

Mark Scheme (Final)

Summer 2023

Pearson Edexcel International Advanced Subsidiary Level In Psychology (WPS02)
Paper 01
Unit 2: Biological psychology, learning theories and development

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Using the Mark Scheme

Examiners should look for qualities to reward rather than faults to penalise. This does NOT mean giving credit for incorrect or inadequate answers, but it does mean allowing candidates to be rewarded for answers showing correct application of principles and knowledge. Examiners should therefore read carefully and consider every response: even if it is not what is expected it may be worthy of credit.

The mark scheme gives examiners:
- an idea of the types of response expected
- how individual marks are to be awarded
- the total mark for each question
- examples of responses that should NOT receive credit.

/ means that the responses are alternatives and either answer should receive full credit.
( ) means that a phrase/word is not essential for the award of the mark, but helps the examiner to get the sense of the expected answer.

Phrases/words in **bold** indicate that the meaning of the phrase or the actual word is **essential** to the answer.
ecf/TE/cq (error carried forward) means that a wrong answer given in an earlier part of a question is used correctly in answer to a later part of the same question.

Candidates must make their meaning clear to the examiner to gain the mark. Make sure that the answer makes sense. Do not give credit for correct words/phrases which are put together in a meaningless manner. Answers must be in the correct context.

Quality of Written Communication

Questions which involve the writing of continuous prose will expect candidates to:
- write legibly, with accurate use of spelling, grammar and punctuation in order to make the meaning clear
- select and use a form and style of writing appropriate to purpose and to complex subject matter
- organise information clearly and coherently, using specialist vocabulary when appropriate.

Full marks will be awarded if the candidate has demonstrated the above abilities. Questions where QWC is likely to be particularly important are indicated (QWC) in the mark scheme, but this does not preclude others.

Paper WPS02 mark scheme
June 2023
Section A

Question Number	Answer	Mark
1(a)	AO1 (2 marks) Credit up to two marks for accurate description. For example: • Exposure to testosterone whilst in the womb can affect the development of the brain which can lead to an increase in aggression (1). Exposure to too much testosterone after birth stimulates cell growth in the hypothalamus and amygdala so may increase aggression (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
1(b)	AO1 (2 marks), AO3 (2 marks) Credit one mark for accurate identification of each strength/weakness (AO1) Credit one mark for justification/exemplification of the strength/weakness (AO3) For example: Strength • Dabbs (1987) found that male prisoners with higher levels of testosterone in their saliva had often been convicted of more violent crimes giving the theory credibility (1), especially as 10 out 11 prisoners with the highest levels of testosterone had committed violent crimes, showing testosterone can affect aggression (1). Weakness • Bird et al. (2016) found that testosterone did not lead to an increase in aggression so the theory is not a complete explanation of aggression (1), as they found that scoring highly in narcissism affected males' aggression towards a same sex rival (1). Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
2(a)	AO2 (2 marks) Credit one mark for an accurate identification of the independent variable. Credit one mark for an accurate identification of the dependent variable. For example: Independent variable • Whether the participants spent no more than 1 hour a day playing online games, or spent up to 7 hours a day playing online games (1). Dependent variable • The number of aggressive thoughts recorded over each of the two weeks (1). Look for other reasonable marking points. Generic answers score 0 marks.	(2)

Question Number	Answer	Mark
2(b)	AO2 (1 mark), AO3 (1 mark) Credit one mark for accurate identification of a reason in relation to the scenario (AO2) Credit one mark for justification/exemplification of the reason (AO3) For example: • Harold used the Wilcoxon Signed Ranks test as his experimental design was repeated measures (1), as the same participants stated the number of aggressive thoughts, they had in the first and second week (1). Look for other reasonable marking points. Generic answers score 0 marks.	(2)

<table>
<tr><th>Question Number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>2(c)</td><td>AO2 (4 marks)
Credit one mark for correct completion of difference
Credit one mark for correct completion of ranked difference
Credit one mark for a correct calculation of sum of both ranks (8 and 7
Credit one mark for a correct answer for T= 7

For example:

<table>
<tr><th>Participant</th><th>Number of aggressive thoughts in week 1</th><th>Number of aggressive thoughts in week 2</th><th>Difference</th><th>Ranked Difference</th></tr>
<tr><td>A</td><td>2</td><td>0</td><td>2</td><td>3</td></tr>
<tr><td>B</td><td>7</td><td>8</td><td>-1</td><td>1.5</td></tr>
<tr><td>C</td><td>5</td><td>9</td><td>-4</td><td>4</td></tr>
<tr><td>D</td><td>1</td><td>1</td><td>0</td><td></td></tr>
<tr><td>E</td><td>12</td><td>7</td><td>5</td><td>5</td></tr>
<tr><td>F</td><td>3</td><td>3</td><td>0</td><td></td></tr>
<tr><td>G</td><td>2</td><td>3</td><td>-1</td><td>1.5</td></tr>
</table>

Look for other reasonable marking points.</td><td>(4)</td></tr>
</table>

Question Number	Answer	Mark
2(d)	AO2 (1 mark), AO3 (1 mark) Credit one mark for accurate identification of an improvement in relation to the scenario (AO2). Credit one mark for justification/exemplification of the improvement (AO3). For example: • Harold could have only used aggressive online games in his investigation to improve the validity of his investigation (1) as this would ensure that all the participants played the same sort of games and he could determine if aggressive games caused more aggressive thoughts (1). Look for other reasonable marking points. Generic answers score 0 marks.	(2)

Question Number	Answer	Mark
3(a)	AO1 (2 marks) Credit up to two marks for an accurate description of research into the sleep-wake cycle For example: • Research into circadian rhythms can use case studies where the participant(s) are isolated without any natural daylight to see the effect this has on the sleep-wake cycle (1). Siffre (1972) found that his circadian rhythm went into a 48-hour cycle two times during the six months he was in a cave (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
3(b)	AO1 (2 marks), AO3 (2 marks) Credit one mark for accurate identification of one strength and one weakness (AO1) Credit one mark for justification/exemplification of the strength and the weakness (AO3) For example: Strength • Some studies into the circadian sleep-wake cycle use animals, as areas of the brain such as the SCN can be lesioned (1), which allows us to gain more knowledge of which areas of the brain affect the circadian sleep-wake cycle as we would not ethically be able to do this on humans (1). Weakness • The results from studies that only use one person, such as Siffre (1972), are not representative of the general population (1), as their circadian sleep-wake cycle may not change to a longer cycle or the same length of time so the results may not be generalisable to others (1). Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
4 (a)	AO2 (1 mark) Credit one mark for accurate statement in relation to the scenario. For example: • The probability that the results are due to chance is equal or less than 5% (1). Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
4 (b)	AO2 (1 mark) Credit one mark for accurate identification in relation to the scenario. For example: • Adeliza found a positive correlation, as the number of hours slept increased so did mood (1). Look for other reasonable marking points. Generic answers score 0 marks.	(1)

Question Number	Answer	Mark
4(c)	AO2 (1 mark), AO3 (1 mark) Credit one mark for accurate identification of one weakness in relation to the scenario (AO2) Credit one mark for justification/exemplification of the weakness (AO3) For example: • As Adeliza used a correlation she can only say if there is a relationship between the number of hours slept per night and mood, she cannot determine cause and effect (1), it could be that more sleep does cause a more positive mood or it could be that a more positive mood leads to more sleep or a third unmeasured variable may affect both (1). Look for other reasonable marking points. Generic answers score 0 marks.	(2)

Question Number	Indicative content	Mark
5	AO1 (4 marks), AO2 (4 marks) AO1 • Informed consent is given when the participants agree to be part of the study knowing exactly what will be done during the study and how their results will be used. • Participants should not be harmed in any way this includes physical harm and emotional harm. • A study is reliable if it can be conducted again and similar results are found. • To be reliable extraneous variables should be controlled as much as possible so the study can be replicated. AO2 • For our practical we told our participants that we were looking for a correlation between the number of hours slept and the number of hours spent on social media. • Our participants were not caused any emotional or physical ham as they were answering questions about their sleep and social media use, we were not manipulating them in any way. • Several different groups in our class conducted the same investigation on different participants and we all found there was a negative correlation between the number of hours slept and time spent on social media. • Some extraneous variables were not controlled, as some participants answered the questionnaire on sleep and social media use on their own, and some answered it whilst they were with their friends. Look for other reasonable marking points.	(8)

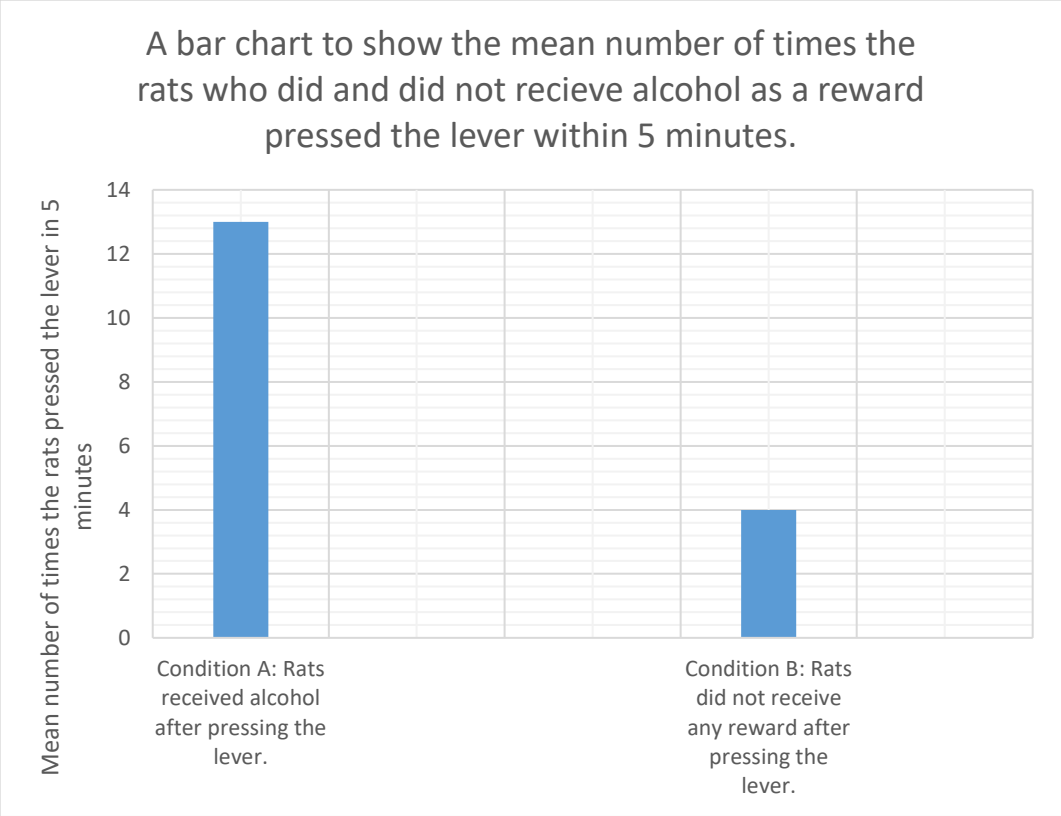
Level	Mark	Descriptor
AO1 (4 marks), AO2 (4 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs application in their answer.		
	0	No rewardable material
Level 1	1−2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 2	3−4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Discussion is partially developed, but is imbalanced or superficial occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 3	5−6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Candidates will demonstrate a grasp of competing arguments but discussion may be imbalanced or contain superficial material supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures (AO2)
Level 4	7−8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical balanced discussion, containing logical chains of reasoning. Demonstrates a thorough awareness of competing arguments supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). (AO2)

Section B.

Question Number	Answer	Mark
6 (a)	AO1 (2 marks) Credit up to two marks for an accurate description. For example: • A secondary reinforcer does not satisfy a basic need such as hunger (1). Secondary reinforcement allows a person to use it to get access to a primary reinforcer (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
6 (b)	AO1 (1 mark), AO3 (1 mark) Credit one mark for accurate identification of a strength (AO1). Credit one mark for justification/exemplification of the strength (AO3). For example: • Operant conditioning can be said to be a more complete explanation of learning compared to classical conditioning so it is a better explanation of human behaviour (1), as it focuses on how new voluntary behaviour is learnt rather than just learning new reflexes (1). Look for other reasonable marking points.	(2)

Question Number	Answer	Mark
7 (a)	AO2 (2 marks) Credit two marks for a fully operationalised directional hypothesis. Credit one mark for a partially operationalised directional hypothesis. For example: • The rats who received alcohol for a week every time they pressed a lever will press the lever more times in five minutes than the rats who did not receive any reward after pressing the lever (2). • The rats who received alcohol will press the lever more times than the rats who got no reward (1). Look for other reasonable marking points. Generic answers score 0 marks.	(2)

Question Number	Answer	Mark
7 (b)	AO2 (3 marks) Credit one mark for accurate title. Credit one mark for accurate labelling of the axes. Credit one mark for accurate plotting of the data. For example:  Look for other reasonable answers. Generic answers score 0 marks.	(3)

Question Number	Answer	Mark
7 (c)	AO2 (1 mark), AO3 (1 mark) Credit one mark for accurate use of the results (AO2). Credit one mark for an accurate conclusion (AO3). For example: • Stephen could conclude that alcohol does act as a positive reinforcement for rats (1) as the rats who received alcohol after pressing the lever pressed it on average 9 more times within five minutes compared to the rats who did not receive a reward (1). Look for other reasonable marking points. Generic answers score 0 marks.	(2)

Question Number	Answer	Mark
7 (d)	AO2 (2 marks), AO3 (2 marks) Credit up to two marks for accurate identification of each improvement in relation to the scenario (AO2). Credit up to two marks for justification/exemplification of each improvement (AO3). For example: • Stephen could have used fewer rats, such as 10 in each group to make his study more ethical (1), as the Scientific Procedures Act (1986) says that the minimum number of animals needed to fulfil the research goals should be used (1). • Stephen could have used a different positive reinforcement, such as the use of a sweet drink instead of alcohol (1), as the rats are less likely to become addicted to the sweet drink, so they are less likely to suffer long term physical or psychological distress (1). Look for other reasonable answers. Generic answers score 0 marks.	(4)

Question Number	Answer	Mark
8 (a)	AO2 (2 marks) Credit up to two marks for accurate description in relation to the scenario. For example: • Phillipa would decide to give the dog a treat after a set number of times that it had given her its paw when she said "paw" (1). For example, she would give the dog a treat after she had said "paw" five times and the dog had given her its paw (1). Look for other reasonable marking points. Generic answers score 0 marks.	(2)

Question Number	Answer	Mark
8 (b)	AO1 (2 marks), AO3 (2 marks) Credit one mark for each accurate comparison identified (AO1) Credit one mark for exemplification/justification of comparison (AO3) The answer must include at least one similarity and one difference. For example: • One difference is classical conditioning involves the learning of more limited behaviours compared to operant conditioning (1), as classical conditioning focuses on the learning of reflexes only whilst operant conditioning focuses on the learning of voluntary behaviours (1). • Both classical and operant conditioning say that we learn through the environment and association (1), classical conditioning by associating a new stimulus with the unconditioned stimulus and operant conditioning through associating a behaviour with a desired reward (1). Look for other reasonable marking points.	(4)

Question Number	Answer	Mark
9 (a)	AO1 (1 mark) Credit one mark for accurate statement For example: • Capafóns et al. (1998) used a volunteer sampling technique. (1) Look for other reasonable marking points.	(1)

Question Number	Answer	Mark
9 (b)	AO1 (2 marks), AO3 (2 marks) Credit one mark for accurate identification of each way the study was controlled (AO1). Credit one mark for justification/exemplification of each way the study was controlled (AO3). For example: • Capafóns et al. (1998) used the same published scales with all the participants to measure their fear of flying at the start and end of the study (1), which means that any differences in the fear of flying that were found can be said to be due to having treatment or not rather than the use of different scales for the different groups (1). • The participants in the treatment group and the non-treatment groups were matched at the start of the study for their self-reported fear level (1), therefore the results were not due to the non-treatment group starting off with a higher self-reported fear of flying adding to the validity of the study (1). Look for other reasonable marking points.	(4)

Question Number	Indicative content	Mark
10	AO1 (4 marks), AO3 (4 marks) AO1 • Freud said that if a child did not successfully pass through the five psychosexual stages it affected the individual's characteristics as an adult. • If a child was underindulged in the oral stage then as an adult they would become envious, pessimistic, or sarcastic. • In the anal stage pleasure is gained through retaining or expelling faeces and the ego develops. • The phallic stage occurs between the ages of three to six years old and is when the child goes through the Oedipus/Electra complex and identifies with the same sex parent. AO3 • Freud's theory can be deemed unscientific as you cannot falsify his theory, if someone has issues as a child they will develop abnormal adult characteristics, why has an adult got those characteristics because of issues in the five stages of development. • Freud's theory can be applied through the use of psychoanalysis to help those who have not successfully got through any of the psychosexual stages so it is useful as it can help resolve people's issues. • Freud mainly used neurotic, European women as evidence for his theory on psychosexual stages so it may be that people from other cultures may not go through the stages in the same way. • The case of Little Hans (1909) showed that his fear of horses was resolved when he had gone through the Oedipus conflict, and he identified with his father giving Freud's theory credibility. Look for other reasonable marking points.	(8)

Level	Mark	Descriptor
AO1 (4 marks), AO3 (4 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.		
	0	No rewardable material.
Level 1	1-2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) 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	3-4 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 superficial conclusion being made. (AO3)
Level 3	5-6 Marks	Demonstrates accurate knowledge and understanding. (AO1) 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	7-8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Section C

Question Number	Indicative content	Mark
11	AO1 (6 marks), AO3 (6 marks) AO1 • Systematic desensitisation is an exposure therapy based on classical conditioning, working on the principle that you cannot be relaxed and anxious at the same time. • The aim of the therapy is for the client to associate the phobic object with relaxation rather than fear. • At the start of the therapy the therapist and client discuss how the anxiety presents itself and what triggers the anxiety. • The client will then create a hierarchy of fear, moving from their least anxious situation to the most anxious situation. • Before being exposed to the phobic object the client will be taught to relax such as using deep breathing techniques. • The client will then be put in anxiety provoking situations moving up their hierarchy of fear once they have relaxed at the previous stage. AO3 • Capafóns et al. (1998) found that systematic desensitisation did reduce the fear of flying compared to a control group who had not treatment so systematic desensitisation can be said to be an effective therapy. • Systematic desensitisation is mainly used for the treatment of phobias so it is not an effective therapy for other disorders such as seasonal affective disorder. • Systematic desensitisation may be more effective than flooding as it is a more gradual process so people with phobias may be more likely to engage with it. • Psychoanalysis would argue that the phobia is caused by an unconscious process which is not addressed by systematic desensitisation so would not be effective in treating the client. • Bulantika et al. (2018) found that systematic desensitisation reduced social anxiety in adolescents from a mean score of 63.75 to a mean score of 41, showing that it is an effective therapy. • Ougrin (2011) found that exposure therapy was as effective as cognitive behavioural therapy for panic disorder, but that cognitive behavioural therapy was more effective for social phobia, so other therapies may be more effective than systematic desensitisation. Look for other reasonable marking points.	(12)

Level	Mark	Descriptor
AO1 (6 marks), AO3 (6 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs judgement/conclusion in their answer.		
	0	No rewardable material.
Level 1	1–3 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A judgement/decision 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) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material leading to a judgement/decision being presented. Candidates will demonstrate a grasp of competing arguments but response may be imbalanced. (AO3)
Level 3	7–9 Marks	Demonstrates accurate knowledge and understanding. (AO1) Displays a mostly developed and logical argument, containing mostly coherent chains of reasoning. Demonstrates an awareness of competing arguments, presenting a judgement/decision which may be imbalanced. (AO3)
Level 4	10–12 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical argument, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments and presents a balanced response, leading to a balanced judgement/decision. (AO3)

Question Number	Indicative content	Mark
12	AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) AO1 • It was thought that XYY syndrome caused aggression in males that had an extra Y chromosome which is the male chromosome. • If the MAOA gene is dysfunctional it stops noradrenaline, serotonin and dopamine from being broken down. • If the MAOA gene stops neurotransmitters such as noradrenaline being broken down then the person could become more sensitive to the flight or fight response and so become more aggressive. • Social learning theory says that we will copy the aggressive actions a role model if they have been vicariously reinforced for the aggressive behaviour. • In order to learn aggressive behaviour, we must observe the behaviour and notice the different actions needed for the specific aggressive behaviour. • People have to be motivated to imitate a behaviour, which may in the form of the role model receiving a reward or the imitator receiving a reward once they have imitated the aggression. AO2 • Berengaria's father may have an extra Y chromosome which makes him more aggressive and explain why he was in the fight that resulted in him going to prison. • Berengaria's mother may have a dysfunctional MAOA gene which leads to an increase in adrenaline so she goes into fight mode when with the neighbours and has arguments with them. • The film actress is a role model to Berengaria as she is of the same gender, so Berengaria is more likely to imitate her kick boxing as the film actress has relevance to her. • The phone that was allegedly stolen by Berengaria would act as a reinforcement for her, as she could sell it and gain money to spend on something she wanted. AO3 • The XYY syndrome only occurs in males so it does not explain why females are aggressive, as females do not have a Y chromosome, so it is not a complete explanation of aggression. • McDermott (2008) found that those with low MAOA activity were more likely to give hot sauce to an opponent who had stolen their earnings so supporting that genes affect aggression. • A dysfunctional MAOA gene affects neurotransmitters, which then affect aggression so genes on their own do not explain aggressive behaviour. • Bandura Ross and Ross (1961) found that children who saw an adult model being aggressive to a Bobo doll were more likely to be aggressive towards the Bobo doll than children who did not see an aggressive model, so social learning theory can explain aggression.	(16)

	• Bandura's studies on aggression involved young children so social learning theory may not apply to adults as they may be able to think of other ways to deal with a situation. • Anderson and Murphy (2003) found that females who played Street Fighter gave more blasts of loud noise to their opponents than those who play Lemmings showing that social learning theory may affect aggression. Look for other reasonable marking points.	

Level	Mark	Descriptor
AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer. Application to the context is capped at maximum 4 marks.		
	0	No rewardable material.
Level 1	1-4 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	5-8 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	9-12 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	13-16 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)

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