Please check the examination details below before entering your candidate information

Candidate surname	Other names
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Pearson Edexcel
International Advanced Level

Centre Number | | | | | |

Candidate Number | | | | |

Thursday 11 October 2018

Afternoon (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 Explain **one** factor that could affect conformity.

(2)

Group size affects conformity. As the size of the unanimous majority increases, people are more likely to conform because the normative pressure to fit in is greater. Asch (1956) found that with only one confederate conformity was very low, but it rose sharply with three confederates, although adding more than three made little further difference.

(Total for Question 1 = 2 marks)

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2 Helena completed an investigation about conformity using participants from her local school.

- In Condition A there was one naive participant.
- In Condition B there were four confederates and one naive participant.

Both conditions listened to 15 well-known, common songs that Helena had previously selected.

In Condition A, the participant was asked to give the song title.

In Condition B, the confederates sometimes gave a previously agreed incorrect song title in order to measure if the naive participant would agree with the group majority.

(a) State the independent variable for this study.

(1)

Whether the naive participant named the 15 songs alone (Condition A) or in a group with four confederates who sometimes gave a wrong song title (Condition B).

(b) Explain **one** strength and **one** weakness of the investigation conducted by Helena.

(4)

Strength

Helena used 15 well-known, common songs that she had selected in advance, so participants were likely to know the correct title. This increases task (internal) validity, because when a naive participant gave the confederates' incorrect title it is more likely to be due to conformity to the group majority rather than simply not knowing the song.

Weakness

The investigation took place in a local school, so it would have been difficult to control extraneous variables such as noise from other students in the corridors. This reduces reliability, as some participants may have been distracted from hearing and naming the songs, so their wrong answers may not reflect conformity and the results may not be consistent if the study was repeated.

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Helena replicated both conditions of her investigation eight times using different participants in each replication.

The results for the number of incorrect song titles given by each participant is shown in **Table 1**.

Participant	Condition A No Confederates	Participant	Condition B Four Confederates
A	2	I	7
B	1	J	1
C	3	K	8
D	4	L	6
E	3	M	7
F	2	N	8
G	0	O	1
H	1	P	8

Table 1

(c) State **one** conclusion Helena could make using the results in **Table 1**.

(1)

Participants gave more incorrect song titles with four confederates (total 46, mean 5.75) than when alone (total 16, mean 2), so being in a group majority increased conformity for most participants.

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(d) Calculate the standard deviation for Condition B using **Table 2** below.

The formula can be found in the formulae and statistical tables at the front of the paper.

You **must** give your answer to **two** decimal places.

(2)

Participant	Score	$x - \bar{x}$	$(x - \bar{x})^2$
I	7	1.25	1.56
J	1	-4.75	22.56
K	8	2.25	5.06
L	6	0.25	0.06
M	7	1.25	1.56
N	8	2.25	5.06
O	1	-4.75	22.56
P	8	2.25	5.06
Total	46		
Mean score for Condition B	5.75		

Table 2

Space for calculations

$\Sigma(x - \bar{x})^2 = 1.56 + 22.56 + 5.06 + 0.06 + 1.56 + 5.06 + 22.56 + 5.06 = 63.48$

$SD = \sqrt{\frac{63.48}{8 - 1}} = \sqrt{9.0686}$

$= 3.011... = 3.01$ (2 d.p.)

Standard deviation for Condition B 3.01

(Total for Question 2 = 8 marks)

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3 Describe what is meant by the term 'normal distribution'.

A normal distribution is a symmetrical, bell-shaped frequency curve where most scores cluster around the middle. The mean, median and mode are all equal and fall at the mid-point (the highest point of the curve), and the frequency of scores tails off equally on either side, with about 68% of scores within one standard deviation of the mean.

(Total for Question 3 = 2 marks)

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4 In your social practical investigation you will have completed an analysis of qualitative data.

(a) Describe how you analysed the qualitative data from your social practical investigation.

(2)

My practical was a questionnaire on gender differences in obedience with open questions asking why people obey or disobey their teachers. I used thematic analysis: after reading the answers several times I identified recurring themes, such as agentic themes (eg "the teacher is in charge") and autonomous themes (eg "I decide for myself"), coded each answer into these themes and counted them, which let me compare whether the men or the women in my sample were more obedient.

(b) Explain **one** strength and **one** weakness of how you analysed the qualitative data from your social practical investigation.

(4)

Strength

I defined eight fixed themed categories for obedience before coding, with clear examples of what counted in each. This increased reliability, because another researcher could use the same categories on my participants' answers and check they got the same results (inter-rater reliability), or retest my findings in another study.

Weakness

Reducing participants' answers about why they are sometimes obedient in class into themes may reduce validity, because breaking the data down loses the context, eg why a participant obeyed in one class but not another. Also, I chose the themes myself, so my own expectations about gender may have biased which answers were put into the agentic or autonomous themes.

(Total for Question 4 = 6 marks)

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5 Assess whether social power theory is a complete explanation of obedience.

(8)

Social power theory (French and Raven, 1959) suggests that people obey an authority figure because of the type of power that person holds. There are five types of power. Legitimate power comes from a formal position or role that gives the right to demand obedience, such as a police officer. Reward power is the ability to give incentives, such as a pay rise, in return for obeying. Coercive power is the ability to punish disobedience. Expert power comes from having specialist knowledge, and referent power comes from being liked, respected or identified with.

The theory has real-world support, as it explains everyday obedience well. For example, Bickman (1974) found people were more likely to obey a confederate dressed as a security guard than one in ordinary clothes, which suggests that a uniform signals legitimate power. It also explains why people stop at a police officer's signal even when they are not threatened, and it can be applied to workplaces to show how managers can use reward rather than coercive power.

However, it is not a complete explanation. Agency theory (Milgram, 1973) argues that people obey because they shift from an autonomous state into an agentic state, seeing themselves as acting for the authority figure and so not responsible, rather than because of the type of power held. Milgram's participants obeyed to 450 volts even though the experimenter had no real coercive power and payment was promised regardless. Social impact theory (Latane, 1981) also suggests obedience depends on the strength, immediacy and number of sources; when the experimenter gave orders by telephone, obedience fell even though his legitimate power was unchanged. Social power theory also ignores individual differences, eg the authoritarian personality (Adorno et al., 1950), so it cannot explain why some people resist the same authority figure.

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Overall, social power theory gives a useful description of the sources of power that make obedience likely, but it is not complete because it does not explain the psychological state of the person obeying, situational factors such as proximity, or personality, so it is best combined with agency theory and social impact theory.

(Total for Question 5 = 8 marks)

TOTAL FOR SECTION A = 26 MARKS

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SECTION B BEGINS ON THE NEXT PAGE.

SECTION B

COGNITIVE PSYCHOLOGY

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

6 In cognitive psychology, you will have learned about one of the following contemporary studies in detail.

- Darling et al. (2007) Behavioural evidence for separating components within visuo-spatial working memory.
- Sacchi et al. (2007) Changing history: doctored photographs affect memory for past public events.

Chosen study

Sacchi et al. (2007) Changing history: doctored photographs affect memory

(a) Describe the procedure of your chosen contemporary study.

(3)

Participants (including 187 undergraduates) were shown one combination of photographs of two public events, the 1989 Tiananmen Square protest in Beijing and the 2003 anti-war protest in Rome, each either the original or a doctored version (eg a crowd of onlookers added near the tank in the Beijing photograph). Then they answered three sets of multiple-choice questions, eg about their memory of the event, such as how many people took part and how violent it was, and attitude questions about protests and civil participation. The photographs and questions were presented in a printed questionnaire completed in classroom settings.

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(b) Explain **one** strength and **one** weakness of this contemporary study.

(4)

Strength

Sacchi used doctored photographs of two real, famous events that happened in society, the Tiananmen Square protest in Beijing and the protest near the Colosseum in Rome. Because participants' memories were of real public events they had learned about, this increases task (internal) validity, as the study measures how altered images affect genuine memories of the past.

Weakness

Only 31 of the 187 undergraduate participants were male, and they came from just two universities. This reduces generalisability to the male target population, as the findings about how doctored photographs change memory and attitudes are mostly based on female students and may not apply to men or to people outside these universities.

(Total for Question 6 = 7 marks)

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7 Philippa carried out an investigation into memory. She used a random sample of 16 participants from her local college of 208 students.

- In Condition A participants learned and recalled a list of words in a quiet classroom.
- In Condition B the same participants learned and recalled a second list of words in a noisy coffee shop.

(a) Calculate the fraction of the college student population Philippa used in her memory investigation.

You **must** express the fraction in its lowest form.

(1)

Space for calculations

$\frac{16}{208} = \frac{16 \div 16}{208 \div 16} = \frac{1}{13}$

Fraction 1/13

(b) Describe how Philippa could have obtained her random sample of 16 participants from the 208 college students.

(2)

Philippa could put the names of all 208 students from the college register on separate slips of paper into a hat, mix them, and draw out names without looking. The first 16 names drawn would be her participants, so every student had an equal chance of being chosen for the two conditions.

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(c) Describe how Philippa could have used counterbalancing in her investigation.

(2)

Philippa could split her 16 participants into two halves. The first 8 participants would learn and recall a word list in the quiet classroom (Condition A) first, then the noisy coffee shop (Condition B). The second 8 would do the noisy coffee shop (Condition B) first and then the quiet classroom (Condition A), so order effects such as practice or fatigue are balanced out.

(d) Explain **two** variables that Philippa may have needed to control when designing her word lists.

(4)

1 *Number of words: both word lists should contain the same number of words (eg 20), so the results can be fairly compared in terms of the number of words recalled in the classroom and the coffee shop, as neither list is longer and therefore harder to remember.*

2 *Word difficulty: each list should be made up of common, familiar words of a similar length that all the college students could understand, so one word list is not more difficult to learn than the other and any difference in recall is due to the noise level rather than the words used.*

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(e) Philippa decides to use a $p \leq 0.01$ level of significance on her results.

State what is meant by '≤'.

(1)

Less than or equal to.

Philippa concluded that students recall less words from a word list they learn in a noisy coffee shop than from a word list they learn in a quiet classroom.

(f) Justify, using working memory model, the conclusion that Philippa made.

(1)

In the noisy coffee shop the background noise enters the phonological loop and competes for its limited capacity with the words being rehearsed, so the loop is overloaded and fewer words are recalled than in the quiet classroom.

(Total for Question 7 = 11 marks)

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8 Femi and Asha were sent by their newspaper editor to report on an international sporting event. They spent the day taking pictures of the athletes and recording who won medals in each event.

When they returned to their office they wrote their articles about the sporting event and submitted these to the editor. She was surprised that there were differences in Femi and Asha's accounts of the sporting event.

Discuss how the multi-store model of memory could explain the differences in Femi and Asha's articles.

You must refer to the context in your answer.

(8)

The multi-store model (Atkinson and Shiffrin, 1968) says information passes through three stores. The sensory register holds sense-specific information very briefly, about a quarter to half a second for visual (iconic) information, and only information that is attended to passes to short-term memory (STM). STM has a capacity of about 7 ± 2 items, lasts up to about 18 to 30 seconds and encodes mainly acoustically. Information that is rehearsed is transferred to long-term memory (LTM), which has an unlimited capacity and duration and encodes mainly semantically.

This can explain the differences in the articles. At an international sporting event there would be many competitions happening at once. Femi may have been concentrating on taking pictures of the athletes, so he paid attention to their appearance, while Asha attended to who won the medals. Information that one of them did not attend to would have decayed from the sensory register within a second, so it never reached STM and could not be included in their article.

STM could also explain differences. As they recorded medal winners for every event all day, Asha's STM may have been overloaded, because it only holds about seven items, so earlier winners were displaced by new ones before she wrote them down. If Femi repeated the winners' names to himself or discussed an event with other reporters, this rehearsal would transfer the information to his LTM, whereas Asha, who did not rehearse it, may have forgotten it, so their

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recall back at the office was different. Femi may also have more knowledge of and interest in sport, so the information was encoded semantically into his LTM more easily and he could recall more details.

However, the model may be too simple to fully explain the differences. It sees STM as a single store, but the working memory model (Baddeley and Hitch, 1974) suggests that Femi's visual memory of the photographs and Asha's verbal notes would be processed by separate components. The model also ignores the fact that memory is reconstructive; Bartlett (1932) showed recall is changed by schemas, so Femi and Asha may have filled gaps with what they expected to happen at a sporting event. Case studies such as HM (Milner, 1966) support separate STM and LTM stores, but rehearsal is not the only route to LTM, as dramatic moments such as a surprise winner may be remembered without rehearsal. Overall, the multi-store model explains some of the differences through attention, capacity and rehearsal, but differences in schemas and how they encoded the event also need to be considered.

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

9 Evaluate psychological research into obedience.

(12)

Milgram (1963) carried out a laboratory experiment at Yale University with 40 male volunteers aged 20 to 50 from New Haven. Through a rigged draw each participant became the teacher and gave supposed electric shocks from 15 to 450 volts to a learner (a confederate) for every wrong answer. The experimenter used four scripted verbal prods, such as "Please continue". 65% of participants went to 450 volts. At the end, Milgram debriefed participants on the true aim and let them meet the unharmed learner.

A strength is the standardised procedure. Every participant had the same rigged draw, shock generator and prods, so the study is replicable and reliable. Burger (2009) replicated it with 70 participants using the same procedure (but stopping at 150 volts) and found similar levels of obedience, which supports Milgram's findings. However, Gina Perry's analysis of the recordings suggested the experimenter sometimes went off script and added extra prods, so the conditions were not completely comparable.

A weakness is low ecological validity. Giving electric shocks to a stranger is not a task people would do in everyday life, and Orne and Holland (1968) argued that participants may not have believed the shocks were real. On the other hand, in Experiment 10 Milgram moved the study to a rundown office block in Bridgeport, away from the prestigious university, and obedience only fell to 47.5%. This more natural setting suggests his findings were not just due to the status of Yale.

Ethics are another issue. Participants were deceived about the aim and many showed extreme stress, such as sweating and nervous laughter, and Baumrind (1964) argued they were not

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properly protected. However, Milgram's debrief meant there were no lasting effects; a follow-up found 84% were glad to have taken part, and a psychiatrist found no harm a year later. Burger (2009) improved the ethics by screening out vulnerable people and stopping at 150 volts, and even though he used deception by telling participants the study was on learning, it was approved by an ethics committee.

Research has also used other methods. Hofling et al. (1966) carried out a field experiment where 21 of 22 nurses obeyed a telephone order from an unknown doctor to give an overdose of a drug, which has higher ecological validity than Milgram's laboratory task, although Rank and Jacobson (1977) found that only 2 of 18 nurses obeyed when they knew the drug and could consult colleagues.

In conclusion, obedience research is highly controlled and replicable, and Burger's replication shows the findings are still valid today, but it has been criticised for low ecological validity and for deception and distress. Overall, the evidence is strong that situational factors such as a legitimate authority figure greatly increase obedience, but it must be applied to real life with caution.

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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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