Write your name here

Surname
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Other names

Pearson Edexcel
International Advanced Level

Centre Number

Candidate Number

Psychology

International Advanced Subsidiary
Paper 1: Social and Cognitive Psychology

Friday 13 January 2017 – Morning
Time: 1 hour 30 minutes

Paper Reference
WPS01/01

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 64.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- The list of formulae and critical value tables are printed at the start of this paper.
- Candidates may use a calculator.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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FORMULAE AND STATISTICAL TABLES

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

Spearman's rank correlation coefficient

$$1-\frac{6\sum d^2}{n(n^2-1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
n	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
4	1.000	1.000	1.000	1.000	1.000
5	0.700	0.900	0.900	1.000	1.000
6	0.657	0.771	0.829	0.943	0.943
7	0.571	0.679	0.786	0.857	0.893
8	0.548	0.643	0.738	0.810	0.857
9	0.483	0.600	0.683	0.767	0.817
10	0.442	0.564	0.649	0.733	0.782
11	0.418	0.527	0.609	0.700	0.755
12	0.399	0.504	0.587	0.671	0.727
13	0.379	0.478	0.560	0.648	0.698
14	0.367	0.459	0.539	0.622	0.675
15	0.350	0.443	0.518	0.600	0.654
16	0.338	0.427	0.503	0.582	0.632
17	0.327	0.412	0.482	0.558	0.606
18	0.317	0.400	0.468	0.543	0.590
19	0.308	0.389	0.456	0.529	0.575
20	0.299	0.378	0.444	0.516	0.561
21	0.291	0.369	0.433	0.503	0.549
22	0.284	0.360	0.423	0.492	0.537
23	0.277	0.352	0.413	0.482	0.526
24	0.271	0.344	0.404	0.472	0.515
25	0.265	0.337	0.396	0.462	0.505
26	0.260	0.330	0.388	0.453	0.496
27	0.255	0.323	0.381	0.445	0.487
28	0.250	0.317	0.374	0.437	0.479
29	0.245	0.312	0.367	0.430	0.471
30	0.241	0.306	0.361	0.423	0.463

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

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Chi-squared distribution formula

$$X^2 = \sum \frac{(O-E)^2}{E} \qquad df = (r-1)(c-1)$$

Critical values for chi-squared distribution

	Level of significance for a one-tailed test					
	0.10	**0.05**	**0.025**	**0.01**	**0.005**	**0.0005**
	Level of significance for a two-tailed test					
df	**0.20**	**0.10**	**0.05**	**0.025**	**0.01**	**0.001**
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59
11	14.63	17.28	19.68	21.92	24.73	31.26
12	15.81	18.55	21.03	23.34	26.22	32.91
13	16.99	19.81	22.36	24.74	27.69	34.53
14	18.15	21.06	23.69	26.12	29.14	36.12
15	19.31	22.31	25.00	27.49	30.58	37.70
16	20.47	23.54	26.30	28.85	32.00	39.25
17	21.62	24.77	27.59	30.19	33.41	40.79
18	22.76	25.99	28.87	31.53	34.81	42.31
19	23.90	27.20	30.14	32.85	36.19	43.82
20	25.04	28.41	31.41	34.17	37.57	45.32
21	26.17	29.62	32.67	35.48	38.93	46.80
22	27.30	30.81	33.92	36.78	40.29	48.27
23	28.43	32.01	35.17	38.08	41.64	49.73
24	29.55	33.20	36.42	39.36	42.98	51.18
25	30.68	34.38	37.65	40.65	44.31	52.62
26	31.80	35.56	38.89	41.92	45.64	54.05
27	32.91	36.74	40.11	43.20	46.96	55.48
28	34.03	37.92	41.34	44.46	48.28	56.89
29	35.14	39.09	42.56	45.72	49.59	58.30
30	36.25	40.26	43.77	46.98	50.89	59.70
40	47.27	51.81	55.76	59.34	63.69	73.40
50	58.16	63.17	67.51	71.42	76.15	86.66
60	68.97	74.40	79.08	83.30	88.38	99.61
70	79.72	85.53	90.53	95.02	100.43	112.32

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

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Wilcoxon Signed Ranks test process

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1

  Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference
- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

Critical values for the Wilcoxon Signed Ranks test

	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
n	0.1	0.05	0.02
N=5	0	–	–
6	2	0	–
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

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SECTION A BEGINS ON THE NEXT PAGE.

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SOCIAL PSYCHOLOGY

SECTION A

Answer ALL questions in this section. Write your answers in the spaces provided.

1 Social power theory suggests there are five types of power that can be used to explain obedience to authority.

Define the following types of power.

(a) Coercive power

(1)

The authority figure has the ability, real or perceived, to punish a person if they do not obey, for example by giving a fine or a penalty.

(b) Expert power

(1)

The authority figure has superior knowledge or skills, real or perceived, compared with the person, so they are obeyed because they are believed to know best, such as a doctor.

(c) Legitimate power

(1)

The authority figure holds a formal position or role in a social hierarchy that gives them the right to expect obedience from the people they make demands of, such as a police officer.

(Total for Question 1 = 3 marks)

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QUESTION 2 BEGINS ON THE NEXT PAGE.

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2 Jakob investigated how many nurses followed the instructions given by a doctor. He conducted a study where he pretended to be a doctor and gave 30 nurses a set of instructions to administer incorrect medication for a patient. He repeated his study in four different hospitals. He recorded the results in **Table 1** below.

Hospital	Number of nurses (out of 30) who followed the instructions	$x - \bar{x}$	$(x - \bar{x})^2$
A	12	–6.25	39.06
B	16	–2.25	5.06
C	18	–0.25	0.06
D	27	8.75	76.56
Total	73		120.74
Mean number of all nurses who followed the instructions	18.25		

Table 1

(a) Calculate, using the information given in **Table 1**, the standard deviation for the number of nurses who followed the instructions.

You **must** show your calculations using the formula that can be found in the formulae and statistical tables at the front of this question paper.

Express your answer to two decimal points.

(2)

Space for calculations

$SD = \sqrt{\frac{\Sigma(x - \bar{x})^2}{n - 1}}$

$SD = \sqrt{\frac{120.74}{4 - 1}} = \sqrt{\frac{120.74}{3}}$

$SD = \sqrt{40.25} = 6.344...$

$SD = 6.34$ (to 2 d.p.)

Standard deviation for the number of nurses who followed the instructions: 6.34

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(b) Describe, using agency theory, why the nurses may have followed the instructions to administer incorrect medication for patients.

(2)

The nurses would see the doctor as a legitimate authority figure, so they moved from an autonomous state into an agentic state, acting as an agent carrying out his instructions. They would believe that responsibility for the consequences of giving the incorrect medication lay with the doctor, not themselves.

(c) Jakob replicated his study but he gave instructions by telephone to nurses. In this variation only four out of 30 nurses followed the instructions.

Explain **one** reason why only four nurses obeyed the doctor's instructions in this variation.

(2)

Giving instructions by telephone meant the nurses were not in the physical presence of the authority figure. Milgram (1963) showed in his variations that when the experimenter gave orders by telephone, reduced proximity of the authority figure lowered obedience, so the nurses felt less pressure to obey.

(Total for Question 2 = 6 marks)

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3 In social psychology you will have learned about the following contemporary study in detail:

- **Burger (2009)** Replicating Milgram: Would people still obey today?

Table 2 shows the results, rounded to the nearest whole number, of Burger's (2009) base condition by gender.

	Men	**Women**
Condition A Stopped at 150 electrical volts or earlier	33%	27%
Condition B Continued after 150 electrical volts	67%	73%

Table 2

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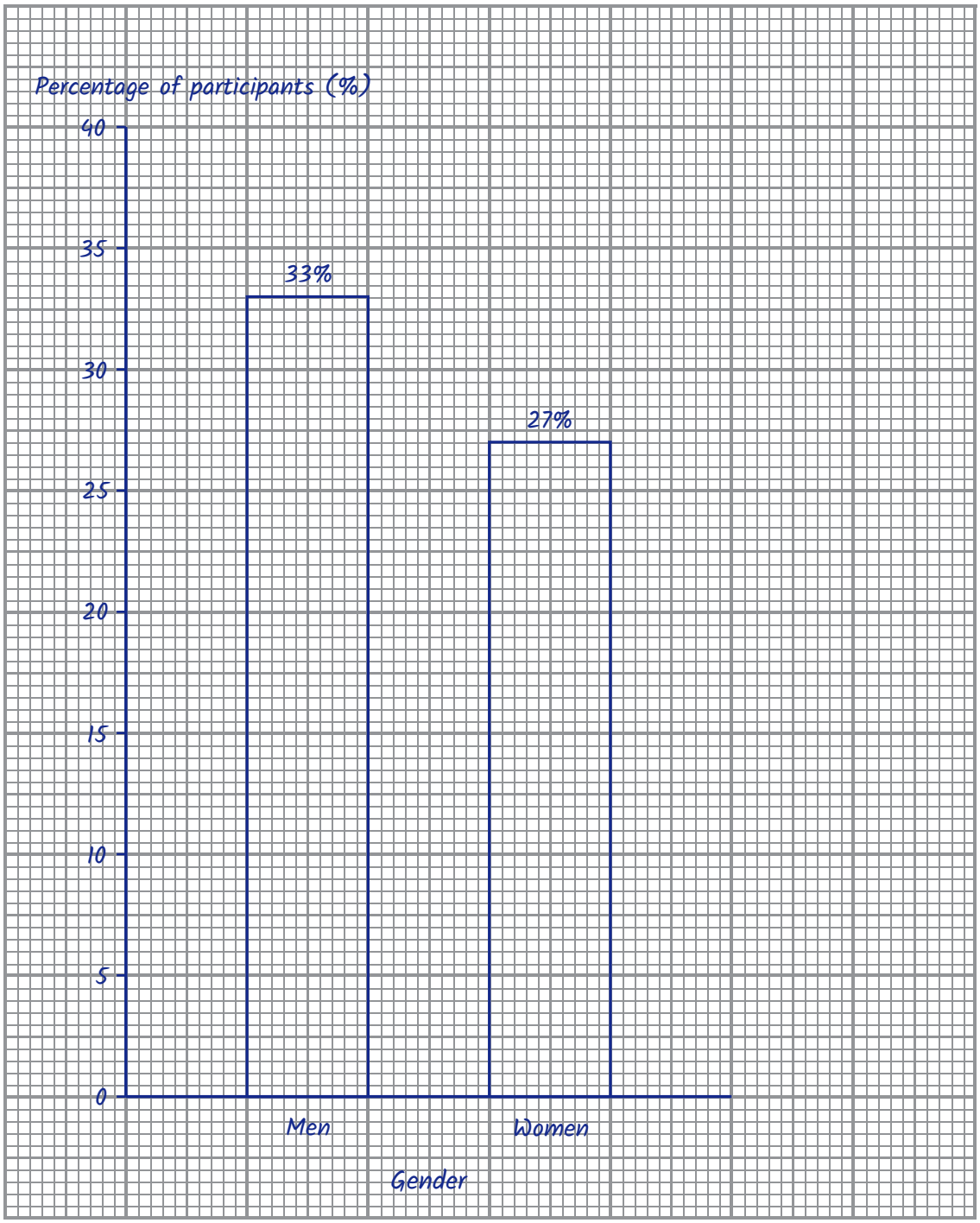
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(a) Draw a bar chart to represent the results for Condition A.

(3)

Title

Percentage of men and women who stopped at 150 volts or earlier (Condition A)



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(b) Explain **one** strength of Burger's (2009) study.

(2)

Burger used a large and varied sample of 29 men and 41 women aged between 20 and 81, recruited through newspaper adverts and flyers. This means the findings can be generalised to a wide population of adults in America, rather than just the men aged 20 to 50 used by Milgram.

(c) Explain **two** weaknesses of Burger's (2009) study.

(4)

1 *Burger used an electric shock task where a teacher shocked a learner for wrong answers. This lacks task validity, as people do not normally use electric shocks to punish poor learning, so the findings may not reflect obedience in everyday life.*

2 *Although participants were screened for mental health concerns, they were still deceived and believed they were shocking another person, which may have caused distress, so the study is still not fully ethical.*

(Total for Question 3 = 9 marks)

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4 The British Psychological Society (BPS) Code of Ethics and Conduct (2009) gives psychologists clear guidelines for conducting research. As a result, a number of studies in social psychology are now considered unethical, despite producing important findings to help us understand social behaviour.

Assess whether breaching ethical guidelines was necessary in social psychology research.

(8)

The BPS Code of Ethics and Conduct (2009) requires psychologists to gain informed consent, avoid deception where possible, give a right to withdraw, protect participants from harm and debrief them. Some social psychology studies breached these guidelines, so the question is whether the breach was needed to produce the findings.

Milgram (1963) deceived participants, telling them the study was about learning and that the shocks to the learner were real. Although they were told they could leave, the experimenter used verbal prods such as "you have no other choice, you must go on" to pressure them to continue, and many showed severe distress, such as sweating and nervous laughter. This breach could be seen as necessary, because if participants had known the aim or been allowed to stop easily, their behaviour would not have been genuine obedience, and our knowledge of how ordinary people obey destructive orders would not have progressed.

However, Burger (2009) shows that the breach was not entirely necessary. He stopped the study at 150 volts, screened out vulnerable participants, reminded them three times that they could withdraw and debriefed them immediately. He still found high obedience rates, similar to Milgram's at 150 volts, so pushing participants to 450 volts caused unnecessary trauma. Similarly, Asch (1951) tested conformity using a simple line judgement task in groups. Although there was mild deception about the confederates, the task caused little distress, showing that important social behaviour can be studied ethically without serious harm.

On the other hand, Moscovici (1969) did not gain fully informed consent, as participants were

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told the study was about colour perception rather than minority influence. Fully informed consent would have given away the aim and created demand characteristics, which would reduce the validity of the findings, so mild deception can be justified if participants are fully debriefed afterwards.

In conclusion, some breaches, such as mild deception, were necessary to avoid demand characteristics and gain valid findings. However, serious breaches that caused distress, as in Milgram's study, were not necessary, because later research such as Burger's shows that similar findings can be obtained in a more ethical way.

(Total for Question 4 = 8 marks)

TOTAL FOR SECTION A = 26 MARKS

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COGNITIVE PSYCHOLOGY

SECTION B

Answer ALL questions in this section. Write your answers in the spaces provided.

5 Kaleb investigated the effect of leading questions on eyewitness recall. He showed a video clip to 30 participants and then asked them three questions about what they had seen in the video clip. The experimental group was asked the same three leading questions, the control group was not asked any leading questions.

The results are shown in **Table 3**.

Condition	Number of participants who gave accurate responses to more than one question	Number of participants who gave inaccurate responses to more than one question
Control group: No leading questions	12	3
Experimental group: Leading questions	5	10

Table 3

(a) Identify the level of measurement for the data in **Table 3**.

(1)

Nominal data

(b) Describe why Kaleb chose to use an independent groups design for his investigation.

(2)

If the same participants had been asked both the leading and the non-leading questions, they may have guessed that the study was about leading questions and changed their answers, causing demand characteristics. Using an independent groups design meant each participant only answered one set of questions, which also avoids order effects from watching the same video clip twice.

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(c) Give **two** reasons why Kaleb used standardised questions in his study.

(2)

1 *So that every participant in the same condition was asked exactly the same three questions about the video clip, so any difference in accuracy is due to the leading questions.*

2 *So that Kaleb, or another researcher, could replicate the study using the same leading and non-leading questions to test the reliability of his results.*

Bartlett (1932) suggested that memory is reconstructive.

(d) Describe what is meant by reconstructive memory.

(2)

Reconstructive memory is the idea that memory is not an exact recording of an event but is rebuilt each time it is recalled. Our past experiences and expectations, stored as schemas, affect how we interpret and recall the event, so details may be added, left out or changed to fit what we expect, as in Bartlett's War of the Ghosts study.

(Total for Question 5 = 7 marks)

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6 The case of Henry Molaison (HM) has been used as evidence to support memory functions.

Analyse the use of case studies of brain damaged patients, such as the case of Henry Molaison (HM), as evidence of memory function.

(6)

HM had both of his hippocampi removed to treat epilepsy. Afterwards he could not form any new long-term declarative memories, but his short-term memory was intact. This suggests that information entering STM could not be transferred to LTM, so STM and LTM are separate stores, which supports the multi-store model. So case studies of brain damaged patients give unique evidence of which brain areas are needed for which memory functions.

HM could also learn new procedural skills, such as mirror drawing, without remembering having practised them. This shows that LTM is made up of different types, with procedural memory not depending on the hippocampus, so case studies help to explain the structure of memory in a way that could not be ethically tested by damaging healthy people.

The case of KF, who had brain damage after a motorcycle accident, showed impaired verbal STM but intact visual STM. This suggests STM has separate verbal and visual components, supporting Baddeley and Hitch's (1974) working memory model, so case studies broaden our understanding of memory function.

However, case studies are unique, and HM was one individual whose brain was also affected by years of epilepsy and medication. This means his case may not be representative of how memory works in all people, so the findings cannot easily be generalised to a wider population. We also do not know exactly how his memory worked before the operation, so there is no baseline to compare with.

(Total for Question 6 = 6 marks)

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7 Atkinson and Shiffrin (1968) proposed the multi-store model of memory.

(a) Explain **one** weakness with Atkinson and Shiffrin's (1968) multi-store model of memory.

(2)

The multi-store model is oversimplistic, as it sees STM as a single, passive store. Baddeley and Hitch's (1974) working memory model, supported by the case of KF, shows STM is more complex and active, with separate components for verbal and visual information.

(b) Mahmood was verbally given a list of 14 food items to buy from the shop. When he arrived at the shop to buy the food he could only remember nine of the food items.

Describe, using the multi-store model of memory, why Mahmood could not remember all 14 food items.

(2)

The capacity of STM is limited to about 7 ± 2 items, so Mahmood could not hold all 14 items in STM. Only items that were rehearsed were transferred to LTM, so due to the primacy and recency effect he would be most likely to remember the first and last items from the list, and the middle items were displaced.

(c) Calculate the percentage of food items Mahmood could remember when he arrived at the shop. Express your answer to two decimal places.

(1)

Space for calculations

$\frac{9}{14} \times 100 = 64.2857...\ \%$

$= 64.29\%$

Percentage of food items Mahmood could remember when he arrived at the shop: *64.29%*

(Total for Question 7 = 5 marks)

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8 In cognitive psychology you will have learned about the following contemporary study in detail:

- **Schmolck et al (2002)** Semantic knowledge in patient HM and other patients with bilateral medial and lateral temporal lobe lesions.

Evaluate the contemporary study by Schmolck et al (2002).

(8)

Schmolck et al (2002) investigated whether semantic memory depends on the hippocampus or on the lateral temporal cortex. They studied six patients with brain damage: three with damage limited to the medial temporal lobe (MTL), and three, including HM, whose damage extended into the lateral temporal cortex (MTL+). They were compared with eight healthy control participants matched for age and education. Participants completed tests of semantic knowledge using line drawings of animals and objects, such as naming pictures, sorting pictures into categories and giving definitions of the items. The MTL patients performed similarly to the controls, while the MTL+ patients, including HM, were impaired, and the more lateral temporal damage they had, the worse their semantic knowledge was.

A strength is that the study was well controlled. MRI scans were used to measure each patient's brain damage, and the same standardised tests were given to all participants, so the study can be replicated to test reliability. Most tests, such as naming and sorting, were scored as correct or incorrect, giving quantitative data that is objective and reduces experimenter bias. Definitions were qualitative, which can be subjective to score, but Schmolck et al used more than one rater, which increases inter-rater reliability. The control group also gives a baseline to compare the patients with, so differences can be linked to the brain damage.

However, the sample of only six patients is very small, and each patient's damage had a different cause and extent, so the findings may not generalise to how semantic memory works in the wider population. The tasks, such as categorising pictures of common items, are also artificial, as people do not usually sort pictures in everyday life, so the study lacks task validity

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and ecological validity.

Overall, the study is a reliable and objective test that provides strong evidence that semantic memory depends on the lateral temporal cortex rather than the hippocampus. However, the small, unique sample and artificial tasks mean its conclusions should be generalised with caution.

(Total for Question 8 = 8 marks)

TOTAL FOR SECTION B = 26 MARKS

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SECTION C

Answer the question in this section. Write your answer in the space provided.

9 Mia and Felipe carried out research to test acoustic similarity effect on short- and long-term memory. They set up an experimental group where an acoustically similar word list was shown to eight participants for them to learn. The control group of six participants was shown an acoustically dissimilar word list. Both groups had to recall the words immediately after the task for the short-term memory test, and then later to test long-term memory.

Mia and Felipe's university professor has criticised their investigation. However, they disagree with the professor and believe their investigation was conducted well.

Evaluate Mia and Felipe's use of the laboratory experimental method in their investigation of memory.

You must make reference to the context in your answer.

(12)

A laboratory experiment is carried out in a controlled, artificial setting, where the researcher manipulates an independent variable (IV) and measures the effect on a dependent variable (DV) using a standardised procedure. Here, Mia and Felipe manipulated whether the word list was acoustically similar or acoustically dissimilar, and measured recall in short-term and long-term memory.

Mia and Felipe could defend their study because a laboratory experiment allows tight control of situational and participant variables. Both groups learned their list in the same conditions and recalled the words at the same times, immediately and later on, so any difference in recall is more likely to be caused by acoustic similarity. This means cause and effect can be established between the IV and the DV. Baddeley (1966b) used a similar controlled procedure and found that acoustically similar words were recalled worse in STM, while semantically similar words affected LTM, so Mia and Felipe's findings could be compared with his.

The standardised procedure, with each group shown the same word list and given the same instructions, also means the study is replicable, so the professor or other researchers could

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repeat it to check the reliability of the results. Having a control group of six participants learning a dissimilar list gives a baseline to compare the experimental group with. A laboratory setting is also ethical, as Mia and Felipe could gain informed consent from all 14 participants and give them the right to withdraw, unlike in a field experiment where participants are unaware they are being studied.

However, the professor could argue that the laboratory setting is artificial, so the study lacks ecological validity. Learning lists of acoustically similar words is not how people use memory in everyday life, so the task lacks task validity, like Peterson and Peterson's (1959) trigram study, and the findings may not generalise to real-life memory. Participants know they are in a memory study, so they may show demand characteristics, such as trying harder to rehearse the words, which reduces validity.

The professor could also criticise the sample. With only 14 participants, eight in one group and six in the other, the sample is small and the groups are unequal, so individual differences will have a large effect. As an independent groups design was used, participant variables, such as some people having a better memory, may explain the difference in recall rather than the word lists, which reduces the control the laboratory method is meant to give.

In conclusion, Mia and Felipe are right that the laboratory method gave them good control and a replicable, standardised procedure to test cause and effect, as Baddeley (1966b) did. However, the professor's criticisms of low ecological validity and a small, unequal sample are valid, so their results would be more convincing with a larger, matched sample and a more realistic memory task.

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(Total for Question 9 = 12 marks)

TOTAL FOR SECTION C = 12 MARKS
TOTAL FOR PAPER = 64 MARKS

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