Please check the examination details below before entering your candidate information

Candidate surname: *StemUp Model Solution*

Other names:

Pearson Edexcel
International
Advanced Level

Centre Number

Candidate Number

Tuesday 12 January 2021

Morning (Time: 1 hour 30 minutes)

Paper Reference **WPS01/01**

Psychology

International Advanced Subsidiary
Paper 1: Social and Cognitive Psychology

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 statistical 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**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830
11	0.536	0.618	0.709	0.755	0.800
12	0.503	0.587	0.678	0.727	0.769
13	0.484	0.560	0.648	0.703	0.747
14	0.464	0.538	0.626	0.679	0.723
15	0.446	0.521	0.604	0.654	0.700
16	0.429	0.503	0.582	0.635	0.679
17	0.414	0.485	0.566	0.615	0.662
18	0.401	0.472	0.550	0.600	0.643
19	0.391	0.460	0.535	0.584	0.628
20	0.380	0.447	0.520	0.570	0.612
21	0.370	0.435	0.508	0.556	0.599
22	0.361	0.425	0.496	0.544	0.586
23	0.353	0.415	0.486	0.532	0.573
24	0.344	0.406	0.476	0.521	0.562
25	0.337	0.398	0.466	0.511	0.551
26	0.331	0.390	0.457	0.501	0.541
27	0.324	0.382	0.448	0.491	0.531
28	0.317	0.375	0.440	0.483	0.522
29	0.312	0.368	0.433	0.475	0.513
30	0.306	0.362	0.425	0.467	0.504

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

SOCIAL PSYCHOLOGY

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

1 Asch (1951) conducted research into conformity.

(a) Describe **one** finding of Asch's (1951) study.

(2)

Asch found that around three-quarters (about 75%) of participants conformed to the incorrect majority answer at least once on the critical trials. Their errors were in the direction of the distorted majority answer, even though the correct line was obvious, whereas in a control group with no majority, errors were very rare.

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(b) Explain **one** strength and **one** weakness of Asch's (1951) research into conformity.

(4)

Strength

Asch used a standardised procedure: the line lengths, the order of the 18 trials (12 critical) and the confederates' answers were the same for every participant, so all experienced the same controlled conditions. This means the study can be replicated to check whether it is a reliable test of social pressure to conform to a majority.

Weakness

Asch's sample was 50 male students from Swarthmore College in America, which is unrepresentative of females and of older adults. So his results lack generalisability, as he cannot conclude that females or people from other cultures would conform to a majority in the same way as these young American men.

(Total for Question 1 = 6 marks)

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2 In your studies of social psychology, you will have conducted a practical investigation.

(a) Describe the procedure you used for your practical investigation in social psychology.

(4)

We designed a questionnaire about obedience to authority figures in uniform compared to people in everyday clothing. It had 8 closed questions, where respondents rated how likely they were to obey each person on a scale of 1 to 10 (eg a police officer asking them to move their car), and 2 open questions asking them to explain why they would or would not obey. We gave it to five students as a pilot study to check that the wording of the questions could be understood. We then gathered an opportunity sample of 20 respondents (students and staff at our college) who were available in the college canteen at lunchtime. Each respondent gave informed consent, completed the questionnaire on their own in about 10 minutes, and was then debriefed and reminded of their right to withdraw their data.

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(b) Describe the results of the quantitative data that you gathered in your practical investigation in social psychology.

(2)

Respondents gave a mean rating of 8.4/10 for how likely they were to obey a uniformed police officer, compared to a mean of 3.9/10 for a person in everyday clothes giving the same order. Also, 85% (17 of 20) said they would obey a uniformed security guard, but only 30% (6 of 20) would obey someone in casual clothing.

(Total for Question 2 = 6 marks)

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3 Mary investigated the obedience of employees in their workplace. She wanted to find out if obedience levels changed depending on the status of the authority figure at work. She sampled a total of 300 employees in four different workplaces.

Mary found that 92% of her sample said they would obey their boss even if they disagree with the boss's decision.

(a) Calculate the number of employees who said they would obey their boss even if they disagree with the boss's decision.

(1)

Space for calculations

$92\% \text{ of } 300 = \frac{92}{100} \times 300$

$= 276$

Number of employees 276

(b) A total of 30 employees said they would follow the instructions of a colleague even if they disagree with them. The remaining employees said they would not.

Calculate the ratio of employees who would follow the instructions of a colleague to those who would not.

You **must** give your ratio in the lowest form.

(1)

Space for calculations

Would not follow $= 300 - 30 = 270$

$30 : 270 \quad (\div 30) \quad = 1 : 9$

Ratio 1 : 9

(Total for Question 3 = 2 marks)

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4 The British Psychological Society (BPS) Code of Ethics and Conduct (2009) outlines the considerations that psychologists must make when conducting research.

Explain **two** ethical issues that should be considered when conducting research in social psychology.

1 *Protection from harm: researchers must not cause participants physical or psychological harm or distress, and should leave them in the same state as when they arrived. This must be considered in obedience research, as Milgram (1963) caused participants high levels of stress, with some sweating and trembling and three having seizures, which the BPS (2009) code would not allow.*

2 *Confidentiality: participants' data must be kept private so they cannot be identified when the research is published. This matters in social psychology, as a participant who scored highly on Adorno's F-scale for authoritarian personality may not want others to know, as it could change how people view them.*

(Total for Question 4 = 4 marks)

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5 Assess how well agency theory can explain obedience in society.

(8)

Agency theory (Milgram, 1974) states that people have two states. In the autonomous state they act on their own free will and feel responsible for their actions. When given an order by a legitimate authority figure they can enter an agentic state, where they see themselves as an agent carrying out the wishes of the authority figure and believe that responsibility lies with that person. When orders go against their values they feel moral strain, which they resolve by giving up their autonomy and obeying. Obedience is more likely when the authority figure is of high status and legitimate, eg a scientist at Yale University, and when they are close by.

Agency theory is supported by Milgram (1963), where 65% of participants went to 450 volts, many saying they continued because the experimenter took responsibility. When the experimenter gave orders by telephone, obedience fell sharply, showing that proximity of authority matters, as the theory predicts. Burger (2009) found 70% continued past 150 volts, so the theory still explains obedience in modern society. It can also explain real atrocities: soldiers who massacred civilians at My Lai in 1968 claimed they were following orders from superiors in the army hierarchy. Hofling et al. (1966) found 21 of 22 nurses obeyed an unknown doctor's phone order to give an overdose, showing obedience to legitimate authority in a real workplace.

However, agency theory cannot explain why some people disobey. Gretchen Brandt refused to continue in Milgram's research because of her experiences in Nazi Germany, so she kept her free will. This suggests individual differences, such as authoritarian personality (Adorno et al., 1950), also affect obedience. Also, much obedience in society, such as keeping to a speed limit, happens with no authority figure present, which agency theory struggles to explain. The agentic state is also hard to measure, so the explanation may be circular.

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Overall, agency theory explains well why people obey direct orders from legitimate, nearby authority figures, but it is only a partial explanation, as personality and social factors are needed to explain disobedience and everyday obedience.

(Total for Question 5 = 8 marks)

TOTAL FOR SECTION A = 26 MARKS

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SECTION B

COGNITIVE PSYCHOLOGY

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

6 In your studies of cognitive psychology, you will have learned about the working memory model (Baddeley and Hitch, 1974).

(a) Describe the phonological loop in relation to the working memory model.

(2)

The phonological loop is the slave system that stores auditory (sound-based) information, such as words, for a limited duration of about two seconds in the phonological store. It uses subvocal rehearsal in the articulatory control process (the inner voice) to maintain the auditory information in short-term memory.

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(b) Explain **one** strength and **one** weakness of the function of the central executive in the working memory model.

(4)

Strength

Research with patients with memory deficiencies supports the central executive's role in delegating tasks. Baddeley et al. (1986) found that people with Alzheimer's disease were less able than controls to perform dual visual and verbal tasks, which require the central executive to allocate attention between slave systems.

Weakness

There is a lack of scientific evidence for exactly how the central executive works as the master system of short-term memory. Baddeley and Hitch (1974) only describe what they believe it does, such as controlling attention, without empirical research measuring its actual capacity or processing, so it is vague and hard to test.

(Total for Question 6 = 6 marks)

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7 George conducted an experiment into encoding in short-term memory. He gathered a volunteer sample of 10 participants. Each participant took part in both conditions.

- Condition A: each participant was read the same list of 15 acoustically similar sounding words, such as brew, new, blue and few.
- Condition B: each participant was read the same list of 15 acoustically dissimilar sounding words, such as paper, car, tree and boat.

Participants were asked to recall as many words as they could after a 10-second interference task. George recorded how many words each participant could recall correctly.

His results are shown in **Table 1**.

Participant	Condition A Number of acoustically similar sounding words recalled correctly	Condition B Number of acoustically dissimilar sounding words recalled correctly
A	8	11
B	6	10
C	3	8
D	4	9
E	7	11
F	5	7
G	1	9
H	4	10
I	3	9
J	6	8
Median score	**4.5**	**9**

Table 1

(a) Calculate the mean score for participants in **Condition A**.

(1)

Space for calculations

$(8 + 6 + 3 + 4 + 7 + 5 + 1 + 4 + 3 + 6) \div 10$

$= 47 \div 10 = 4.7$

Mean score 4.7

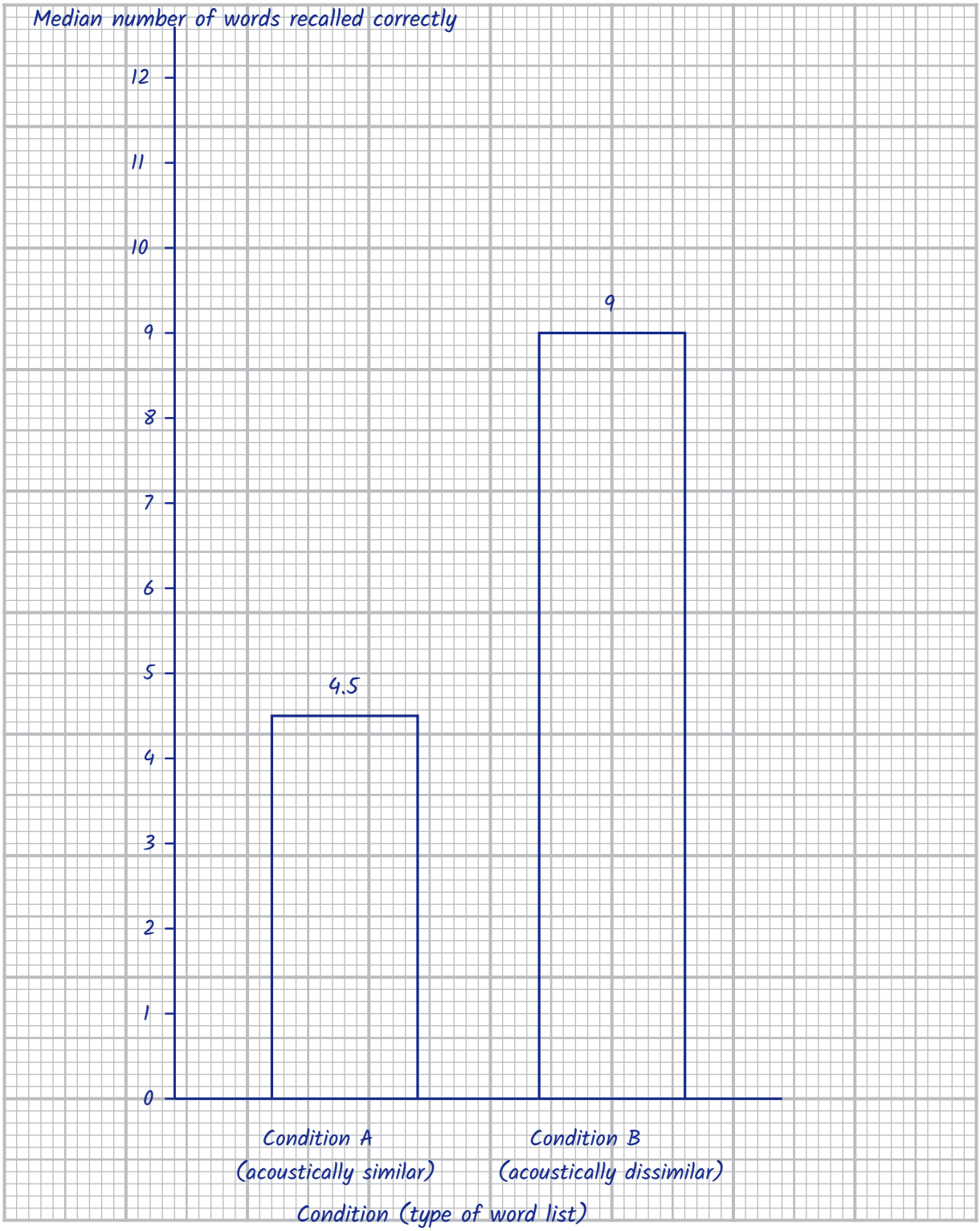
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(b) Draw an appropriate graph for the median scores in George's experiment.

(3)

Title *Bar chart showing the median number of words recalled correctly for acoustically similar (Condition A) and acoustically dissimilar (Condition B) words*



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(c) Explain, using encoding, **one** reason why George may have found the results in **Table 1**.

(2)

Short-term memory mainly encodes information acoustically, so acoustically similar words such as brew, new and blue are easily confused with each other in the short-term store. This phonological similarity effect explains why George found the median for dissimilar words (9) was twice that for similar words (4.5).

(d) Explain **one** strength of George using a repeated measures design in his experiment into short-term memory encoding.

(2)

George used the same 10 participants in both word-list conditions, which removes participant variables that could affect recall. So he can be more certain that it is acoustic similarity of the words affecting recall, and not individual differences such as one person having a better short-term memory than another.

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(e) Explain **two** improvements George could make to the procedure of his experiment into short-term memory encoding.

(4)

1 *George should use words of the same length and familiarity in both lists, eg only three-letter, one-syllable words, as "paper" is longer than "new". This would increase the validity of his findings, as word length would not affect the number of words recalled correctly, only acoustic similarity.*

2 *George should counterbalance the conditions, so five participants do Condition A first and five do Condition B first. This reduces order effects, such as practice or boredom, which could otherwise be a confounding variable on recall accuracy in the second condition he tested.*

(Total for Question 7 = 12 marks)

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8 Diego and Theresa witnessed a robbery at a local supermarket. They were both asked to give witness statements to the police about what they saw.

Diego told the police he saw two older men with guns wearing black clothing running out of the supermarket with a bag. He said the men got into a dark blue car that was waiting outside.

Theresa told the police she saw two young men with knives wearing jeans and dark hooded jackets shouting at the cashier. They ran out of the supermarket with a bag of money.

Discuss, using reconstructive memory (Bartlett, 1932), including schema theory, why Diego and Theresa gave different witness statements to the police.

You must make reference to the context in your answer.

(8)

Bartlett (1932) argued that memory is not like a video recorder. Instead, memories are reconstructed each time they are recalled, using an "effort after meaning", so they usually contain errors. When we recall an event we fill in gaps using schemas, which are packets of knowledge about a person, object or event built from past experience or from other sources such as television. In his War of the Ghosts study, participants changed an unfamiliar Native American story to fit their own cultural schemas, through rationalisation, levelling (leaving out details) and sharpening (exaggerating details). Stereotypes can also affect memory, as people fill in blanks with preconceived ideas.

Diego and Theresa would not have a video-like record of the supermarket robbery, which was sudden and stressful, so both of their statements may contain reconstructive errors. Diego may have filled the gaps with a stereotype of an armed robber, as a schema from films could lead him to recall "older men with guns wearing black clothing" and a getaway car waiting outside, which fits a typical robbery script. Theresa, however, may hold a schema of young males in "dark hooded jackets" carrying knives, perhaps from a past experience or news reports of local crime, so her recall was shaped to fit this. Each witness has different past experiences, so their schemas differ, which explains why they disagreed on age, weapons and clothing. Theresa also sharpened details such as the men shouting at the cashier, while Diego

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levelled these and focused on the car.

However, schema theory may not fully explain the differences. Diego and Theresa may simply have seen different parts of the event from different positions, so their statements could both be partly accurate. Yuille and Cutshall (1986) found that witnesses to a real armed robbery gave detailed, accurate accounts months later, so memory is not always heavily reconstructed. Also, schemas are hard to observe directly, so it is difficult to prove that schemas caused these errors.

Overall, reconstructive memory and schema theory give a convincing explanation of why Diego and Theresa gave different statements, as their schemas of robbers differ, but viewing position and stress are also likely to have contributed.

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(Total for Question 8 = 8 marks)

TOTAL FOR SECTION B = 26 MARKS

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SECTION C

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

9 In your studies of social psychology, you will have learned about the following contemporary study in detail:

- Burger (2009).

Evaluate the contemporary study by Burger (2009).

(12)

Burger (2009) carried out a partial replication of Milgram's (1963) obedience study at Santa Clara University in California. Participants were 29 men and 41 women in the base condition, aged 20 to 81, with education ranging from high school to Master's degree level. A two-step screening process removed anyone with emotional or psychological problems, and anyone who had taken more than two psychology classes. Participants acted as "teacher" and gave electric shocks to a confederate "learner" for wrong answers using a shock generator. The procedure was stopped at 150 volts, as Milgram's data showed most who passed this point went to the end. The same experimenter and script were used for everyone and all were paid $50, and told at least three times they could withdraw and keep the money. Burger found that 70% continued past 150 volts, similar to Milgram's findings.

A strength is that the sample varied in age and education, making it more representative of American adults than Milgram's sample, so the findings can be generalised to a wider population. The standardised procedure, with the same script, prods and payment, means the study can be replicated to test the reliability of its findings about obedience. Burger's study was also more ethical than Milgram's, as the screening excluded anyone likely to be highly distressed, and stopping at 150 volts reduced the stress experienced, so it shows obedience can be studied without causing serious harm.

However, the study took place in an unfamiliar laboratory, so the teachers may not have acted as they normally would, which means it lacks ecological validity. The task of shocking

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someone for wrong answers in a memory test is unrealistic and not something people do in everyday life, so it lacks task validity. Also, because it was not a full replication and stopped at 150 volts, we cannot be sure that participants would really have continued to 450 volts, so it only gives limited evidence that people obey to the same extent as in 1963. Excluding people who had studied psychology and those with emotional problems may also have made the sample less representative.

In conclusion, Burger (2009) is a valuable, more ethical and reliable study showing that obedience levels have stayed high since Milgram's time, but its artificial task and the 150-volt cut-off limit how far its findings can be applied to real-life obedience.

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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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