5.2 The Behaviourist Approach: Classical Conditioning and Pavlov's Research

AQA 7182 · about 50 minutes · Write-in edition

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 Define stimulus discrimination in classical conditioning and give one short example using the bell but showing discrimination between two similar tones.

(Total for Question 1 is 3 marks)

2 A clinician uses a simple classical conditioning idea to explain why a patient feels anxious when hearing a dentist's drill. The clinician says the drill sound was once paired with painful treatment. Identify two specific pieces of advice the clinician could give the patient that follow directly from classical conditioning theory to reduce the anxiety, and explain briefly why each would help.

(Total for Question 2 is 5 marks)

3 In a classical conditioning scenario where the sound of a bell becomes associated with food and causes salivation, identify the unconditioned stimulus and the conditioned stimulus. Give one label per mark.

(Total for Question 3 is 2 marks)

4 Give an example in a human context where a previously neutral stimulus might become a conditioned stimulus through association. Explain which stimulus is neutral, what it is paired with, and the expected conditioned response.

(Total for Question 4 is 3 marks)

5 Define 'acquisition' in classical conditioning and give one brief reason why repeated pairings are important for acquisition to occur, referring to Pavlov's work.

(Total for Question 5 is 2 marks)

6 Explain what is meant by 'extinction' in classical conditioning, and state what would be observed in Pavlov's dogs during extinction trials.

(Total for Question 6 is 2 marks)

7 Explain stimulus generalisation in classical conditioning and give one brief real-world consequence of generalisation for humans.

(Total for Question 7 is 2 marks)

8 Pavlov used non-human animals in controlled laboratory experiments. Identify two strengths of using controlled laboratory experiments on animals to study classical conditioning, and give one brief limitation of this approach. Each strength and the limitation should be distinct.

(Total for Question 8 is 4 marks)

9 Identify two ethical issues raised by Pavlov's use of dogs in laboratory research and suggest briefly how each issue could be addressed in modern research practice.

(Total for Question 9 is 4 marks)

10 Discuss the strengths and limitations of classical conditioning as an explanation of behaviour. In your answer, include scientific credibility, explanatory power for simple learned responses, and limitations such as determinism and difficulty explaining novel or complex human behaviour. Use evidence from Pavlov's research and consider real-world application and theoretical limits.

(Total for Question 10 is 12 marks)

Mark scheme · 5.2 The Behaviourist Approach: Classical Conditioning and Pavlov's Research

Question 1

defines stimulus discrimination: the ability to distinguish between the conditioned stimulus and similar stimuli so that only the conditioned stimulus elicits the conditioned response oe — **B1**

gives example: dog salivates to a 1000 Hz bell but not to a 900 Hz bell after discrimination training oe — **B1**

explains briefly that discrimination training involves pairing only the specific tone with food and not the similar tone oe — **B1**

Answer: Stimulus discrimination is the ability to distinguish between the conditioned stimulus and similar stimuli so that only the conditioned stimulus elicits the conditioned response. For example, a dog may salivate to a 1000 Hz bell but not to a 900 Hz bell after discrimination training, because only the 1000 Hz tone was paired with food.

Question 2

advice 1: use graduated exposure to the drill sound without pain, e.g. listen to recordings starting at low volume and gradually increasing oe — **M1**

explains why: repeated presentation of the drill sound without the unconditioned stimulus (pain) will lead to extinction of the conditioned anxiety response oe — **A1**

advice 2: pair the drill sound with a relaxation response, e.g. relaxation exercises or pleasant music during exposure oe — **M1**

explains why: counterconditioning or reciprocal inhibition can replace the conditioned anxiety with relaxation by forming a new association oe — **A1**

overall shows both suggestions follow directly from classical conditioning principles oe — **B1**

Answer: Advice 1: use graduated exposure to the drill sound without pain, for example listening to recordings at low volume then increasing it; this helps because repeated presentation of the sound without the painful stimulus should produce extinction of the anxiety. Advice 2: pair the drill sound with relaxation techniques or pleasant stimuli during exposure; this helps because counterconditioning can create a new association so relaxation replaces anxiety.

Question 3

unconditioned stimulus: the food oe — **B1**

conditioned stimulus: the bell after association with the food oe — **B1**

Answer: Unconditioned stimulus: the food. Conditioned stimulus: the bell (after it has been associated with the food).

Question 4

gives a plausible human example where a neutral stimulus is paired with an unconditioned stimulus, e.g. smell of hospital corridor paired with pain or illness oe — **M1**

identifies the neutral stimulus, the unconditioned stimulus it is paired with, and the resulting conditioned response, e.g. neutral stimulus: hospital smell; paired with: painful treatment; conditioned response: anxiety or nausea when smelling it later oe — **A1**

shows the association clearly links the neutral stimulus to a learned response oe — **B1**

Answer: Example: the smell of a hospital corridor (neutral stimulus) repeatedly paired with painful medical treatment (unconditioned stimulus). After association, the hospital smell becomes a conditioned stimulus producing anxiety or nausea as the conditioned response.

Question 5

defines acquisition: the initial stage where the neutral stimulus becomes associated with the unconditioned stimulus so that the conditioned response is learned oe — **B1**

explains repeated pairings are important because they strengthen the association, making the conditioned stimulus predict the unconditioned stimulus (refers to Pavlov's repeated bell-food pairings) oe — **B1**

Answer: Acquisition is the initial stage when the neutral stimulus becomes associated with the unconditioned stimulus so that a conditioned response is learned. Repeated pairings are important because they strengthen the association, so the conditioned stimulus reliably predicts the unconditioned stimulus, as in Pavlov's repeated bell-food pairings.

Question 6

defines extinction: the weakening and eventual disappearance of the conditioned response when the conditioned stimulus is presented repeatedly without the unconditioned stimulus oe — **B1**

states that in Pavlov's dogs salivation to the bell would gradually reduce and stop if the bell was rung repeatedly without presenting food oe — **B1**

Answer: Extinction is the weakening and eventual disappearance of the conditioned response when the conditioned stimulus is repeatedly presented without the unconditioned stimulus. In Pavlov's dogs, salivation in response to the bell would gradually decrease and eventually stop if the bell were rung without food being given.

Question 7

explains stimulus generalisation: when a conditioned response is produced by stimuli similar to the conditioned stimulus, not just the original stimulus oe **B1**

gives a real-world consequence, e.g. a person conditioned to fear a specific dog may also fear other similar dogs, which can broaden anxiety and avoidant behaviour oe **B1**

Answer: Stimulus generalisation occurs when stimuli similar to the conditioned stimulus also elicit the conditioned response. For example, a person conditioned to fear one specific dog might also feel fear toward other dogs with similar size or bark, which can expand avoidance and anxiety in everyday life.

Question 8

identifies strength 1: high experimental control, allowing reliable measurement of variables such as timing and number of pairings oe **M1**

explains why this matters: control increases internal validity and makes causal claims about association formation stronger oe **A1**

identifies strength 2: objective, quantifiable measures (e.g. volume of saliva) increase reliability and scientific credibility oe **M1**

explains limitation: using animals raises issues over generalisability to complex human behaviour and higher cognitive processes oe **A1**

Answer: Strength 1: high experimental control over timing and pairings, which improves internal validity and supports causal conclusions about associative learning. Strength 2: objective, quantifiable measures such as saliva volume increase reliability and scientific credibility. Limitation: findings from animals may not generalise to complex human behaviour or human cognition.

Question 9

identifies ethical issue 1: potential harm or distress to animals oe **M1**

suggests how to address it: ensure strict welfare protocols, minimise distress, use anaesthesia where needed and provide humane housing and care, with ethical review approval oe **A1**

identifies ethical issue 2: lack of informed consent from animals and use of animals when alternatives might exist oe **M1**

suggests how to address it: apply the 3Rs (replacement, reduction, refinement) and require independent ethics committees to justify animal use and consider alternatives oe **A1**

Answer: Issue 1: animals may experience harm or distress. Addressed by strict welfare protocols, minimising distress, humane care and ethical review. Issue 2: animals cannot consent and alternatives may exist. Addressed by applying the 3Rs, independent ethics approval and justifying animal use over alternatives.

Question 10

Level 4 Shows accurate, well-developed knowledge of classical conditioning and Pavlov's research and integrates evaluation throughout. Arguments for and against are well balanced, using empirical evidence and clear implications for understanding behaviour. Application to real-world examples and theoretical limits is strong, showing critical insight and specialist terminology used appropriately. **10-12**

Level 3 Shows clear knowledge of classical conditioning with some developed evaluation. Both strengths and limitations are covered with some use of evidence. Application to examples is present but may be less fully developed. The answer is mostly coherent and uses relevant terminology. **7-9**

Level 2 Shows some knowledge of classical conditioning but limited evaluation. Points may be descriptive or one sided. Use of evidence or application is brief or partially irrelevant. Structure is limited and terminology used inconsistently. **4-6**

Level 1 Very limited knowledge or understanding. Evaluation is minimal or absent. Answer may be disorganised and lack relevant examples or evidence. **1-3**

Level 0 No creditworthy material. **0**

Indicative content:

- AO1: classical conditioning is learning through association where a neutral stimulus becomes a conditioned stimulus producing a conditioned response after repeated pairings with an unconditioned stimulus.
- AO1: Pavlov's laboratory research with dogs provides clear, objective evidence: the bell-food pairings led to salivation to the bell, demonstrating associative learning under controlled conditions.
- AO3 strength: high scientific credibility due to controlled laboratory methods, objective measurement and repeatable procedures, supporting reliable cause and effect claims about associative learning.
- AO3 strength: good explanatory power for simple reflexive or emotional responses such as salivation, taste aversion, and some phobias, and useful real-world applications such as systematic desensitisation for phobias and understanding advertising associations.
- AO3 limitation: mechanistic and deterministic, implying behaviour is shaped by stimulus history with limited role for active cognitive processes or free will, which raises philosophical and practical concerns when applied to human behaviour.
- AO3 limitation: poor at explaining novel, complex, or purposive human behaviours that involve insight, language, planning or creativity; cognitive factors and social learning are required to explain such behaviours.
- AO3 limitation: generalisability issues when extrapolating from animal laboratory studies to humans, especially for higher-order cognition and cultural influences; ethical concerns about animal research also limit direct application.
- AO3 balanced point: while conditioning explains many basic learned responses, modern perspectives integrate conditioning with cognitive and biological constraints, for example preparedness in phobias and the role of expectations, showing classical conditioning is necessary but not sufficient for a full account of behaviour.
- AO2 application: refer to Pavlov as supportive empirical evidence, and contrast with human examples such as conditioned taste aversion or advertising, then weigh these against cases requiring cognitive explanation like language acquisition.