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Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

CENTRE NUMBER | CANDIDATE NUMBER

4214547224

PSYCHOLOGY **9990/11**

Paper 1 Approaches, Issues and Debates **October/November 2024**

1 hour 30 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.

INFORMATION

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [ ].

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Section A

Answer **all** questions.

1 In the study by Hassett et al. (monkey toy preferences):

(a) A sample of monkeys from a troop of 135 was used.

State the total number of monkeys used as the final sample.

34 monkeys (11 males and 23 females). [1]

(b) Identify **two** toys that were categorised as 'wheeled' in this study.

1 *Wagon*

2 *Truck*

[2]

(c) Outline **one** conclusion from this study.

Sex differences in toy preferences in rhesus monkeys, like those in children, suggest that toy preferences reflect hormonally influenced behavioural and cognitive biases, which are then shaped further by social processes such as socialisation.

[2]

2 From the study by Saavedra and Silverman (button phobia):

(a) Outline the change in ratings of distress when the boy had to imagine hugging his mother with her shirt full of buttons.

The boy's distress rating fell over the imagery exposure: it was 7 at the start (session 1), fell to 4 midway through (session 2) and was down to 3 at the end of the final session, so the biggest decrease was between the first and second sessions.

[2]

(b) Explain **one** weakness of this study.

It lacks generalisability. It was a case study of only one boy with a rare phobia of buttons, so he may be unique, and other people with phobias may not respond to disgust-based imagery exposure in the same way.

[2]

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3 From the study by Pozzulo et al. (line-ups):

(a) Outline **one** aim of the study.

To investigate the role of social and cognitive factors in children's false positive responding in line-ups, by testing whether children's errors in target-absent line-ups remain when the familiarity of the target is manipulated (familiar cartoon characters vs unfamiliar human faces). [2]

(b) Explain why this study is from the cognitive approach in psychology.

The cognitive approach assumes that behaviour can be explained by internal mental processes such as memory, perception and attention. The study measured face recognition: participants saw a target (input), stored the face in memory (processing) and then identified them from a line-up (output). [2]

4 In the study by Milgram (obedience), there was a 'learning task'. Milgram called this a 'paired-associate learning task'.

Describe this 'learning task'.

The teacher (the participant) first read a series of word pairs to the learner, for example "blue box", "nice day", "wild duck". The teacher then read out the first word of a pair (e.g. "blue") along with four terms, e.g. "sky, ink, box, lamp". The learner had to indicate which of the four terms had originally been paired with the first word. He did this by pressing one of four switches in front of him, which lit up one of four numbered quadrants in an answer box on top of the shock generator, so the teacher could see his answer. A correct answer meant the teacher moved on to the next word pair, but each wrong answer was followed by a shock.

[5]

5 **(a)** Outline **two** assumptions of the biological approach in psychology.

1 *Behaviour, cognitions and emotions can be explained in terms of the working of the brain and the effects of hormones and genetics (and evolution), e.g. a change in brain structure can change how we think and feel.*

2 *Similarities and differences between people can be understood in terms of biological factors (e.g. differences in their brain, hormones or genes) and how these interact with other factors such as the environment.*

[4]

(b) Explain how **one** finding from the study by Hölzel et al. (mindfulness and brain scans) supports **one** of the assumptions you outlined in part **(a)**.

After the 8-week MBSR course, the mindfulness group showed an increase in grey matter concentration in the left hippocampus, which is involved in learning, memory and emotion regulation. So the better emotional control they reported can be explained by a change in the brain (assumption 1). [2]

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6 In the study by Perry et al. (personal space), the participants had to complete two conditions. One was the oxytocin condition.

(a) Describe how the participants received the oxytocin.

The participants self-administered the oxytocin intranasally (through the nose), in the presence of the experimenter. They were given 24 IU of oxytocin and used a medicine dropper to put three drops into each nostril. They then waited about 45 minutes before the tasks began.

[3]

(b) Identify what was received by participants when in the other condition, instead of oxytocin.

A placebo of saline (salt water) nasal drops. [1]

(c) Explain **one** strength of this study.

It used a double-blind procedure, which reduces demand characteristics and researcher bias. Neither the participants nor the experimenter knew whether oxytocin or saline had been given, so participants could not change how close they let the figure come to fit the expected effect. [2]

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7 Gabriela has a job where she needs to listen to recorded telephone conversations to check the quality of customer service. However, she finds it difficult to pay attention to the recordings. She wants advice on how to improve her attention.

Outline what advice you would give to Gabriela, using your knowledge of the study by Andrade (doodling).

I would tell Gabriela to keep a sheet of paper and a pen next to her when she listens to the recordings. While she is listening, she should doodle, for example by shading in shapes printed on the paper, as the doodling group in Andrade's study shaded squares and circles while listening to a boring telephone message. Doodling should stop her daydreaming and keep her alert, so she pays more attention. She should also listen out for specific information, like Andrade's participants who listened for the names of people coming to a party, and note it down. Afterwards a colleague could check how much she can recall.

..... [4]

8 Adamu is talking about the study by Baron-Cohen et al. (eyes test). He says that the findings are **not** generalisable.

Explain why Adamu is correct that the findings are **not** generalisable, using evidence from this study in your answer.

Generalisability is whether the findings from the sample can be applied to the wider target population. Adamu is correct because Group 1 (AS/HFA) had only 15 participants and they were all male, so the results may not apply to females with AS/HFA. They were also volunteers who answered an advertisement in the National Autistic Society magazine, so they may differ from non-volunteers. Group 2 (general population) came only from adult education classes and public library users, and Group 3 were all students at Cambridge University, a prestigious university, so they may not represent other people or other students. ..... [4]

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Section B

Answer **all** questions.

9 From the study by Dement and Kleitman (sleep and dreams):

(a) Outline **two** dreams reported by participants that had vertical eye movements.

1 *One participant dreamed he was standing at the bottom of a tall cliff operating a hoist. He was looking up at climbers at various levels on the cliff and down at the hoist machinery.*

2 *Another participant dreamed he was climbing up a series of ladders. He was looking up and down as he climbed, matching the vertical eye movements recorded on the EEG.*

[4]

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(b) Explain **two** differences between the study by Dement and Kleitman (sleep and dreams) and the study by Hölzel et al. (mindfulness and brain scans). One of the differences **must** be about the technique used to investigate the brain.

Difference 1 *They used different techniques to investigate the brain. Hölzel et al. used MRI scans, taken before and after the 8-week MBSR course, to measure changes in grey matter concentration in areas such as the left hippocampus. Dement and Kleitman used an EEG, with electrodes on the scalp and near the eyes, to record electrical brain wave activity and eye movements during sleep, e.g. to identify REM sleep. So Hölzel et al. looked at the structure of the brain, whereas Dement and Kleitman measured brain function (activity) in real time.*

Difference 2 *They used different experimental designs. Dement and Kleitman used a repeated measures design: the same participants were woken during both REM and NREM sleep, and their dream recall was compared. Hölzel et al. used an independent groups design: the MBSR group was compared with a separate waiting-list control group who did not do the course. This means Dement and Kleitman controlled participant variables, whereas in Hölzel et al. differences between the groups could partly be due to individual differences between the people in each group.*

[8]

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10 Evaluate the study by Bandura et al. (aggression) in terms of **two** strengths and **two** weaknesses. At least one of your evaluation points **must** be about validity.

One strength is that Bandura et al. had high internal validity because of strong controls. Before the study, each child was rated on physical aggression, verbal aggression, aggression towards objects and aggressive inhibition by the experimenter and a nursery teacher who knew them well, with high inter-rater reliability (0.89). Children were then matched in threes on these scores and allocated to the aggressive, non-aggressive and control conditions. So the groups started with similar levels of aggression, and Bandura could be more confident that the IV (type of model) caused the differences in the DV (the imitative aggression the children showed).

A second strength is the standardised procedure, which makes the study reliable. The aggressive model always performed the same aggressive acts in the same order, such as hitting the Bobo doll with the mallet and saying "Pow" and "Sock him in the nose", and every child spent 20 minutes in the same test room with the same toys, observed through a one-way mirror and recorded every five seconds. This means the study could be replicated to check whether the same results are found.

However, one weakness is low ecological validity. The children only watched an unfamiliar adult for about ten minutes, in a strange room, and the Bobo doll is a toy designed to be hit. Real-life aggression usually involves people the child knows, such as parents, and hurting another person, so the findings may not show how children learn aggression in everyday life. Children may also have shown demand characteristics, thinking they were expected to hit the doll.

A second weakness is that the study was unethical. Children were exposed to verbal and physical aggression, and in the aggression arousal stage they were deliberately frustrated by being told that the attractive toys were reserved for other children. They could not give valid consent or easily withdraw, and they may have learned aggressive behaviour that lasted after the study.

Overall, the study gives valid and reliable evidence that children learn aggression by observing models, but its artificial setting and ethical problems limit how far it applies to

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real life.

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Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

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PSYCHOLOGY **9990/12**

Paper 1 Approaches, Issues and Debates **October/November 2024**

1 hour 30 minutes

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Section A

Answer **all** questions.

1 In the study by Saavedra and Silverman, a boy was treated for a specific phobia.

(a) Identify the specific phobia the boy was being treated for.

A phobia of buttons (koumpounophobia). [1]

(b) Describe the 'Feelings Thermometer' used in the study.

It was a 9-point rating scale from 0 (no distress) to 8 (very high distress). The boy used it to rate his subjective distress about 11 different button stimuli, which were put into a hierarchy, e.g. small denim jean buttons were rated 3. [2]

(c) Identify **two** findings from the post-treatment session.

1 *He reported only minimal distress about buttons.*

2 *He could wear clear plastic buttons on his school uniform shirt daily.*

[2]

2 From the study by Baron-Cohen et al. (eyes test):

(a) Outline **one** result in relation to sex of participant and scores on the Reading the Mind in the Eyes test.

Males from the general population (Group 2) scored lower on the Eyes test than the male students at Cambridge University (Group 3), so the students, male or female, scored higher. [2]

(b) Explain **one** weakness of this study.

It lacks mundane realism. Looking at still black and white photographs of only the eye region and choosing a word is not how we read emotions in everyday life, where we see the whole moving face and hear the person's voice. [2]

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3 From the study by Piliavin et al. (subway Samaritans):

(a) Outline what is meant by the term 'bystander apathy'.

Bystander apathy is when people who witness an emergency (bystanders) fail to help or are less likely to help the victim, often because the presence of other people diffuses responsibility, so each person thinks someone else will help.

[2]

(b) Explain **one** reason why this study supports a situational explanation of behaviour.

A situational explanation says behaviour is caused by external factors in the environment rather than internal dispositions. In this study the type of victim affected helping: the cane (ill) victim received spontaneous help on 62 of 65 trials, but the drunk victim on only 19 of 38.

[2]

4 In the study by Hölzel et al. (mindfulness and brain scans), one of the groups participated in a Mindfulness-Based Stress Reduction course. There were 'inclusion criteria' for this group.

Describe these inclusion criteria.

Participants had to have enrolled themselves, or been referred by their doctor, on an 8-week MBSR course (one of four courses in New England) to reduce stress. They had to be aged 25 to 55 and report being physically and psychologically healthy, and not be taking any medication. They must not have taken part in any meditation classes in the last six months, and no more than four classes in the past five years (or ten in their lifetime). They had to be able to have an MRI scan, e.g. no claustrophobia or metal implants, and commit to attending all eight classes and doing the homework.

[5]

5 **(a)** Outline **two** assumptions of the social approach in psychology.

1 *Behaviour, cognitions and emotions are influenced by social contexts, such as the culture and social environment we live in, and by the groups we belong to.*

2 *Behaviour, cognitions and emotions are influenced by the actual, implied or imagined presence of other people, e.g. we behave differently when others are watching.*

[4]

(b) Explain how **one** finding from the study by Perry et al. (personal space) supports **one** of the assumptions you outlined in part **(a)**.

In Experiment 2, participants chose a smaller comfortable distance when they imagined a friend approaching than when they imagined a stranger. This supports assumption 2, as the imagined presence of a different type of person changed their personal space. [2]

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6 In the study by Hassett et al. (monkey toy preferences), each trial lasted for 25 minutes within the monkey enclosure.

(a) Describe the procedure for a trial.

Before the trial, the social group of monkeys was placed in the indoor part of their enclosure. One wheeled toy and one plush toy were then put in the outdoor area, about 10 metres apart. Which side (left or right) each type of toy was placed on was counterbalanced across trials. The monkeys were then let back into the outdoor area for the 25 minutes, and every interaction with each toy was videotaped, with a separate camera focused on each toy.

[4]

(b) Explain **one** strength of this study in relation to observations.

The interactions were videotaped, so the observations were objective and easy to quantify. For example, the frequency and duration of each monkey's play with the wheeled and plush toys could be measured exactly, so comparisons between males and females were meaningful.

[2]

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7 Children can be eyewitnesses to a crime. However, children's identification of the criminal can be inaccurate.

Suggest how child eyewitnesses can be helped to accurately identify the criminal they have seen, using your knowledge of the study by Pozzulo et al. (line-ups).

The person interviewing the child should dress casually rather than in a formal uniform and speak in a calm, friendly tone, and could play with the child beforehand so the child feels comfortable. This reduces social pressure, which Pozzulo et al. found makes children pick someone when the criminal is not there. The child should be told clearly that the criminal may not be in the line-up, and be given a "not there" option such as the silhouette used in the study. The interviewer should ask open, non-leading questions and should not question the child's choice.

..... [4]

8 Tejas is talking about the study by Bandura et al. (aggression). He says that the study is **not** ethical.

Explain why Tejas is correct that the study is **not** ethical, using evidence from this study in your answer.

Bandura et al. broke the guideline of protection from harm, as the children may have been put under psychological stress. Some children watched an adult being aggressive to the Bobo doll, hitting it with a mallet and shouting "Pow", which may have frightened them. All the children went through the aggression arousal stage, where they were stopped from playing with attractive toys because these were "reserved for other children". The children could not give valid consent, did not know they were being observed through a one-way mirror, and may have learned aggressive behaviour that continued after the study. ..... [4]

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Section B

Answer **all** questions.

9 **(a)** Describe the sample used in the study by Milgram (obedience).

There were 40 male participants aged between 20 and 50 years, from New Haven and the surrounding area. It was a volunteer sample: they responded to a newspaper advertisement and direct mail asking for people to take part in a study of memory and learning at Yale University. They were paid $4.50 for taking part. They had a wide range of occupations, e.g. postal clerks, teachers, salesmen, engineers and labourers, and educational levels ranged from not finishing elementary school to a doctorate.

[4]

(b) Explain **two** differences between the study by Milgram (obedience) and the study by Perry et al. (personal space). One of the differences **must** be about ethics.

Difference 1 *Milgram was less ethical because he broke the guideline of protection from harm. His participants were put under great stress; many sweated, trembled and laughed nervously, and three had full-blown uncontrollable seizures. The prods, e.g. "You have no other choice, you must go on", also made it hard to use the right to withdraw. In Perry et al. the risk of harm was low, as participants could stop the figure approaching at any time by pressing the spacebar, and the oxytocin was a safe dose, so Perry et al. was more ethical.*

Difference 2 *They used different types of stooge. Milgram used a real person as a confederate, Mr Wallace, a 47-year-old accountant, who the participant met at the start but then only heard through the wall, protesting and pounding on it. In Perry et al. the "stooge" was a computer-simulated figure that approached the participant on a screen, or an imagined stranger or friend in Experiment 2. So in Milgram the participants believed a real person was being harmed, whereas in Perry they knew the figure was not real.*

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10 Evaluate the study by Andrade (doodling) in terms of **two** strengths and **two** weaknesses. At least one of your evaluation points **must** be about the sampling technique used.

One strength is the sampling technique, which suited the aim. Andrade used an opportunity sample of 40 participants from the participant panel of the Medical Research Council Applied Psychology Unit in Cambridge, who were asked to take part just after they had finished an unrelated study for another researcher. Because they were already tired and expected to go home, they were likely to be bored, which was exactly the state Andrade wanted to study, as the aim was whether doodling helps concentration during a boring task. It was also quick and easy to recruit them.

A second strength is the standardised procedure, which makes the study reliable. All participants heard the same recorded mock telephone message, about two and a half minutes long and spoken in a monotonous voice, about a birthday party, and they all had to write down the names of the people who would be coming. The doodling group were all given the same sheet of squares and circles to shade in. This means the study could be replicated to check whether doodlers again recall more, and the differences, such as the doodling group recalling 29% more information, were caused by the IV (doodling) rather than differences in procedure.

However, one weakness is also the sample. Of the 40 participants, 35 were female and only 5 were male, and they were all members of one panel in Cambridge who regularly volunteer for psychology studies. So the findings may not be generalisable to men or to the wider population, and experienced panel members may have guessed the aim and shown demand characteristics.

A second weakness is low ecological validity. Shading in printed shapes is not how people normally doodle, as real doodling is spontaneous and the person chooses what to draw. Also, listening to a short recorded message in a laboratory is not like a real phone call or a long meeting, so the results may not apply to everyday situations where people doodle.

Overall, the study gives reliable, objective evidence that doodling can aid attention and recall, but the mostly female panel sample and the artificial task limit how far it can be generalised.

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Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

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PSYCHOLOGY **9990/13**

Paper 1 Approaches, Issues and Debates **October/November 2024**

1 hour 30 minutes

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Section A

Answer **all** questions.

1 In the study by Dement and Kleitman (sleep and dreams), five participants were studied intensively. There were also a number of participants who had minimal data collected from them.

(a) State the number of participants who had minimal data collected from them.

4 ..... [1]

(b) Before the study began, participants were given two instructions about what they must **not** do:
- do **not** consume alcohol
- do **not** consume caffeine.

Participants were also given two instructions about what they must do.

State these **two** instructions.

1 Eat normally during the day. .....

2 Arrive at the laboratory just before their usual bedtime. .....
[2]

(c) Outline **one** conclusion from this study in relation to dreaming.

Dreaming occurs during REM sleep and dreams happen in real time, not instantly. .....

Also, the eye movements during REM sleep correspond with the content of the .....

dream, as if the dreamer is looking at the events in the dream. .....

..... [2]

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2 From the study by Hassett et al. (monkey toy preferences):

(a) Outline **one** result in relation to sex differences in frequency of play with 'plush' toys.

Female monkeys played with plush toys with a higher frequency (more interactions), on average, than male monkeys did.

..... [2]

(b) Explain **one** weakness of this study.

It lacks generalisability. The sample was a troop of captive rhesus monkeys living at a field station, so wild rhesus monkeys, which never come across human toys, may respond differently.

..... [2]

3 From the study by Saavedra and Silverman (button phobia):

(a) Outline how positive reinforcement was used in the treatment of the boy's phobia.

Positive reinforcement was provided by the boy's mother. She gave him a reward each time he successfully completed a step of the gradual exposure to buttons (exposure-based therapy), so the reward was contingent on his success.

..... [2]

(b) Explain **one** reason why this study supports the nurture side of the nature versus nurture debate.

Nurture means behaviour is learned through experiences after birth. The boy's phobia began at age 5 when he ran out of buttons in class, had to get more from a bowl and touched them, so the phobia was learned. Later, therapy (experience) reduced his distress. ..... [2]

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4 From the study by Pozzulo et al. (line-ups):

Describe the 'line-up presentation' for the target–present condition.

Each participant watched four short videos, in a random order, on a laptop computer. After each video they were shown a line-up (photo array) on the screen. In the target-present condition, the photograph of the target from the video was included in the line-up along with three other photographs (foils) who looked similar. All four photographs were presented simultaneously. The target's position in the line-up was randomised and counterbalanced across the line-ups. A silhouette was also shown, which participants could choose if they thought the target was not there.

[5]

5 **(a)** Outline **two** assumptions of the learning approach in psychology.

1 *We all begin life as a blank slate, so our behaviour is shaped by our experiences and interactions with the environment, and these changes in behaviour can be directly observed.*

2 *We learn through the processes of classical conditioning, operant conditioning and social learning (observing and imitating role models), which can be understood using the stimulus-response model.*

[4]

(b) Explain how **one** finding from the study by Bandura et al. (aggression) supports **one** of the assumptions you outlined in part **(a)**.

Children who had seen an aggressive model imitated more physical and verbal aggression, such as hitting the Bobo doll with the mallet, than those who saw a non-aggressive model. This supports assumption 2, as they learned the behaviour by observing and imitating a model. [2]

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6 From the study by Andrade (doodling):

(a) Describe the psychology being investigated in this study.

The study investigated attention, which is our ability to concentrate our cognitive resources on one task or stimulus. Andrade looked at whether doodling while doing a dull task helps concentration and memory. One idea is that doing two things at once (dual tasks) competes for cognitive resources, so a second task like doodling should distract and reduce performance. The other idea is that when we are bored, our arousal drops and we daydream, so a simple task like doodling may keep arousal up and reduce daydreaming, improving attention, e.g. to a boring telephone message.

[4]

(b) Explain **one** strength of this study in relation to reliability.

The procedure was standardised, so it could be replicated to check the reliability of the results. For example, all participants heard the same recorded mock telephone message about a party, with the same names and places, for the same length of time.

[2]

7 Your friend Ruru has read a story in a newspaper about a nurse who gave incorrect medicine to a patient because a doctor told her to. Ruru says that he cannot understand why the nurse would do that.

Suggest to Ruru why the nurse gave incorrect medicine, using your knowledge of the study by Milgram (obedience).

The nurse probably saw the doctor as a legitimate authority figure, like Milgram's experimenter in a grey lab coat, and the doctor's uniform and status in a respected hospital would increase this, just as Yale University did in Milgram. The doctor may have given a firm order, like the prods "The experiment requires that you continue". She may have felt the doctor was responsible for the outcome, not her. In Milgram, 65% of participants went to the maximum 450 volts just because they were told to, so she was simply following orders.

[4]

8 Betsy is talking about the study by Hölzel et al. (mindfulness and brain scans). She says that the study has validity.

Explain why Betsy is correct that the study has validity, using evidence from this study in your answer.

Validity is whether a study measures what it claims to measure. Hölzel et al. used MRI scans before and after the course, which are an objective measure of grey matter concentration, so the DV was measured accurately. There was a waiting-list control group who did not do the MBSR course, so changes in the MBSR group were more likely to be caused by mindfulness rather than time. The inclusion criteria, e.g. no medication and no recent meditation classes, controlled variables. The MBSR course was a real course, so it had ecological validity, and the FFMQ was a valid measure of mindfulness.

..... [4]

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Section B

Answer **all** questions.

9 **(a)** Describe the sample used in the study by Fagen et al. (elephant learning).

There were five elephants, all female, from the same elephant stable in Nepal. Four were juveniles aged 5 to 7 years and one was an adult in her 50s, who had a foot abscess and impaired vision. They were selected for their docility, were not pregnant and had no calves, and their mahouts were willing to take part. All had been trained using traditional methods and had no experience of positive reinforcement with a secondary reinforcer.

[4]

(b) Explain **one** similarity and **one** difference between the study by Fagen et al. (elephant learning) and the study by Bandura et al. (aggression). Do **not** refer to the sample in your answer.

Similarity *Both studies used observation to collect data, with specific behaviours operationalised, which makes recording more objective and valid. In Fagen et al. the trainers recorded whether each elephant performed behaviours such as "trunk up", where the elephant lifts its trunk into the air. In Bandura et al. observers behind a one-way mirror recorded behaviours such as aggressive gun play, where the child aimed the toy gun and fired imaginary shots at objects in the room. In both, the behaviour was counted, giving quantitative data.*

Difference *They differed in their research method and level of control. Bandura et al. was a laboratory experiment: the IV (type of model) was manipulated, there was a control group who saw no model, and the rooms and toys were standardised. Fagen et al. trained elephants in their normal surroundings with no control group, e.g. elephants trained without reinforcement. So Bandura et al. could conclude that the model caused the aggression, while Fagen et al. could not be sure the training method alone caused the learning.*

[8]

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10 Evaluate the study by Piliavin et al. (subway Samaritans) in terms of **two** strengths and **two** weaknesses. At least one of your evaluation points **must** be about ethics.

One strength is high ecological validity. The study was a field experiment carried out on a real New York subway train (the 8th Avenue express between 59th Street and 125th Street) with real passengers who did not know they were being studied. The emergency, a man collapsing about 70 seconds after the train left the station, was something that could really happen, so the passengers' helping behaviour was natural and the findings, e.g. that the cane victim received spontaneous help on 62 of 65 trials, reflect real-life helping.

A second strength is that both quantitative and qualitative data were collected. The two female observers recorded the race, sex and location of passengers, the number who helped and how long it took for help to arrive, which allowed objective comparisons between conditions, such as the ill and drunk victims. They also recorded comments made by passengers, such as "It's for men to help him", which gave richer detail about why people did or did not help.

However, one weakness is that the study was unethical. The passengers did not give informed consent, as they did not know they were in a study, and they were deceived into believing that a real man had collapsed. Watching someone stagger and fall could have been psychologically distressing, especially for those who did not help and may have felt guilty. They could not withdraw and were not debriefed, as they left the train at the next station.

A second weakness is the lack of control over variables. Because it was a field experiment, the researchers could not control who was on the train, how crowded it was, or whether the same passengers saw more than one trial, which could have affected helping. Also, the trials took place on one subway line in New York between 11am and 3pm in 1968, so the findings may not generalise to other places, times or cultures.

Overall, the study gives valid insight into real-life helping behaviour, but this came at an ethical cost and with less control than a laboratory study.

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