term memory. The revised model differs by focussing attention on the processes of integrating information rather than on the isolation of the sub-systems. This gives a more complex explanation of memory as a working process. Unlike the multi-store model of memory, this model of memory describes short-term memory as an active, multi-component system rather than a passive, unitary store. These models of memory have helped our understanding of how internal mental processes like memory work which in turn has developed our knowledge of cognitive psychology.

Other reasonable marking points gain credit.

Level	Mark	Descriptor
AO1 (8 marks), AO3 (12 marks) Candidates must demonstrate a greater emphasis on assessment/conclusion vs knowledge and understanding in their answer. Knowledge & understanding is capped at maximum 8 marks.		
Level 0	0	No rewardable material.
Level 1	1–4 marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Generic assertions may be presented. Limited attempt to address the question. (AO3)
Level 2	5–8 marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a generic or superficial assessment being presented. (AO3)
Level 3	9–12 marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning, leading to an assessment being presented which considers a range of factors. Candidates will demonstrate understanding of competing arguments/factors but unlikely to grasp their significance. The assessment leads to a judgement but this will be imbalanced. (AO3)
Level 4	13–16 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a logical assessment, containing logical chains of reasoning throughout which consider a range of factors. Demonstrates an understanding of competing arguments/factors but does not fully consider the significance of each which in turn leads to an imbalanced judgement being presented. (AO3)
Level 5	17–20 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical assessment, containing logical chains of reasoning throughout. Demonstrates a full understanding and awareness of the significance of competing arguments/factors leading to a balanced judgement being presented. (AO3)

END OF PAPER

Study Psychology (c)

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