Please check the examination details below before entering your candidate information

Candidate surname: StemUp Model Solution

Other names:

Centre Number

Candidate Number

Pearson Edexcel International Advanced Level

Friday 2 June 2023

Afternoon (Time: 1 hour 30 minutes)

Paper reference **WPS03/01**

Psychology

International Advanced Level

UNIT 3: Applications of 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 in Section A, and **ALL** questions from **EITHER** Option 1 criminological psychology **OR** Option 2 health psychology.
- 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.
- Try to answer every question.
- 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

DEVELOPMENTAL PSYCHOLOGY

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

1 Bowlby proposed the maternal deprivation hypothesis when developing his theory of attachment.

(a) Describe what is meant by the term maternal deprivation hypothesis as proposed by Bowlby.

(2)

Bowlby claimed that if a child is deprived of their mother figure, so the attachment bond is broken, during the critical period (the first two and a half years), there will be serious long-term consequences. The child could suffer irreversible damage to their intellectual, emotional and social development, eg affectionless psychopathy.

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(b) Explain **one** strength and **one** weakness of Bowlby's theory of attachment.

(4)

Strength

Bowlby (1944) supports the theory: of 44 juvenile thieves, 14 were affectionless and 12 of these had experienced maternal deprivation in early childhood, whereas the control group of non-thieves had not been deprived and were not affectionless, suggesting early deprivation does lead to later emotional problems.

Weakness

Schaffer and Emerson (1964) found that by 18 months most infants had multiple attachments and the first attachment was not always with the mother. This disputes Bowlby's claim of monotropy, as it was the adult who responded most sensitively to the infant, not necessarily the mother, who mattered most.

(Total for Question 1 = 6 marks)

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2 Natasha is a child psychologist. She was asked to investigate the effectiveness of a new scheme to help parents who found it hard to securely attach to their babies. Natasha counted the number of interactions parents had with their babies before and after taking part in the new scheme.

- Condition A: The parents' interactions with their babies before they took part in the new scheme.
- Condition B: The same parents' interactions with their babies after they took part in the new scheme.

The mean number of interactions for each condition was calculated by Natasha.

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

Condition A	Condition B
9	14

Table 1

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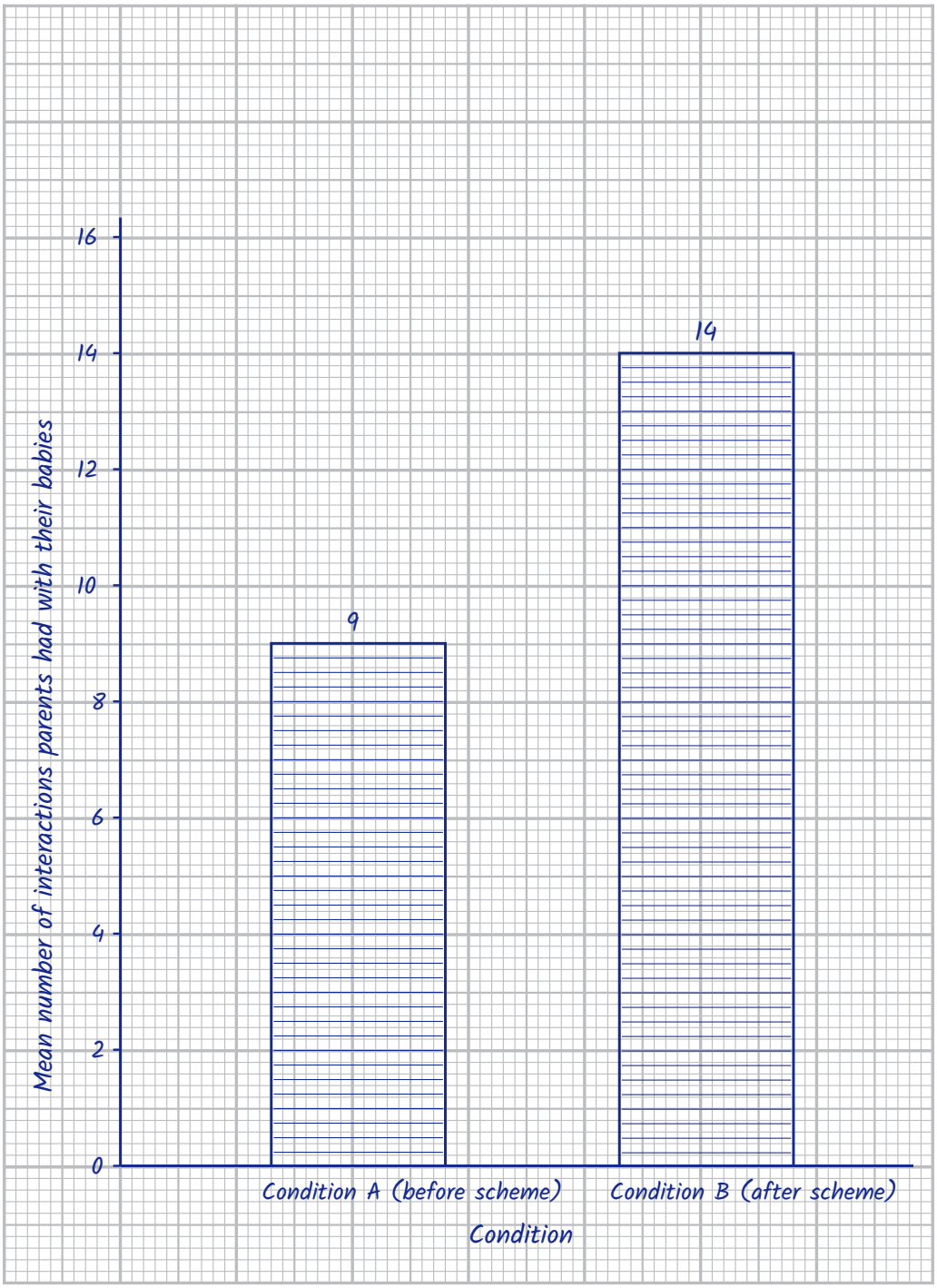
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(a) Draw a suitable graph to show the data from **Table 1**.

(3)

Title

A bar chart to show the mean number of interactions parents had with their babies before (Condition A) and after (Condition B) taking part in the new scheme



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(b) Natasha conducted a statistical test on her data to determine if the results were significant.

State which statistical test Natasha would have used on her data.

(1)

Wilcoxon signed ranks test, as it is a test of difference with a repeated measures design (same parents).

(c) Explain **one** improvement Natasha could make to her investigation in terms of reliability.

(2)

Natasha could have a second observer count the number of interactions each parent has with their baby at the same time as her, using the same behavioural categories. They could then correlate their tallies, and if they counted similar numbers of interactions there would be high inter-rater reliability, so her results are reliable.

(Total for Question 2 = 6 marks)

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3 Pierre is conducting a meta-analysis to see if storytelling helps the language development of children. He collected data from 16 studies that had been published within the past 20 years. The studies had all been in journals that were published in the United States of America.

Explain **one** strength and **one** weakness of Pierre conducting a meta-analysis to see if storytelling helps the language development of children.

Strength

As Pierre combines data from 16 published studies, he has far more data on storytelling and children's language than he could collect in one study himself. This larger, more varied sample is more representative, so his conclusion about whether storytelling helps language development is more generalisable.

Weakness

All of Pierre's studies were published in USA journals, so there may be publication bias, as studies showing storytelling helps language are more likely to be published than those finding no effect. Also, results from American children may not generalise to other cultures, so his conclusion may not be valid.

(Total for Question 3 = 4 marks)

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4 Evaluate Chomsky's theory of language development.

(8)

Chomsky argued that language is innate. Children are born with a language acquisition device (LAD) that contains universal grammar, an innate understanding of grammatical categories such as nouns and verbs and how they can be combined to make meaningful sentences. He argued language cannot be learnt from a blank slate, as there are too many rules and combinations for a child to learn by imitation and reinforcement in the short time it takes them, and the speech children hear is often incomplete (poverty of the stimulus). Children apply the rules of universal grammar to the language they hear, which is why they make virtuous errors such as 'sheeps' or 'goed', overgeneralising rules they could not have copied from adults. Chomsky also proposed a critical period for language, after which it cannot be acquired normally.

There is supporting evidence from the case of Genie (Curtiss, 1977), who was isolated and not spoken to until she was found at 13. Despite intensive help she learnt vocabulary but never developed normal grammar, which supports the idea of a critical period. However, as a case study of one severely deprived and possibly brain-damaged girl, her problems may be due to her abuse and malnutrition rather than missing the critical period, so the findings cannot be generalised. Virtuous errors also support Chomsky, as imitation and reinforcement cannot explain children producing words they have never heard.

However, Chomsky ignores the role of nurture. Vygotsky argued that language develops through social interaction with more knowledgeable others, and children not exposed to interaction do not develop language normally, so the LAD alone is not enough and Chomsky's theory is incomplete. His theory also explains how children produce grammatical speech but not how they learn the meaning of what is said, so it does not explain all of language. The LAD cannot be directly observed or tested, so the theory is hard to falsify. On the other hand, the theory has

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practical application, as the idea of a critical period suggests schools should teach a second language before the age of 11 rather than later.

In conclusion, Chomsky's theory gives a strong explanation of why children acquire grammar so quickly and make virtuous errors, but it is incomplete because it underestimates the role of social interaction and meaning, so language is best explained as an innate ability that needs the right environment to develop.

(Total for Question 4 = 8 marks)

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5 Helene investigated the effectiveness of a new play scheme. The play scheme aims to improve the emotional and cognitive development in children from a deprived area.

Helene measures the development of the children when they start the play scheme, after three months and then after a year. She observes the children and tallies behaviours that indicate emotional and cognitive development.

Helene also uses questionnaires with open and closed questions, which she devised herself. The questionnaires are given to parents of the children and workers at the play scheme.

After analysing her results, Helene found that the play scheme did improve the emotional and cognitive development of most of the children after three months and there was further improvement a year later.

Discuss whether Helene's investigation is scientific.

You must make reference to the context in your answer.

(8)

For research to be scientific it should be empirical, measuring directly observable behaviour rather than making assumptions; objective, so the results are not affected by the researcher's interpretation or bias; replicable, with a standardised procedure so others can repeat it and check the results are consistent; and falsifiable, so it is possible for the hypothesis to be proven wrong. Scientific research should also control variables so that cause and effect can be established.

Helene's investigation is scientific in that it is empirical, as she observes the children's actual behaviour and tallies behaviours that indicate emotional and cognitive development, rather than assuming the play scheme works. Tallying gives quantitative data that can be compared at the start, after three months and after a year. The closed questions in her questionnaires also give quantitative data that can be analysed statistically. Her hypothesis is falsifiable, as the play scheme might not have improved development, and in fact she found it improved development in most, but not all, of the children, so the results could have shown it did not work.

However, the investigation is not fully objective. Helene appears to be the only observer, so she may interpret behaviours in a biased way because she wants to show the play scheme is

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effective, and there is no second observer to check inter-rater reliability. The open questions give qualitative data from parents and play scheme workers that Helene must interpret, and both groups may give socially desirable answers as they want the scheme to succeed. As she devised the questionnaires herself and they have not been tested, other researchers may not have access to them or be able to repeat her procedure exactly, so the study is hard to replicate and check for reliability.

There is also no control group of children from the deprived area who did not attend the play scheme. Over a year children's emotional and cognitive development improves naturally through maturation, and other variables such as school or home life are not controlled, so Helene cannot conclude that the play scheme caused the improvement. This lack of control means cause and effect cannot be established, which is a key feature of science.

Overall, Helene's investigation is partly scientific, as it uses empirical, measurable observations and a falsifiable hypothesis over time, but the lack of objectivity, a single observer, self-devised questionnaires and no control group mean it is not fully scientific. Using a second observer, standardised questionnaires and a control group would make it more scientific.

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(Total for Question 5 = 8 marks)

TOTAL FOR SECTION A = 32 MARKS

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SECTION B

Answer ALL questions from EITHER OPTION 1: CRIMINOLOGICAL PSYCHOLOGY OR OPTION 2: HEALTH PSYCHOLOGY.

Indicate which option you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

If you answer the questions in Option 1, put a cross in the box ☒ .

OPTION 1: CRIMINOLOGICAL PSYCHOLOGY

6 In your studies of criminological psychology, you will have learned about factors influencing jury decision-making.

State how pre-trial publicity may influence jury decision-making.

Pre-trial publicity can create a schema of the defendant as guilty before the trial, so jurors may use these preconceptions rather than the evidence and be more likely to convict.

(Total for Question 6 = 1 mark)

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7 Anatole conducted an experiment to see if self-fulfilling prophecy affected participants' perceptions of how likely someone is to commit theft from a shop.

- Condition A: ten participants were given a scenario about a person who came from a wealthy area.
- Condition B: nine different participants were given the same scenario but the person came from a deprived area.

Anatole then asked his participants to say whether the person in the scenario would commit a theft from a shop or not.

(a) Describe the experimental/research design Anatole used in his experiment.

(2)

Anatole used an independent groups design, as different participants took part in each condition; ten participants read the scenario where the person came from a wealthy area and nine different participants read the same scenario where the person came from a deprived area.

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The results from Anatole's experiment are shown in **Table 2**.

Condition	Number of participants who said the person would commit the theft	Number of participants who said the person would not commit the theft
The scenario said the person came from a wealthy area.	**3**	**7**
The scenario said the person came from a deprived area.	**8**	**1**

Table 2

(b) Calculate the percentage of participants who said the person would commit the theft, out of all participants.

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

(1)

Space for calculations

Total who said yes = 3 + 8 = 11

Total participants = 10 + 9 = 19

11 ÷ 19 × 100 = 57.894... = 57.9%

Percentage ..... 57.9% .....

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(c) Explain what level of measurement Anatole used for the data shown in **Table 2**.

(2)

Anatole used nominal data, as each participant could only be put into one of two categories, saying the person would or would not commit the theft. The data in Table 2 is a frequency count of participants in each category, eg 3 and 7, not scores on a scale.

(d) Explain **one** conclusion Anatole could make from his results in terms of the self-fulfilling prophecy.

(2)

8 out of 9 participants (88.9%) who read the person came from a deprived area said they would commit the theft, compared with only 3 out of 10 (30%) for a wealthy area. So Anatole could conclude that people expect those from deprived areas to commit crime, and these expectations could lead to a self-fulfilling prophecy.

(e) Explain **one** improvement Anatole could make to his experiment.

(2)

Anatole could use more scenarios with a variety of crimes, such as assault or fraud, not just theft from a shop. This would improve validity, as he could conclude whether expectations based on someone's area affect perceptions of all types of crime rather than just shop theft.

(Total for Question 7 = 9 marks)

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8 Sonya works in a prison where she uses cognitive behavioural therapy (CBT) to treat offenders. She is currently treating a prisoner who had taken a car for a drive without the owner's consent. The prisoner showed no remorse for crashing the car as they felt that it did not matter as the insurance company would pay for any damage to the car.

Sonya hopes that by treating the prisoner with cognitive behavioural therapy (CBT) the prisoner will not reoffend once they have been released from prison.

Explain **one** strength of Sonya using cognitive behavioural therapy (CBT) to treat the prisoner.

CBT would challenge the prisoner's cognitive distortion that crashing the car does not matter because insurance pays, helping them see the harm caused. Lipsey et al. (2007) found in a meta-analysis that offenders who had CBT were 1.53 times less likely to reoffend after 12 months, so the prisoner is less likely to take a car again.

(Total for Question 8 = 2 marks)

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9 Greg is a criminological psychologist who was asked to create a psychological (case) formulation on Mary who did not engage with any therapies she was offered whilst in prison. Greg had several sessions with Mary to find out details about her past and present relationships. He also asked her about her current economic and social circumstances. During the psychological (case) formulation Greg also found out how Mary interprets her current and past circumstances.

Based on the psychological (case) formulation Greg was able to recommend further therapies that he thought would be more successful for Mary.

Explain **one** strength and **one** weakness of Greg using a psychological formulation for Mary.

Strength

Greg's formulation takes into account many aspects of Mary's life, such as her past and present relationships, her economic and social circumstances and how she interprets them, so it is holistic. His recommended therapies are therefore based on detailed information about her, so they are more likely to engage her.

Weakness

Greg has to decide which of the detailed information about Mary's relationships and circumstances is most relevant to include, which is subjective. He may leave out something Mary thinks is important or let his own bias affect the formulation, so the therapies he recommends may still not work for her.

(Total for Question 9 = 4 marks)

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10 In your studies of criminological psychology you will have learnt about the classic study by Loftus and Palmer (1974).

Assess Loftus and Palmer (1974) in terms of the British Psychological Society (BPS) Code of Ethics and Conduct (2009).

(8)

In experiment 1, Loftus and Palmer (1974) showed 45 students seven films of traffic accidents, each lasting between 5 and 30 seconds. After each film participants completed a questionnaire with a critical question: 'About how fast were the cars going when they smashed into each other?', with the verb changed to collided, bumped, hit or contacted for different groups. 'Smashed' gave the highest mean speed estimate (40.5 mph) and 'contacted' the lowest (31.8 mph). In experiment 2, 150 students watched a film of a multiple car crash; 50 were asked about speed using 'smashed', 50 using 'hit' and 50 were not asked about speed. A week later they were asked 'Did you see any broken glass?', although there was none. 16 of the 'smashed' group said yes, compared with 7 in the 'hit' group and 6 in the control group.

Under the BPS Code of Ethics and Conduct (2009), the study can be seen as ethical in terms of responsibility, as the risk of harm was low. The films were short and of the kind used in driver safety education, and participants watched filmed accidents rather than a real one, so they would not experience the fear or shock of seeing a real crash. Results were reported as group means, so no individual could be identified, keeping confidentiality, and the deception was minor and necessary, as telling them about the leading question would have made the results invalid. The benefits are also large, as the study showed how leading questions by police can distort testimony.

However, in terms of respect, participants did not give fully informed consent, as they were not told that the real aim was to see if the wording of a question would distort their memory, and in experiment 2 they were misled into thinking the broken glass question was a genuine memory test. In terms of integrity, this deception could make them distrust psychologists. Responsibility

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may also be broken, as some participants may have been in a real car accident, so the films could make them recall it and become distressed, and there is no clear evidence that participants were debriefed or told of their right to withdraw.

Overall, Loftus and Palmer (1974) is largely ethical under the BPS code, as the deception was mild and necessary and the risk of harm small, but the lack of fully informed consent means it would need a full debrief to be acceptable today.

(Total for Question 10 = 8 marks)

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11 Evaluate the influence of the 'other race' effect on the reliability of eye-witness memory.

(8)

The other race effect is when eye-witnesses are more accurate at recognising faces of their own race than faces of a different race, and more likely to make a false identification of someone from another race. One explanation is that people have more experience of own-race faces, so they learn to encode the features that are most useful for telling those faces apart; when encoding another race's face these features may be less helpful, so identification is less reliable. Another explanation is that other-race faces are categorised as an out-group and processed at the level of race rather than as individuals. The effect increases as the time between the crime and the identification increases, and it is weaker in eye-witnesses who have had more equal, positive contact with people of other races.

There is strong evidence that the effect reduces eye-witness reliability. Meissner and Brigham (2001) carried out a meta-analysis and found that own-race faces were 1.4 times more likely to be correctly identified and other-race faces were 1.56 times more likely to be falsely identified. Smith et al. (2004) found that witnesses were more likely to make an error identifying a suspect from another race. As a meta-analysis uses data from many studies, the effect appears reliable and generalisable. This has application, as police can be made aware that cross-race identifications should be treated with caution, and Bornstein et al. (2013) found that warning witnesses about the effect made them more cautious, so they made fewer false identifications.

However, much of this research uses lab studies with photographs of faces, so it lacks ecological validity, as real witnesses are often stressed and have more at stake. Other factors may be more important; Elphick et al. (2021) found the race of the eye-witness did not affect correct identification of a white suspect, but seeing a lookalike on social media did reduce accuracy. Errors may also come from subtle cues from police during line-ups rather than the other race

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effect itself. Contact also matters, as Chiroro and Valentine (1995) found that people with high quality contact with another race showed a smaller effect, so it is not a fixed effect for everyone.

In conclusion, the other race effect does reduce the reliability of eye-witness memory, as shown by meta-analysis, but its influence depends on contact, delay and other factors such as police cues, so it is one of several factors affecting identification accuracy.

(Total for Question 11 = 8 marks)

TOTAL FOR SECTION B OPTION 1 = 32 MARKS

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SECTION B

If you answer the questions in Option 2, put a cross in the box ☒ .

OPTION 2: HEALTH PSYCHOLOGY

12 In your studies of health psychology, you will have learned about Selye's General Adaptation Syndrome (GAS).

State what is meant by the term 'alarm reaction' as a stage in Selye's General Adaptation Syndrome (GAS).

The first stage, when a stressor is perceived and the sympathetic nervous system releases adrenaline, so heart rate and blood pressure increase, preparing the body for fight or flight.

(Total for Question 12 = 1 mark)

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13 Anatole conducted an experiment to see if social support affected his participants' perception of how likely someone was to become stressed.

- Condition A: ten participants were given a scenario where the person in a stressful situation at work had social support from friends and family.
- Condition B: nine different participants were given the same scenario but the person had no social support from friends and family.

Anatole then asked his participants to say whether the person in the scenario would be stressed or not.

(a) Describe the experimental/research design Anatole used in his experiment.

(2)

Anatole used an independent groups design, as different participants took part in each condition; ten participants read the scenario where the person had social support from friends and family and nine different participants read the same scenario where the person had no social support.

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The results from Anatole's experiment are shown in **Table 3**.

Condition	Number of participants who said the person would be stressed	Number of participants who said the person would not be stressed
The scenario said the person had social support from family and friends.	**3**	**7**
The scenario said the person did not have social support from family and friends.	**8**	**1**

Table 3

(b) Calculate the percentage of participants who said the person would be stressed, out of all participants.

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

(1)

Space for calculations

Total who said yes = 3 + 8 = 11

Total participants = 10 + 9 = 19

11 ÷ 19 × 100 = 57.894... = 57.9%

Percentage ..... 57.9% .....

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(c) Explain what level of measurement Anatole used for the data shown in **Table 3**.

(2)

Anatole used nominal data, as each participant could only be put into one of two categories, saying the person would or would not be stressed. The data in Table 3 is a frequency count of participants in each category, eg 3 and 7, not scores on a scale.

(d) Explain **one** conclusion Anatole could make from his results in terms of the effects of social support.

(2)

8 out of 9 participants (88.9%) who read that the person had no social support said they would be stressed, compared with only 3 out of 10 (30%) when the person had support. So Anatole could conclude that social support from family and friends affects perceptions of how likely a person is to become stressed.

(e) Explain **one** improvement Anatole could make to his experiment.

(2)

Anatole could use more scenarios with a variety of stressful situations, such as relationship problems, not just stress at work. This would improve validity, as he could see whether social support affects perceptions of stress even when the stressor may be the social support network itself.

(Total for Question 13 = 9 marks)

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14 Sonya works as a doctor in a local health clinic where she treats patients with anxiety. She is currently treating a patient who is highly anxious, and it is affecting their health. The patient has a job interview in the next few weeks and feels their anxiety will affect their performance at the interview. If they do not get the job, they may not be able to afford to go on holiday.

Sonya hopes that by treating the patient with selective serotonin reuptake inhibitors (SSRIs) the person's anxiety will reduce.

Explain **one** strength of Sonya using selective serotonin reuptake inhibitors (SSRIs) to treat the patient.

SSRIs take less time to reduce anxiety than therapies such as CBT, as they usually work within two to four weeks. As the patient's job interview is in the next few weeks, SSRIs could reduce their anxiety in time, so it is less likely to affect their performance at the interview.

(Total for Question 14 = 2 marks)

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15 Greg is a health psychologist who was asked to treat Mary for her stress. Greg had several sessions with Mary to find out what caused her to be stressed. Mary said that her boss at work is constantly asking her to complete work to unrealistic deadlines. Mary was also stressed because she did not have much money left at the end of the month because she likes to go out at least three times a week with her family and friends.

Based on the sessions Greg had with Mary he recommended emotion-focusing strategies that he thinks will help Mary cope with her stress.

Explain **one** strength and **one** weakness of Mary using emotion-focusing strategies to cope with her stress.

Strength

Mary cannot change the stressor of her boss constantly setting unrealistic deadlines, so emotion-focusing strategies are suitable. Changing how she emotionally deals with the pressure at work, eg relaxation, will reduce her stress and give her time to recover.

Weakness

Emotion-focusing strategies do not deal with the cause of Mary's stress, such as having no money at the end of the month because she goes out at least three times a week. The problem remains, so the strategies will not work in the long term and her stress may increase.

(Total for Question 15 = 4 marks)

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16 In your studies of health psychology you will have learnt about the classic study by Brady (1958).

Assess Brady (1958) in terms of the Animals (Scientific Procedures) Act 1986.

(8)

Brady (1958) placed four pairs of rhesus monkeys in restraining chairs. They received an electric shock every 20 seconds unless a lever was pressed. In each pair, the 'executive' monkey could press the lever to avoid the shock for both of them, while the yoked control monkey had a lever that did nothing, so it received a shock whenever the executive monkey failed to press. The monkeys were on a schedule of six hours when they could be shocked followed by six hours without shocks. All the executive monkeys died of gastric ulcers, while none of the control monkeys did, so Brady concluded that the stress of having control caused the ulcers.

The Animals (Scientific Procedures) Act 1986 requires research on animals to be licensed by the Home Office, with a cost-benefit analysis showing the benefits outweigh the suffering, and the 3Rs applied: replacement, reduction and refinement. Primates are given special protection and may only be used when no other species is suitable. Brady's study could be seen as meeting reduction, as only eight monkeys were used, which is not an excessive number. Monkeys are biologically similar to humans, so the study could be justified as giving information about how stress causes ulcers that could not be gained ethically from humans.

However, the study would not be granted a licence today. Brady deliberately caused the monkeys pain with repeated electric shocks, and the severe suffering led to the death of all the executive monkeys, which would not pass a cost-benefit analysis. Refinement was not applied, as restraining social animals such as monkeys in chairs for long periods causes extra distress, and the six-hour periods could have been shorter or the study stopped when ulcers developed. The benefits are also doubtful, as the executive monkeys were chosen because they learned to press the lever quickest rather than at random, and Weiss (1972) found with rats that having control

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reduces stress, so Brady's findings may not be valid, meaning the suffering was not justified.

Overall, although Brady used a small number of monkeys and aimed to benefit humans, the severe pain, restraint and deaths mean the study does not meet the requirements of the Animals (Scientific Procedures) Act 1986 and would be judged unethical.

(Total for Question 16 = 8 marks)

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17 Evaluate Type A personality as a factor that influences stress.

(8)

Type A personalities are competitive, time conscious, impatient and often hostile, whereas Type B personalities are relaxed and easy-going. Because they are competitive, Type A people find it hard to switch off from work and always want to achieve more, which increases stress. Being time conscious, they set unrealistic schedules and become impatient when they feel time is being wasted, so they experience more stressors in all areas of life. They may also find stress management techniques such as meditation frustrating, which can increase their stress further. Prolonged stress is linked to physical illness such as coronary heart disease (CHD).

Friedman and Rosenman (1974) followed over 3,000 healthy men in the USA for eight and a half years and found that Type A men were about twice as likely to develop CHD as Type B men, supporting the idea that Type A personality increases stress and its effects. Ilyas et al. (2019) found that stress-prone Type A personality is significantly related to anxiety, and both play a role in heart disease. This has practical application, as people who know they are Type A can choose stress management that suits them, such as fast exercise.

However, a lot of early research on Type A personality was funded by the tobacco industry, which wanted to show personality and stress, not smoking, caused heart disease, so the validity of this research is questionable. Much research measures heart disease and assumes Type A people are more stressed, but other factors such as smoking, diet and lifestyle choices could explain the link, so cause and effect cannot be established. Later research suggests that only the hostility component of Type A, rather than the whole personality type, is linked to illness, and Friedman and Rosenman only studied middle-aged American men, so their findings cannot be generalised to women or other cultures.

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In conclusion, Type A personality is a factor that influences stress, as competitiveness, time urgency and hostility create more stressors, but the evidence is weakened by funding bias and confounding lifestyle variables, so it is best seen as one factor that interacts with others rather than a direct cause of stress.

(Total for Question 17 = 8 marks)

TOTAL FOR SECTION B OPTION 2 = 32 MARKS
TOTAL FOR PAPER = 64 MARKS

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