2.6 Explanations for Forgetting: Retrieval Failure and Cue-Dependency

AQA 7182 · about 45 minutes · Write-in edition

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 State one ethical consideration when investigating state-dependent memory using drugs or alcohol, and give a brief safeguard researchers should use.

(Total for Question 1 is 1 mark)

2 Goodwin et al. (1969) tested state-dependent memory using alcohol. Outline the key finding of that study.

(Total for Question 2 is 4 marks)

3 State one limitation of applying Godden and Baddeley-style context-dependent findings to everyday studying, referring to ecological or practical differences between diving studies and school exams.

(Total for Question 3 is 1 mark)

4 Outline Tulving's encoding specificity principle as it applies to cue-dependent forgetting in memory research.

(Total for Question 4 is 2 marks)

5 Identify one methodological strength of Godden and Baddeley's experimental design that supports a causal interpretation of context effects.

(Total for Question 5 is 1 mark)

6 Briefly suggest one testable prediction that follows from retrieval failure theory that a researcher could investigate in a classroom setting.

(Total for Question 6 is 1 mark)

7 Outline the procedure and main result of Godden and Baddeley (1975) context-dependent memory study using divers and word lists.

(Total for Question 7 is 2 marks)

8 Explain briefly how state-dependent forgetting differs from context-dependent forgetting, giving one illustrative example of each in everyday situations.

(Total for Question 8 is 3 marks)

9 Outline one real-world application of retrieval failure research to study strategies, and explain why this application is useful for students preparing for exams.

(Total for Question 9 is 1 mark)

10 Explain briefly why a matched cue at retrieval does not guarantee perfect recall, even if the encoding specificity principle is true.

(Total for Question 10 is 1 mark)

11 Discuss retrieval failure as an explanation for forgetting. In your answer include relevant theory and evidence, evaluate strengths and limitations, and consider practical implications for revision and everyday memory. Refer to research and theory such as Tulving's encoding specificity principle, Godden and Baddeley (1975), Goodwin et al. or other state-dependent studies where appropriate.

(Total for Question 11 is 16 marks)

12 A student revises vocabulary for a French test in their bedroom but sits the exam in the school hall. Using retrieval failure due to absence of cues, explain two practical study strategies the student could use to reduce forgetting in the exam.

(Total for Question 12 is 2 marks)

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13 Give one piece of empirical evidence, other than Godden and Baddeley or Goodwin et al., that supports cue-dependent or state-dependent forgetting. Name the researcher(s) and year and give the key finding in one sentence.

(Total for Question 13 is 1 mark)

Mark scheme · 2.6 Explanations for Forgetting: Retrieval Failure and Cue-Dependency

Question 1

states an ethical issue and a safeguard, e.g. risk of harm from intoxication and safeguard of medical screening, informed consent and post-study monitoring oe **B1**

Answer: An ethical issue is the risk of harm from administering drugs or alcohol; researchers should medically screen participants, obtain informed consent and monitor and debrief participants, ensuring safety and the right to withdraw.

Question 2

states the manipulation: some participants learned material while intoxicated and others while sober oe **M1**

states the testing conditions included being intoxicated or sober at retrieval oe **M1**

reports the main result: recall was better when participants were in the same state at encoding and retrieval (intoxicated-intoxicated or sober-sober) oe **A1**

notes the implication that internal physiological state can act as a retrieval cue leading to state-dependent memory oe **A1**

Answer: Participants who learned material while intoxicated recalled it better when tested intoxicated than when sober, and vice versa for those who learned sober, showing state at encoding can act as a retrieval cue.

Question 3

states a valid limitation, e.g. the dramatic environmental change in underwater studies is larger than typical room-to-hall differences in exams, so effect sizes may be smaller in everyday settings oe **B1**

Answer: The underwater versus land contrast is an extreme context change; everyday differences between study room and exam hall are usually smaller, so context effects found in diving studies may overstate real-world impact.

Question 4

states that memory retrieval is most effective when cues present at encoding are also available at retrieval, oe **B1**

identifies that cues can be contextual or internal and that absence of appropriate cues can lead to retrieval failure oe **B1**

Answer: The encoding specificity principle states that recall is best when cues present at encoding are available at retrieval; if those cues are absent retrieval may fail. Cues may be external context or internal states.

Question 5

identifies a strength, e.g. the use of controlled manipulation of encoding and retrieval contexts and random allocation which supports causal inference oe **B1**

Answer: A strength is the controlled manipulation of learning and test environments with participants allocated to matching or mismatching conditions, allowing a causal conclusion that context influences recall.

Question 6

suggests a clear, testable prediction linking matched/mismatched cues to recall, e.g. students who revise with the same background noise as the exam will recall more than students who revise in silence then sit the exam with noise oe **B1**

Answer: For example, predict that students who practise answering questions in a room decorated like the exam hall will recall more of the material in the actual exam than students who only revise in a very different environment.

Question 7

procedure: participants learned lists of words either underwater or on land and were tested either in the same or a different environment oe **B1**

result: recall was better when learning and retrieval contexts matched (land-land or water-water) than when they differed oe **B1**

Answer: Divers learned word lists underwater or on land and were tested either in the same or the other environment; recall was better when the learning and test contexts matched.

Question 8

explains that context-dependent forgetting relates to external environmental cues such as location or background cues oe **M1**

explains that state-dependent forgetting relates to internal physiological or psychological states at encoding and retrieval oe **M1**

provides distinct examples: e.g. context: revising in bedroom but taking an exam in a hall; state: learning information while caffeinated but testing while tired oe **A1**

Answer: Context-dependent forgetting is caused by changes in external environmental cues, for example revising in a bedroom but taking the exam in a large exam hall. State-dependent forgetting is caused by differing internal states at encoding and retrieval, for example learning while caffeinated and being tired at test.

Question 9

identifies a real-world application, e.g. the suggestion to use mental reinstatement of context or to vary study locations to create multiple cues oe **B1**

Answer: One application is teaching students to use mental reinstatement of the study context and to revise in varied locations so information is linked to multiple cues, making recall more likely in different test settings.

Question 10

explains that memory depends on many factors including strength of original encoding, interference, passage of time and availability of multiple cues, so a matched cue helps but does not ensure recall oe **B1**

Answer: Because retrieval depends on encoding strength, interference and many other factors, a matching cue improves the chance of recall but cannot overcome very weak encoding or strong interference, so perfect recall is not guaranteed.

Question 11

Level 4 Knowledge of retrieval failure is accurate and well detailed. Discussion is thorough and balanced, integrating theory, empirical evidence and evaluation. The answer shows an effective range of strengths, limitations and practical implications, with clear links back to Tulving's encoding specificity principle and relevant studies. Application to revision and everyday memory is persuasive and well developed. Specialist terminology is used accurately.	**13-16**
Level 3 Knowledge is clear with some development. Discussion includes appropriate evidence and evaluation, but may be less wide ranging or less deeply developed. Some application to revision or everyday memory is made. Use of terminology is generally accurate.	**9-12**
Level 2 Knowledge of retrieval failure is present but partial. Discussion/evaluation is limited or descriptive rather than analytical. Application to practical implications may be brief or superficial. Terminology may be used inconsistently.	**5-8**
Level 1 Knowledge is minimal and answers may be simplistic or largely descriptive. Little if any evaluation or application is present. Answer lacks organisation and specialist terms are mostly absent or incorrect.	**1-4**
Level 0 No creditable content.	**0**

Indicative content:

- AO1: Tulving's encoding specificity principle, the idea that retrieval is more likely when cues at retrieval match those at encoding, and that absence of cue leads to retrieval failure rather than trace decay.
- AO1: Distinction between context-dependent forgetting (external cues such as environment, illustrated by Godden and Baddeley 1975) and state-dependent forgetting (internal cues such as mood or physiological state, illustrated by Goodwin et al. 1969 and Carter and Cassaday 1998).
- AO1/AO2: Summary of Godden and Baddeley procedure and finding that divers recalled best when learning and recall contexts matched, and Goodwin et al. showing matched intoxication states improved recall.
- AO3: Strength, experimental control of classic studies supports causal claims: manipulating encoding and retrieval contexts/states allows inference that cue match affects recall.
- AO3: Limitation, ecological validity and effect size: the underwater-land contrast is an extreme context change; many replications in naturalistic settings find smaller or inconsistent effects, limiting generalisability to everyday studying.
- AO3: Alternative explanations, such as strength of encoding and interference, which can reduce or override cue effects; a matched cue cannot recover information that was poorly encoded or heavily interfered with.
- AO3: Methodological critiques: some studies use recognition rather than recall, task differences matter, and demand characteristics or cheating in some field studies could confound results.
- AO3: Practical implications: advice to students to use cue reinstatement, varied revision contexts, use of retrieval practice and encoding elaboration to create multiple cues; explain why these strategies are useful and any limits to their effectiveness.
- AO3: Ethical considerations where studies use drugs or alcohol to manipulate state, and the caution needed when generalising from such studies.
- AO2: Balanced judgement: retrieval failure offers a useful and testable explanation for some forgetting, especially where cues are diagnostic, but it is not a complete account because forgetting is multi-causal and cue effects vary by context, task and encoding strength.

Question 12

suggests a strategy linked to cue reinstatement, e.g. mentally reinstating the bedroom context at exam time or using imagery of the revision room during retrieval oe	**M1**
suggests a second practical strategy, e.g. varying revision locations or practising retrieval in a quieter public space similar to the hall, and explains how this increases the range of cues available at test oe	**M1**

Answer: For example, before the exam the student could spend a minute mentally reinstating the revision environment (imagine the bedroom and smells) to provide internal cues; and they could vary where they revise or practise in a quieter communal room similar to the exam hall so more diverse contextual cues are encoded and available at test.

Question 13

names a real study with year and gives the key finding succinctly, e.g. Carter and Cassaday 1998 found that antihistamine-induced drowsiness at encoding and retrieval affected recall so matched drug states gave better memory oe **B1**

Answer: Carter and Cassaday (1998) found that antihistamine-induced drowsiness produced state-dependent effects, with better recall when participants were in the same drug-induced state at encoding and retrieval.