



Pearson Edexcel International Advanced Level Psychology

Unit 4 WPS04 20-mark Essay EXEMPLAR



Introduction

- The purpose of this pack is to provide teachers and candidates with guidance on how to score the top band of marks in Unit 4 WPS04 of Pearson Edexcel IAL Psychology (Issue 6 valid from Sep 2024, first assessed Jan 2026).
- This is not intended as a model answer but provides the principles behind how maximum marks may be gained.
- If you have any enquiries regarding these materials or have any other questions about the course, please contact our International Psychology subject advisor on teachingscience@pearson.com.



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WPS04 January 2023 Paper 1 Clinical Psychology and Psychological Skills

Note: The sentences in blue support psychology as a science whilst those in orange do not.

Assess whether psychology can be called a science. (20 marks).

In order to be considered a science a subject should be able to produce theories that apply to everyone in a specific group of people, and these theories can then be used to create a hypothesis about how people will behave, which can be tested to determine if the theory needs adapting. The working memory model is a theory which included the phonological loop having a limited capacity of what can be said out loud in 2 seconds. This can create a hypothesis which has been tested by Baddeley who found that memory span for short words was larger than for long words, therefore it can be said that psychology fulfils this criteria and is a science.

A scientific hypothesis should be falsifiable, which means that experiments should be set up which would potentially prove the null hypothesis. If it is not possible to potentially prove a null hypothesis than a subject is not a science. Raine et al. studied NGRIs with the hypothesis that they would have different brain functioning than non-murderers in areas such as the prefrontal cortex. Whilst he did find such differences, this hypothesis is falsifiable as if some of the NGRIs did not have differences in brain functioning then the null hypothesis could be proved, therefore making psychology a science. However, it could also be argued that some areas of psychology are not scientific as they are not falsifiable, for example social learning theory. If studies find that children copy the actions of adults that they see then this is because they are role models, but if the children do not copy the actions then this is because the adults are not role models. Therefore SLT cannot be falsified as they have an explanation if the null hypothesis is proven,

Scientific studies collect empirical data, that is data that is directly observable. There should be no inference or interpretation that the data means some unobserved process is happening. Clinical psychology can be seen as scientific as genes such as the EPHX2 gene can be observed, as can eating behaviours and weight, therefore it gathers empirical evidence so giving more support to the idea that psychology is a science. On the other hand social psychology may not be seen as scientific as it uses questionnaires to determine personality types to see if they affect conformity. The personality is not directly observed, there is an assumption that answering questions in a certain way means the respondent has a certain personality, therefore it is not empirical data.



Research methods that collect objective data, that require no interpretation from the researcher when analysing it are said to be more scientific than methods which collect more subjective data. The research methods also need to be standardised so the procedures can be replicated by others to check for consistent results in order to be seen as scientific. Loftus and Palmer fulfil both these criteria, as they collected objective data in the form of the estimated mph, and their study was standardised as each participant saw all seven videos and were all asked the same questions about the video apart from the change of verb, showing that psychology does use scientific research methods therefore can be said to be a science. However some areas of psychology use case studies, such as the study of Genie, which are not standardised as they are on one person and created due to their circumstances so cannot be replicated, and case studies tend to collect subjective data as well as objective data, so whilst they are useful in understanding unique cases, they cannot be said to be scientific.

Another aspect of scientific subjects is reductionism. This is when complex behaviours are reduced down to small components. the idea is that the small components can be researched individually, and then all put together to give us a full understanding of human behaviour. Clinical psychology can be said to be scientific as it reduces complex behaviours down to their small components. For example, it reduces schizophrenia down to the function of neurotransmitters, saying it is caused by an excess or reduction of dopamine and glutamate. Others would argue that psychology is not reductionist- a holistic approach is needed to fully understand human behaviour, such as Erikson's' theory, which focuses on how innate stages and how interaction with others affects the development of these stages, and how this affects our emotional development, therefore this is less scientific.

Finally to be scientific research has to be valid. This means it has to measure what it says it is measuring, in as realistic a manner as possible. So the setting and task have to be as realistic as possible, and the variable being measured should be accurately measuring what it says it is. It can be argued that this means research into memory is not scientific as it often uses word lists which are not a realistic measurement of memory, as we don't often just have to recall lists of words, and a list of words cannot be said to be all that memory is, there is more to it such as meaning of what it remembered, autobiographical memory etc.

Therefore it can be argued that some areas of psychology can be called a science, whilst other areas cannot be called a science, however if the above criteria were applied to traditional sciences such as physics then the same could also be said.



Mark Scheme

Question Number	Indicative Content	Mark
11	<p style="text-align: center;">AO1 (8 marks), AO3 (12 marks)</p> <p>AO1</p> <ul style="list-style-type: none">• Science is the empirical study of physical evidence that is observable through the senses.• Science requires an unbiased, value-free analysis of data gathered to maintain objectivity.• Popper claimed scientists should test their theory using falsification where they set out to disprove their hypothesis or predictions.• Some psychological theories are introspective and lack the empirical testing of phenomena which can be observed.• Standardised controls and laboratory experiments allow replication to test for reliability.• Scientific methods, such as laboratory experiments, are usually undertaken within artificial contexts with artificial tasks and measures.• Science reduces human behaviour to smaller components in order to test and study individual features of human behaviour.• Universal laws attempt to give a single explanation for the nature of a particular human behaviour. <p>AO3</p> <ul style="list-style-type: none">• Learning theories aim to empirically observe behavioural responses to stimuli, as in Pavlov's (1927) salivation in dogs he measured salivation using a collection jar for the saliva, demonstrating scientific principles.• Qualitative data, such as natural observations, is less scientific as it is not objective, however it may describe human behaviour in more depth than quantitative data, so psychology may not need to be scientific.• The use of brain scanning techniques, such as Raine et al. (1997) allows for a value-free data collection process, yet the interpretation of the PET scans may be subjective, so psychology is not fully scientific.• Bandura applied falsification to study SLT developing this into Social Cognitive Theory after he found his research did not fully explain how people learn behaviour making his theory more scientific.• Psychoanalysis is introspective meaning concepts cannot be falsified yet it is effective in therapy, so not all psychology aims for scientific status.• Milgram (1963) used standardised procedures in his studies of obedience allowing him and others such as Burger (2009) to replicate them to retest findings, increasing scientific credibility of agency theory.• Bartlett (1932) did not use strict controls in his studies of reconstructive memory reducing the scientific nature of his research, although it could be considered a more valid representation of real-life memory.• Peterson and Peterson (1959) used an artificial test of STM using nonsense trigrams that do not represent a realistic use of memory, so there is difficulty in balancing science against realistic behaviour.	



	<ul style="list-style-type: none"> Reductionism, such as the dopamine hypothesis, excludes interactions between individuals and the environment to give scientific explanations which is unrealistic when studying the complexities of human nature. Nomothetic approaches, such as cognitive and biological psychology, attempt to establish universal laws which, despite being scientifically credible, ignore the uniqueness of human beings. <p>Look for other reasonable marking points.</p>	(20)
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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.		
	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)



Examiner's Comment:

Given the time constraints and pressure of the exam this essay would get 20 marks.

AO1: This is level 5 and at the top of the band.

There is accurate knowledge and understanding of what makes a subject a science throughout the essay. The candidate does not just use terms, but they show they understand what those terms are. For example, in paragraph 2, they do not just write that a science must be falsifiable, they tell us what being falsifiable means.

In paragraph 3 they write about empirical data, again showing that they understand what is meant by the term empirical. They also go beyond saying a science has to gather objective data, they write that this means there should be no interpretation from the researcher, and why research methods should be standardised with the detail about why replication is needed (to check for consistent results) and not just saying it needs to be standardised so it can be replicated.

Similarly in the final two paragraphs the candidate shows they understand what is meant by the terms- reductionism and validity. The marker knows that the candidate knows what they are writing about and has not just learnt a set of terms.

AO3: This is also level 5 and at the top of the band.

There is a well-developed logical assessment throughout, which has logical chains of reasoning.

The AO3 logically follows on from the AO1, so in each paragraph the AO3 links to what the AO1 was about, e.g. in paragraph 1 the AO1 is about hypothesis testing and the AO3 relates to a psychological theory and how it can be hypothesis tested.

The AO3 points do not just say it is scientific or not, but they explain why or how. For example, in paragraph 2 it does not just say that Raine is falsifiable, the candidate tells us how it is falsifiable.

Those paragraphs that have both sides of the argument about whether psychology can be considered a science are logical with the counter argument following on and developing what has previously been written. E.g. paragraph 3 the candidate tells us why clinical psychology can be seen as empirical, which is developed through the observation of the EPHX2 gene and weight rather than just saying clinical psychology is empirical as it uses observable data. The counter argument then logically follows on as why psychology may not be a science as it does not always use observable data. Again, this point is developed, the candidates tell us why the use of questionnaires may not be empirical.



There is a full understanding and awareness of competing arguments. Whilst not every paragraph has both sides of the argument, most do. Both reasons why psychology could be seen as a science and reasons why it may not be seen as a science are equally developed showing the candidate does fully understand competing arguments.

There is a balanced judgement at the end of the essay, however this on its own may not be a level 5 judgement. However, this candidate has offered judgements with every AO3 point they have made explain how and why psychology may or may not be seen as a science. The AO3 is balanced with equal points about both sides of the argument, rather than focus mainly on one side.

Other points:

The candidate has used psychological information from a variety of topics that they have covered over the two years. They have mentioned social psychology (paragraph 3), cognitive psychology (paragraphs 1 and 6), biological psychology (paragraph 2), learning theories (paragraph 2), child psychology (paragraphs 4 and 5), criminological psychology (paragraph 4) and clinical psychology (paragraphs 3 and 5).

Whilst candidates do not need to include all the topics that they have covered over the two years; to get to level 5, markers would expect a range of different areas to be covered as this is a synoptic question aiming to allow candidates to demonstrate what they know.

The candidate has written more AO3 points than AO1 points, which fits with the mark scheme as the AO1 is worth 8 marks and the AO3 is worth 12 marks. This answer has taken account of the different marks for the two assessment objectives.

Not all paragraphs have both sides of the argument in terms of whether psychology is a science or not. As long as the AO3 is balanced within the whole essay then this is acceptable at level 5.

Markers take account of the time constraints within the exam and pressure as well when marking 20-mark essays, so there do not need to be eight AO1 points and twelve AO3 points to get to level 5.

If the points are accurate and thorough within the time constraints (AO1), and well-developed and logical (AO3), the candidate can still achieve level 5 and top marks.