

Write your name here

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Candidate Number

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Psychology

Advanced

Paper 1: Foundations in Psychology

Monday 4 June 2018 – Afternoon

Time: 2 hours

Paper Reference

9PS0/01

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 90.
- 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.



Chi-squared distribution formula

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

$$df = (r - 1)(c - 1)$$

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.



Mann-Whitney U test formulae

$$U_a = n_a n_b + \frac{n_a(n_a+1)}{2} - \sum R_a$$

$$U_b = n_a n_b + \frac{n_b(n_b+1)}{2} - \sum R_b$$

(U is the smaller of U_a and U_b)

Critical values for the Mann-Whitney U test

N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.05$ (one-tailed), $p \leq 0.10$ (two-tailed)																
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138



N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.01$ (one-tailed), $p \leq 0.02$ (two-tailed)																
5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
6	2	3	4	6	7	8	9	11	12	13	15	16	18	19	20	22
7	3	4	6	7	9	11	12	14	16	17	19	21	23	24	26	28
8	4	6	7	9	11	13	15	17	20	22	24	26	28	30	32	34
9	5	7	9	11	14	16	18	21	23	26	28	31	33	36	38	40
10	6	8	11	13	16	19	22	24	27	30	33	36	38	41	44	47
11	7	9	12	15	18	22	25	28	31	34	37	41	44	47	50	53
12	8	11	14	17	21	24	28	31	35	38	42	46	49	53	56	60
13	9	12	16	20	23	27	31	35	39	43	47	51	55	59	63	67
14	10	13	17	22	26	30	34	38	43	47	51	56	60	65	69	73
15	11	15	19	24	28	33	37	42	47	51	56	61	66	70	75	80
16	12	16	21	26	31	36	41	46	51	56	61	66	71	76	82	87
17	13	18	23	28	33	38	44	49	55	60	66	71	77	82	88	93
18	14	19	24	30	36	41	47	53	59	65	70	76	82	88	94	100
19	15	20	26	32	38	44	50	56	63	69	75	82	88	94	101	107
20	16	22	28	34	40	47	53	60	67	73	80	87	93	100	107	114

N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.025$ (one-tailed), $p \leq 0.05$ (two-tailed)																
5	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6	3	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
8	6	8	10	13	15	17	19	22	24	26	29	31	34	36	38	41
9	7	10	12	15	17	20	23	26	28	31	34	37	39	42	45	48
10	8	11	14	17	20	23	26	29	33	36	39	42	45	48	52	55
11	9	13	16	19	23	26	30	33	37	40	44	47	51	55	58	62
12	11	14	18	22	26	29	33	37	41	45	49	53	57	61	65	69
13	12	16	20	24	28	33	37	41	45	50	54	59	63	67	72	76
14	13	17	22	26	31	36	40	45	50	55	59	64	67	74	78	83
15	14	19	24	29	34	39	44	49	54	59	64	70	75	80	85	90
16	15	21	26	31	37	42	47	53	59	64	70	75	81	86	92	98
17	17	22	28	34	39	45	51	57	63	67	75	81	87	93	99	105
18	18	24	30	36	42	48	55	61	67	74	80	86	93	99	106	112
19	19	25	32	38	45	52	58	65	72	78	85	92	99	106	113	119
20	20	27	34	41	48	55	62	69	76	83	90	98	105	112	119	127



N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$p \leq 0.005$ (one-tailed), $p \leq 0.01$ (two-tailed)																
5	0	1	1	2	3	4	5	6	7	7	8	9	10	11	12	13
6	1	2	3	4	5	6	7	9	10	11	12	13	15	16	17	18
7	1	3	4	6	7	9	10	12	13	15	16	18	19	21	22	24
8	2	4	6	7	9	11	13	15	17	18	20	22	24	26	28	30
9	3	5	7	9	11	13	16	18	20	22	24	27	29	31	33	36
10	4	6	9	11	13	16	18	21	24	26	29	31	34	37	39	42
11	5	7	10	13	16	18	21	24	27	30	33	36	39	42	45	48
12	6	9	12	15	18	21	24	27	31	34	37	41	44	47	51	54
13	7	10	13	17	20	24	27	31	34	38	42	45	49	53	56	60
14	7	11	15	18	22	26	30	34	38	42	46	50	54	58	63	67
15	8	12	16	20	24	29	33	37	42	46	51	55	60	64	69	73
16	9	13	18	22	27	31	36	41	45	50	55	60	65	70	74	79
17	10	15	19	24	29	34	39	44	49	54	60	65	70	75	81	86
18	11	16	21	26	31	37	42	47	53	58	64	70	75	81	87	92
19	12	17	22	28	33	39	45	51	56	63	69	74	81	87	93	99
20	13	18	24	30	36	42	48	54	60	67	73	79	86	92	99	105

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



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

<i>n</i>	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
	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.



Answer ALL questions.

SECTION A: SOCIAL PSYCHOLOGY

- 1 Milgram carried out some valuable research into obedience, including a number of variation studies.

Describe the procedure of the Rundown Office Block (Experiment 10) variation study.

In Experiment 10, Milgram relocated the study from the prestigious Yale University to a small commercial office in Bridgeport, Connecticut, so that the link with Yale was removed. Participants were told that the research was being carried out by a private company, Research Associates of Bridgeport, conducting research for industry.

The experiment took place in a three-room office suite in a run-down commercial building, which was sparsely furnished. Otherwise the procedure was the same as the baseline: participants, as teachers, were ordered by the experimenter to give increasing shocks up to 450 volts to the learner (a confederate) for wrong answers.

(Total for Question 1 = 3 marks)



2 Tim and Laura are undertaking a practical investigation using a questionnaire into in-group favouritism at their college.

- (a) Suggest **one** open question and **one** closed question Tim and Laura could use in their questionnaire.

(2)

Open question

What do you think about students who go to other colleges compared with students at our college?

Closed question

Students at my college are friendlier than students at other colleges. SA / A / DK / D / SD

- (b) When conducting an investigation using a questionnaire a pilot study can be carried out. A pilot study is a small-scale preliminary version of a study which is carried out before the full-scale version of a study.

Suggest **two** reasons why Tim and Laura should carry out a pilot study before conducting their questionnaire.

(2)

Reason 1

To test whether the college students understand the questions clearly, so that any confusing or ambiguous questions about in-group favouritism can be reworded.

Reason 2

To check whether the sampling technique gathers a representative sample of the college students and how long the questionnaire takes to complete.

(Total for Question 2 = 4 marks)



3 Sherif et al. (1954/1961) conducted The Robbers Cave Experiment.

Explain **one** strength of Sherif et al. (1954/1961).

Several data collection methods were used, such as participant observation by the researchers acting as camp staff, tape recordings and the bean-collecting experiment.

The findings from each method could be compared, which increases the internal validity of the conclusions about the hostility between the Eagles and the Rattlers.

(Total for Question 3 = 2 marks)



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QUESTION 4 BEGINS ON THE NEXT PAGE.



P 5 2 2 0 4 A 0 1 1 3 6

4 Assess how individual differences (personality and gender) affect obedience.

(8)

Personality refers to a set of traits that remain relatively stable over time and across situations. Adorno et al. (1950) proposed the authoritarian personality, characterised by rigid thinking, obedience to legitimate authority figures and hostility towards those considered inferior, which develops from a strict upbringing. People with this personality should therefore be more likely to obey.

This is supported by Elms and Milgram (1966), who found that fully obedient participants from Milgram's studies scored higher on the F-scale, which measures authoritarianism, than defiant participants, and were less close to their fathers. However, personality was measured using self-report questionnaires, which could be invalid measures of personality because of social desirability bias, and the study is correlational, so it cannot show that personality causes obedience. Also, the F-scale only explains some of the difference, as situational factors such as proximity and location still had a large effect on obedience levels.

Gender identity (masculinity and femininity) develops through socialisation, and gender stereotypes affect how we perceive ourselves and others, for example women are often perceived to be more compliant and obedient, as they are socialised to be cooperative, while men are encouraged to be assertive.

Evidence for gender differences is mixed. Milgram (1963/1974) found that women were equally obedient (65%) to men, although they reported more stress. Kilham and Mann (1974) replicated Milgram's procedure in Australia and found that females were less obedient than males (16% compared with 40%), contradicting the stereotype. Burger (2009) also found minimal gender differences, supporting Milgram's conclusion that gender is less of a factor in obedience than others such as culture and the situation. Overall, individual differences have some effect, with authoritarian personality showing a



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link to obedience, but gender appears to have little consistent effect, so situational factors seem to be more important than individual differences in explaining obedience.

(Total for Question 4 = 8 marks)

TOTAL FOR SECTION A = 17 MARKS



P 5 2 2 0 4 A 0 1 3 3 6

SECTION B: COGNITIVE PSYCHOLOGY

- 5 Mr Robinson has asked geography students and mathematics students to take part in an experiment. He asked both sets of students to learn a list of 20 words. The mathematics students were given an interference task before retrieval of the word list. The geography students did not have an interference task.

Table 1 shows the results of Mr Robinson's experiment.

Participant	Number of words correctly retrieved (out of 20) by mathematics students	Number of words correctly retrieved (out of 20) by geography students
A	15	9
B	7	10
C	9	5
D	14	8
E	12	8
F	16	5
G	10	8
H	9	11
I	9	13
J	15	8
Mean	11.6	8.5

Table 1

- (a) Calculate the mean number of words retrieved by the mathematics and geography students and complete **Table 1** with your answers.

You **must** give your answers to one decimal place.

(1)

SPACE FOR CALCULATIONS

Maths: $116 \div 10 = 11.6$

Geography: $85 \div 10 = 8.5$



(b) Explain which statistical (inferential) test Mr Robinson would have used to analyse the data.

(2)

Mr Robinson would have used a Mann-Whitney U test, as he was looking for a difference in the number of words retrieved and used an independent groups design, with different participants (mathematics students with an interference task and geography students without one) in each condition. The data are at least ordinal.

(c) Explain **one** strength of Mr Robinson using quantitative data in his experiment.

(2)

Mr Robinson does not need to personally interpret the numerical data on the number of words recalled, which means his analysis is more objective, as he cannot interpret the mean number of words differently to other researchers. This also makes it easy to compare the two groups of students.

(Total for Question 5 = 5 marks)



6 Mo and Akeem witness a man steal a bag in a restaurant.

Using schema theory, suggest why Mo and Akeem may recall the scene in the restaurant differently.

Schema theory states that recall is reconstructive and influenced by previous knowledge, experiences, expectations and stereotypes stored in schemas, so Mo and Akeem will each recall the theft in the restaurant according to their own schemas.

Mo's schema for a robbery could include information he has seen in films or on the news, such as the thief wearing dark clothing and running out, which he may incorporate into his memory of the event even if it did not happen.

Akeem may fill in gaps with information that makes sense to him from his own prior experience, for example if he once had his own bag stolen, so he may focus on the victim and recall the scene differently to Mo.

(Total for Question 6 = 4 marks)



7 Evaluate the working memory model (Baddeley and Hitch, 1974).

(8)

The working memory model (Baddeley and Hitch, 1974) replaced the unitary short-term memory store of the multi-store model with an active system made of several components. The central executive is the control system, which directs attention and allocates information to the slave systems. The phonological loop holds sound information and consists of the phonological store (the inner ear) and the articulatory control process (the inner voice), which rehearses verbal information. The visuo-spatial sketchpad deals with visual and spatial information. Baddeley later added the episodic buffer, which integrates information from the other components and links working memory to long-term memory.

A strength is that the model is supported by the case study of KF (Shallice and Warrington, 1970). After brain damage KF's short-term memory for verbal information was impaired, while his memory for visual information was largely unaffected. This suggests that there are separate stores for verbal and visual information, supporting the phonological loop and visuo-spatial sketchpad as separate systems rather than one unitary store.

Further support comes from Smith and Jonides (1997), whose PET scans showed different areas of the brain were activated during visual and spatial tasks, which supports the idea that the visuo-spatial sketchpad is not one store. Dual-task studies also show that people can do a verbal and a visual task at the same time without loss of performance, but not two tasks that use the same component.

However, the central executive is vague and poorly explained, as it is unclear how it allocates attention or what its capacity is. Robbins et al. (1996) found that with chess players it was the central executive, not the phonological loop, that played a role in remembering chess positions, which suggests it is important but still poorly understood.



In addition, by adding the episodic buffer later, it could be argued that the original 1974 model was incomplete and so it may still lack accuracy.

Overall, the working memory model is well supported by case study, neuroimaging and experimental evidence and is more detailed than the multi-store model, but its central executive needs further explanation, so it is a useful but incomplete account of short-term memory.

(Total for Question 7 = 8 marks)

TOTAL FOR SECTION B = 17 MARKS



SECTION C: BIOLOGICAL PSYCHOLOGY

8 Describe the process of synaptic transmission.

An electrical impulse (action potential) travels along the axon of the pre-synaptic neuron to the axon terminal. When the impulse arrives, it causes synaptic vesicles to move to the membrane and release a neurotransmitter, such as dopamine, into the synaptic gap.

The neurotransmitter diffuses across the synaptic gap and binds to specific receptors on the post-synaptic neuron, which can make it more likely (excitatory) or less likely (inhibitory) to fire. Leftover neurotransmitter is then broken down by enzymes or taken back into the pre-synaptic neuron by reuptake.

(Total for Question 8 = 3 marks)



- 9 Rafiq carried out a correlational study to investigate whether there was a relationship between age and number of hours of sleep per night.

- (a) Complete **Table 2** and calculate the Spearman's rank correlation coefficient for Rafiq's study.

(4)

Age	Rank 1	Number of hours sleep	Rank 2	d	d ²
17	2.5	10	6	-3.5	12.25
17	2.5	11	7	-4.5	20.25
20	4	6	2.5	1.5	2.25
24	6	7	4	2	4
21	5	4	1	4	16
16	1	9	5	-4	16
40	7	6	2.5	4.5	20.25
Total:					91

Table 2

SPACE FOR CALCULATIONS

$$d = \text{Rank 1} - \text{Rank 2}$$

$$\Sigma d^2 = 12.25 + 20.25 + 2.25 + 4 + 16 + 16 + 20.25 = 91$$

$$r_s = 1 - (6\Sigma d^2) \div (n(n^2 - 1))$$

$$= 1 - (6 \times 91) \div (7 \times (49 - 1))$$

$$= 1 - 546 \div 336$$

$$= 1 - 1.625 = -0.625$$

Spearman's rank correlation coefficient -0.625



(b) Rafiq used a non-directional (two-tailed) hypothesis.

Explain whether Rafiq's data were significant at $p < 0.05$ and if the research hypothesis should be accepted.

(2)

The critical value at $p < 0.05$ for a two-tailed test when $N = 7$ is 0.786. The calculated value (0.625, ignoring the sign) is less than the critical value, so there is no significant relationship between age and number of hours of sleep. The null hypothesis should be accepted and the research hypothesis rejected.

(Total for Question 9 = 6 marks)



10 Discuss the key question you have studied from biological psychology.

(8)

Key question: How effective is drug therapy for treating heroin addiction?

This is a key question for society because addiction to drugs such as heroin costs society a great deal, in terms of crime committed by addicts to fund their habit, NHS costs for treating overdoses and infections, and lost working days. Heroin changes the brain and body, so any treatment needs to also have a biological basis.

Heroin is an agonist that binds to opioid receptors and increases the release of dopamine in the reward pathway, causing euphoria. Repeated exposure leads to tolerance, so more of the drug is needed for the same effect, and to withdrawal symptoms such as cramps, sweating and vomiting when it is stopped. These symptoms maintain drug use, leading to social and economic costs, which is why addiction needs to be treated.

Methadone is a replacement drug used in drug therapy. It mimics the action of heroin at the synaptic level, binding to the same opioid receptors and affecting dopamine and endorphins, but it is taken orally and is longer acting, so it does not produce the same high. It therefore reduces cravings and withdrawal symptoms, so addicts may stop offending to get access to heroin and are less at risk from sharing needles, which benefits society.

However, methadone is itself addictive, and methadone maintenance programmes may discourage complete abstinence, as users may stay on methadone for years, which costs society more in economic and social costs. When the methadone doses are reduced, the user will experience withdrawal symptoms such as cramps and vomiting, which can lead to relapse back to heroin.

Brain scanning methods such as PET could be used to investigate the activity of methadone treatment on the brain, for example whether dopamine activity returns to normal, to show objectively if it is effective. Drug therapy also only treats the biological

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side of addiction, so it is most effective when combined with psychological therapies that address the social and learned reasons for drug taking.

In conclusion, drug therapy such as methadone is effective in reducing cravings, crime and harm, but because of its own addictive nature and relapse rates it is best seen as one part of a wider treatment programme.

(Total for Question 10 = 8 marks)

TOTAL FOR SECTION C = 17 MARKS



SECTION D: LEARNING THEORIES

- 11 Mandeep and Priya used a content analysis to investigate how gender is presented in two children's television programmes. To record the data a tally chart was used.

Table 3 shows the data they gathered.

	Programme 1	Programme 2	Total
Emotional female	### //	### ////	16
Emotional male	//	/	3
Strong female	###	///	8
Strong male	### ###	### /	16
Sporty female	///	////	7
Sporty male	///	### ###	13

Table 3

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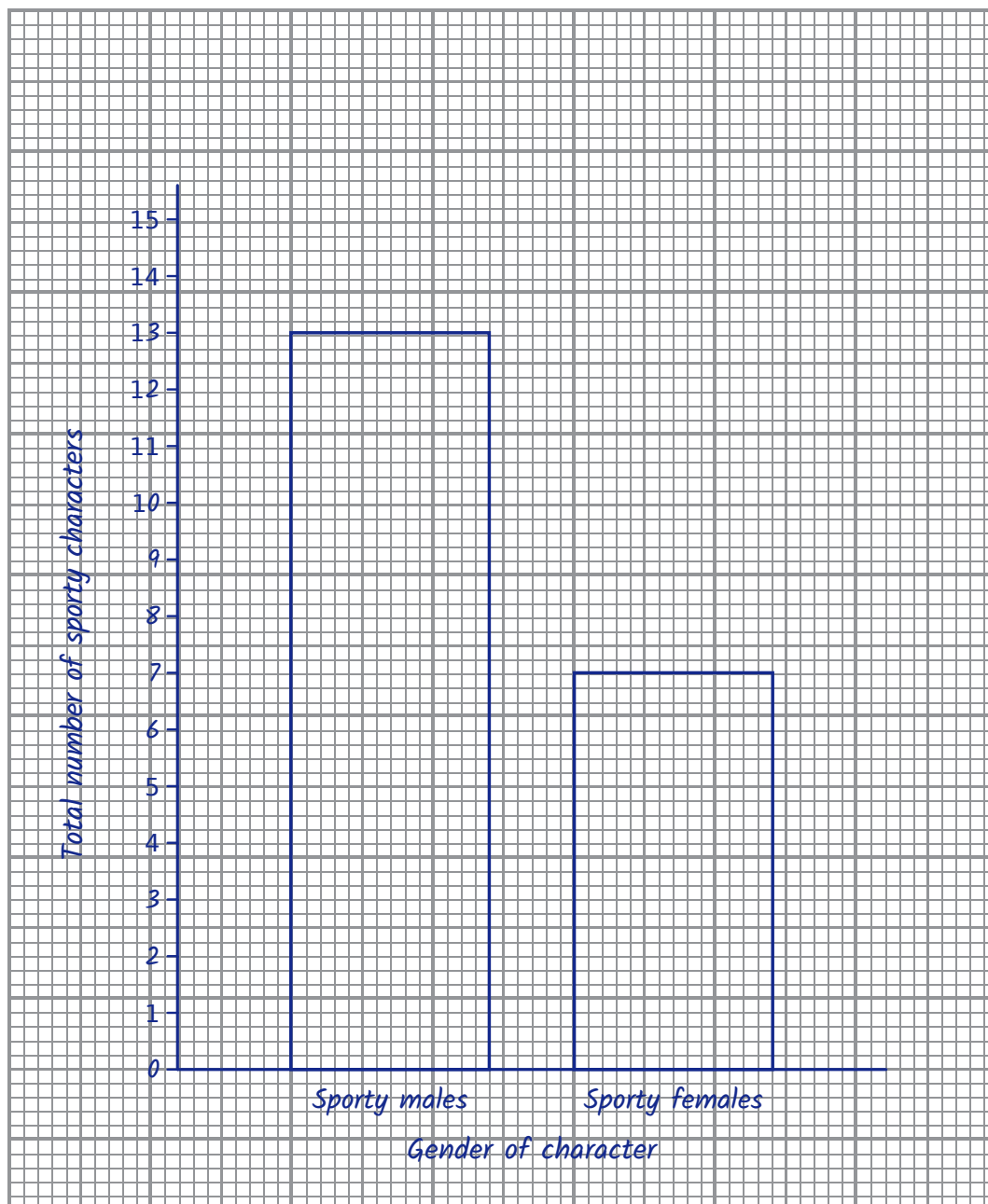


- (a) Draw a bar chart to show the total number of sporty males and sporty females shown in **Table 3**.

(3)

Title

A bar chart to show the total number of sporty males and sporty females in two children's television programmes



- (b) Explain **one** conclusion that could be drawn from Mandeep and Priya's investigation.

(2)

Mandeep and Priya could conclude that gender stereotypes were reinforced in both children's television programmes, as males were presented as more sporty (13 compared with 7 females), stronger (16 compared with 8) and less emotional (3 compared with 16) than females.

- (c) Explain **one** methodological issue there may have been with Mandeep and Priya's content analysis.

(2)

Mandeep and Priya only investigated two children's programmes, which may be of the same genre, so the findings can only be generalised to the two programmes chosen and not to all children's television programmes. Also, the categories such as 'emotional' are subjective, so they may have coded the characters differently, lowering inter-rater reliability.

(Total for Question 11 = 7 marks)



12 Jodi attended a number of birthday parties when she was younger. At all of the parties there was a clown who burst a balloon which scared Jodi. Jodi is now fearful of clowns.

Using your knowledge of classical conditioning, explain how Jodi developed a fear of clowns.

Before the parties, the bursting balloon was an unconditioned stimulus (UCS) which naturally caused fear in Jodi, the unconditioned response (UCR). The clown was a neutral stimulus (NS), which did not cause a fearful response before the parties.

At each party the clown (NS) was repeatedly paired with the balloon bursting (UCS), so Jodi learned to associate clowns with the fear caused by the bang.

As a result, the clown became a conditioned stimulus (CS) that produces fear, the conditioned response (CR), on its own, so Jodi is now fearful of clowns even when no balloon bursts. Her fear may also generalise to other people in clown costumes.

(Total for Question 12 = 4 marks)



13 When studying learning theories you will have covered the observational research method for human research.

Evaluate the usefulness of observational methods for studying human behaviour.

(8)

Observations involve watching and recording behaviour, often using a tally chart of operationalised behavioural categories, as in Bandura et al. (1961). In a non-participant observation the researcher is not involved in the group being observed, whereas in a participant observation the researcher infiltrates the group to observe their behaviour.

Observations can be overt, where participants know they are being watched, or covert, where behaviour is investigated without participants knowing. Structured observations take place in an environment that has been manipulated or set up by the researcher, while naturalistic observations take place in the participants' normal setting.

Non-participant observations are useful because the observer can concentrate fully on recording the behaviour being displayed, and using two observers allows inter-observer reliability to be checked, so the data are more reliable. Structured observations such as Bandura's Bobo doll studies are useful because variables are controlled and the procedure is standardised, so the study can be replicated and cause and effect can be inferred.

However, structured observations are less useful for studying real behaviour, as there is low validity in the human behaviour seen due to the artificially constructed setting, so findings may not generalise to everyday life. Participant observations allow the researcher to gain a more valid, in-depth insight into the reasons behind the behaviour being observed, which is useful for practical applications, but the researcher may lose objectivity by becoming too involved with the group.

Covert observations are useful for observing natural behaviour, because participants do not know they are being watched, so there are no demand characteristics and validity is high. However, they could be seen as unethical under the BPS Code of Ethics and Conduct (2009), as participants cannot give prior informed consent and their privacy



may be invaded. Overt observations are more ethical but may cause participants to change their behaviour.

Observations also only record what people do and not why, unless they are combined with interviews, and observer bias may affect the categories recorded.

Overall, observational methods are very useful for studying human behaviour as it actually occurs, especially for children who cannot complete questionnaires, but their usefulness depends on the type used, as there is a trade-off between control and reliability in structured observations and validity in naturalistic and covert observations.

(Total for Question 13 = 8 marks)

TOTAL FOR SECTION D = 19 MARKS



SECTION E: ISSUES AND DEBATES

- 14 Discuss the practical issues faced by psychologists when designing and implementing research in learning theories and biological psychology.

(8)

One practical issue when designing research is controlling variables so that the research can be replicated to increase reliability. Within learning theories, Pavlov (1927) undertook a similar experiment numerous times with multiple dogs using controlled conditions, measuring salivation precisely, so his findings about classical conditioning were reliable. In biological psychology, brain scanning procedures are standardised, so they can be repeated.

A second issue is generalisability. The use of animals or rare and limited populations to represent general theories of human behaviour can lead to generalisation issues. Skinner's rats and pigeons and Pavlov's dogs are used because they are practical to house and control, but their learning may not apply to humans, who have more complex cognition. In biological psychology, Raine et al. (1997) used murderers pleading not guilty by reason of insanity (NGRI), a population that may not be representative of other violent people, while twin studies are limited because twins are rare.

A third practical issue is achieving findings that represent real life, which requires researchers to limit the artificiality of tasks and environments. Bandura's studies of modelling took place in an artificial setting where children played individually with a Bobo doll after watching a model through a screen or in a separate room, so they have limited ecological validity, as a doll is designed to be hit. Similarly, participants in brain scans must lie still in a scanner, which is unlike everyday life.

Finally, some methods are expensive to undertake, leading to the practical issue of cost for researchers. CT scans are cheaper than PET scans, but they do not show brain activity, only brain anatomy, so the cost benefit of a cheaper scan may be outweighed by its reduced usefulness. PET scans also involve a radioactive tracer, so they cannot be

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used repeatedly, limiting sample sizes. Animal research in learning theories is cheaper and quicker as animals breed quickly, but this trades off against the problem of generalising to humans.

In conclusion, psychologists in both areas must balance control and replicability against realism and generalisability, and the cost of methods, so no study can overcome every practical issue.

(Total for Question 14 = 8 marks)



15 To what extent do social psychology and cognitive psychology consider human behaviour to be determined by nurture?

(12)

The nature-nurture debate concerns whether behaviour is caused by innate characteristics such as genes, hormones and brain structure (nature) or by environmental factors such as upbringing, culture, experience and learning, as well as physical factors like drugs, disease and diet (nurture). Psychologists are interested in the debate to find the source of behavioural traits, because if we know whether behaviour is caused by nature or nurture we can establish suitable strategies for modifying behaviour. Social psychology explains human behaviour mainly through the influence of the situation and groups, so it largely emphasises nurture. Milgram's variation studies show that obedience changed as a result of situational factors such as proximity and status: obedience fell from 65% to 47.5% when the study moved to a run-down office block, and fell further when the teacher had to touch the learner. This suggests the environment plays a significant role, and these findings can, to an extent, be used to reduce situations that result in blind obedience. Social impact theory (Latané, 1981) also suggests that the strength, immediacy and number of sources and targets influence obedience in group situations, and social identity theory explains prejudice through learned group memberships and social categorisation. However, social psychology does not consider behaviour to be determined only by nurture. Blass (2012) found little difference in obedience levels cross-culturally, which suggests that a nature explanation underpins obedience to a certain extent, as obedience may be a universal, evolved tendency. Social psychology also explains behaviour through personality, such as the authoritarian personality, which may partly be innate, although Adorno et al. argued it develops from a strict upbringing, which is nurture. Cognitive psychology attempts to explain how memory works, using models such as the multi-store model, which emphasises nurture through the need for attention and

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rehearsal for information to transfer to long-term memory. Peterson and Peterson (1959) showed the influence of rehearsal on short-term memory, as recall of trigrams fell rapidly when rehearsal was prevented, which is a nurture factor that can be applied to improving student learning. Bartlett's (1932) reconstructive memory also emphasises nurture, as schemas develop from our culture and experiences, shown when English participants changed the Native American story 'War of the Ghosts' to fit their own culture.

However, cognitive psychology also recognises nature. The case of HM supports the role of nature in memory, as he was unable to remember new factual information after surgery removed parts of his hippocampus, showing memory depends on biological brain structures. Clive Wearing (Blakemore, 1988) supports nurture to a certain extent, because an environmental factor, the herpes virus, damaged his brain and prevented new memories being stored, yet the effect works through the brain, which is nature. The working memory model also assumes that all people have the same innate structure of memory components.

In conclusion, both approaches consider human behaviour to be determined by nurture to a large extent: social psychology focuses on situational and group influences and cognitive psychology on rehearsal, attention and schemas. However, neither is fully nurture-based, as cross-cultural obedience and case studies of brain damage show the role of nature. Therefore an interactionist view, where innate capacities are shaped by the environment, is the most balanced position.



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(Total for Question 15 = 12 marks)

TOTAL FOR SECTION E = 20 MARKS

TOTAL FOR PAPER = 90 MARKS



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