Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

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4658060040

PSYCHOLOGY **9990/11**

Paper 1 Approaches, Issues and Debates **October/November 2021**

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.
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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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Answer **all** questions.

1 From the study by Bandura et al. (aggression):

(a) State the number of participants used in this study.

72 children (36 boys and 36 girls). [1]

(b) Describe how the participants were rated on their aggressive behaviours before the experimental conditions.

They were rated independently by the experimenter and a nursery school teacher who knew them well, on four five-point scales: physical aggression, verbal aggression, aggression towards inanimate objects and aggression inhibition. The ratings were used to match the children in groups. [2]

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

Children who observe an aggressive adult model are likely to imitate that aggression, even when the model is no longer present, and they are more likely to imitate a same-sex model, so aggression can be learned through observation.

[2]

2 From the study by Andrade (doodling):

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

Andrade investigated whether doodling aids concentration and memory. When a task is boring, arousal levels drop and people may daydream, which takes attention away from the main task. Doodling is a simple second task that may keep arousal high enough to stop daydreaming, so attention stays on the information. However, doing two things at once (dual tasks) could also compete for limited cognitive processing resources and act as a distraction. [3]

(b) Outline **one** strength of this study in relation to the experimental design used.

Andrade used an independent measures design, so each participant only heard the message once, in either the doodling or control group. This avoided order effects, such as practice or boredom, and made it less likely they would work out the aim (demand characteristics). [2]

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3 From the study by Canli et al. (brain scans and emotions):

(a) Outline the sampling technique used in this study.

Volunteer (self-selected) sampling: participants choose to take part themselves, e.g. by responding to an advertisement. Canli et al. used 12 healthy, right-handed female volunteers.

..... [2]

(b) Outline **two** questions that participants were asked during the recognition test.

1 *Have you seen this scene (picture) before?*

.....

2 *If yes, do you remember it with certainty (remembered) or is it just familiar?*

..... [2]

(c) Describe the correlation between participants' intensity ratings and normative arousal ratings.

There was a positive correlation: as the normative arousal rating of a scene went up, so did the participants' own intensity rating, so the scenes that were normally rated as more arousing were also rated by participants as more emotionally intense.

..... [2]

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

(a) Describe what the victim did during a trial.

The victim always stood next to the pole in the centre of the end area of the carriage (the critical area). About 70 seconds after the train passed the first station, he staggered forward and collapsed onto the floor. He then remained lying on his back (supine), looking up at the ceiling, until he received help. If no one had helped him by the time the train slowed for the next stop, the model helped him to his feet. At the stop the victim left the train with whoever had helped him. In the cane condition he appeared sober and carried a black cane; in the drunk condition he smelled of alcohol and carried a liquor bottle wrapped in a brown bag.

[5]

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

It was unethical: passengers were deceived and gave no informed consent.

[1]

5 From the study by Laney et al. (false memory):

(a) Identify **two** characteristics of the sample used in Experiment 2.

1 *They were undergraduate students (University of California, Irvine).*

2 *They were mainly female, with a mean age of about 20 years.*

[2]

(b) Explain **one** reason why the Food Costs Questionnaire may **not** accurately measure the most someone is willing to pay for a food item in a grocery store.

It is a self-report questionnaire, so what people say they would pay may not mirror what they actually do. In a real grocery store the asparagus may look more or less appealing and prices vary, so a student may in fact pay a different amount from the one they ticked. [2]

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6 The study by Pepperberg (parrot learning) is based on social learning theory.

(a) Describe social learning theory.

Social learning theory says behaviour is learned by observing a model and imitating them. First the learner must pay attention to the model's behaviour. They must then retain (remember) what was observed so it can be used at a later date. They must feel capable of reproducing the behaviour themselves. Finally they must be motivated to imitate it, often through vicarious reinforcement; seeing the model rewarded for the behaviour. Models similar to the learner, such as same-sex models, are more likely to be imitated.

..... [4]

(b) Outline how **one** result from this study supports social learning theory.

Alex scored 76.6% correct on same/different tests with familiar objects, well above chance. This supports social learning theory because he had watched the model/rival be rewarded for correct answers about same/different, then imitated those responses.

..... [2]

7 Steve has learned about the study by Dement and Kleitman (sleep and dreams). He believes that the study is ethical.

(a) Outline what is meant by the ethical guideline of 'informed consent'.

Informed consent means participants are given enough information about the aims and procedure of a study before it begins, so they can decide whether or not they want to take part.

[2]

(b) Outline why Steve is correct that this study is ethical, using evidence in your answer.

Confidentiality was maintained; the participants were only identified by their initials in the results, such as DN and WD, so they cannot be identified. There was no deception about the procedure, as participants knew they would be sleeping in a laboratory with their sleep and dreams monitored, and woken up during the night. Privacy was respected, because participants were not forced to describe the content of their dreams if they did not want to. They were also protected from physical harm, since the EEG electrodes attached to the scalp and around the eyes are non-invasive and safe. [4]

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8 **(a)** Outline the debate about individual and situational explanations in psychology, using an example other than the study by Milgram (obedience).

The individual explanation says that behaviour is caused by factors within the person, such as their personality or disposition. For example, in Piliavin et al. some passengers may have helped the collapsed victim because they have an altruistic, caring personality. The situational explanation says behaviour is caused by the environment the person is in. For example, Piliavin et al.'s passengers may have helped because they were trapped in the subway car with the victim for 7.5 minutes and could not easily escape the situation. The debate is about which explanation is more important.

..... [4]

(b) Explain what psychologists have learned about obedience using **two** results from the study by Milgram.

First, ordinary people will obey destructive orders from an authority figure. In Milgram's study all 40 participants (100%) continued to at least 300 volts, and 26 of them (65%) went on to the maximum 450 volts, even though they believed they were hurting a man with a heart condition. Before the study, Yale psychology students predicted only around 1% would go that far. This shows that obedience is far higher than people expect, and that the presence of a legitimate authority (an experimenter at Yale University giving prods) can override our moral beliefs about not harming others. It also suggests that it was not only Germans in the Second World War who would obey destructive orders.

Second, people experience great distress when obeying destructive orders. Many participants showed signs of extreme tension such as sweating, trembling, stuttering, biting their lips and groaning. 14 showed nervous laughter and three had full-blown uncontrollable seizures. Despite this, most continued. This shows that obedient people are not cruel: they are in conflict between their conscience and the pressure to obey, yet the situation leads most of them to obey anyway.

..... [8]

9 Evaluate the study by Baron-Cohen et al. (eyes test) in terms of **two** strengths and **two** weaknesses. At least one of your evaluation points **must** be about generalisations.

One strength is that the study produced quantitative data. Each participant's score was the number of the 36 eyes items they answered correctly, choosing from four words (the target and three foils). This made it easy to compare groups objectively: the adults with AS/HFA scored significantly lower (mean about 21.9) than the IQ-matched general population group (mean about 30.9). Because scoring did not depend on the researcher's interpretation, the data is objective and the conclusion that adults with AS/HFA have a theory of mind deficit is clearly supported.

A second strength is reliability and validity of the test. The Revised Eyes Test used standardised black and white photos, the same instructions and a glossary of word meanings for every participant, so it is easy to replicate. It improved on the original test by having four word choices instead of two and more items, which avoided ceiling effects, and each target word was checked by a panel of judges, so the test is more likely to measure what it claims to measure.

However, a weakness is about generalisations. Group 1 contained only 15 males with AS/HFA, so the results cannot be generalised to females with autism, who may show the condition differently, or to people with more severe autism. Group 3 were Cambridge students, mostly studying science, who are not typical of the general population, so the norms may not apply to everyone.

A second weakness is ecological validity. Participants judged static photos of eyes only, but in real life we attribute mental states using moving faces, tone of voice, body language and context. Someone may score low on the test but still understand others well in everyday interactions, so the test may not fully measure real-world theory of mind.

Overall, the quantitative, standardised test gives clear and reliable evidence of a difference between groups, but the small all-male clinical sample and artificial task mean the findings should be generalised to everyday life with care.

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Cambridge International AS & A Level

CANDIDATE NAME: StemUp Model Solution

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9356407020

PSYCHOLOGY **9990/12**

Paper 1 Approaches, Issues and Debates **October/November 2021**

1 hour 30 minutes

You must answer on the question paper.

No additional materials are needed.

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Answer **all** questions.

1 From the study by Saavedra and Silverman about a boy with a button phobia:

(a) State who provided the boy with positive reinforcement during the Behavioural Exposures stage of his therapy.

His mother. [1]

(b) Name **two** stimuli that were rated 4 or lower on the boy's Disgust/Fear Hierarchy.

1 *Large denim jean buttons.*

2 *Clear large plastic buttons.* [2]

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

Disgust, not just fear, can play a key role in the development and maintenance of a phobia, and a phobia like this can be successfully treated using imagery exposure focused on disgust, with long-term benefits.

[2]

2 From the study by Pepperberg (parrot learning):

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

The study investigated whether a parrot could learn the abstract concept of same and different. It used the model/rival technique, based on social learning: Alex observed a human model being rewarded for correct answers and imitated them. It also involved operant conditioning, where correct answers were rewarded with the object, so the behaviour was more likely to be repeated, and incorrect answers were met with disapproval. [3]

(b) Outline **one** strength of this study in relation to validity.

Researcher bias was reduced: during test trials the questions were asked by a trainer who had not trained Alex on same/different, so the trainer could not unconsciously cue the correct answer, making it more likely that Alex really understood the concept.

[2]

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3 Before the study by Canli et al. (brain scans and emotions), other psychologists had found a relationship between amygdala activation and memory.

Canli et al. reported three alternative reasons for this relationship, other than amygdala activation causing the formation of memories.

(a) Outline **two** of these alternative reasons.

1 *Some individuals may simply be more responsive to emotional experiences than others, for example because of their personality type, so they would show both greater amygdala activation and better memory, without one causing the other.*

2 *Some individuals may experience emotions more strongly while being brain scanned, responding more to the emotional stimuli in that setting, which would produce more amygdala activation and stronger memories for those stimuli.* [4]

(b) Describe the correlation between participants' intensity ratings and valence ratings.

There was a negative correlation: as the participants' intensity ratings went up, the valence ratings went down. So scenes with a lower (more negative) valence rating, such as unpleasant images, were rated as more emotionally intense. [2]

4 From the study by Yamamoto et al. (chimpanzee helping):

(a) Describe the familiarisation phase of this study.

Each chimpanzee had eight familiarisation trials, one trial per day, so they were spread over eight days. Each trial lasted 5 minutes. The chimpanzee was given the tools (objects) and allowed to freely manipulate and play with any of them, but no tool-use situation (no juice reward task) was set up for them.

..... [3]

(b) Outline the **two** possible outcomes that ended a trial.

1 *The recipient chimpanzee succeeded in getting the juice reward (using the tool).*

2 *Five minutes passed without an appropriate tool being transferred.*

..... [2]

(c) Identify **one** methodological weakness of this study.

It lacks ecological validity, as the booth task was artificial.

..... [1]

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5 From the study by Schachter and Singer (two factors in emotion):

(a) Identify **two** features of the sample used in this study.

1 *They were all male (184 men).*

2 *College students in introductory psychology at the University of Minnesota.*

[2]

(b) One of the questions that the participants were asked about their mood was 'How good or happy would you say you feel at present?'

Explain **one** reason why this question may **not** measure mood accurately.

It is a subjective self-report measure; each participant may interpret "good" or "happy" differently, and they may give a socially desirable answer, so saying they felt happy does not mean that is what they actually felt after the euphoric stooge.

[2]

6 The study by Baron-Cohen et al. (eyes test) is based on Theory of Mind.

(a) Describe what is meant by 'Theory of Mind'.

Theory of mind is the ability to attribute mental states, such as beliefs, desires, intentions and emotions, to ourselves and to other people. It allows us to understand that others may have different thoughts and feelings from our own, by imagining ourselves in their position. We then use this knowledge to explain and predict other people's behaviour, and it is linked to empathy. People with AS/HFA are thought to have a deficit in theory of mind, which can be tested by the Eyes Test, where people judge mental states from photos of eyes only.

[4]

(b) Suggest **one** real-world application based on the procedure of this study.

The Eyes Test could be used by clinicians to help diagnose autism in adults; a person who scores low on the test, showing difficulty attributing mental states, could be referred for a full assessment and support.

[2]

7 Jamie has learned about the study by Milgram (obedience). He believes that the study is unethical.

(a) Outline what is meant by the ethical guideline of 'informed consent'.

Informed consent means participants are given enough information about the aims and procedure of a study before it begins, so they can decide whether or not they want to take part.

..... [2]

(b) Outline why Jamie is correct that this study is unethical, using evidence in your answer.

The participants were deceived about the procedure. They were told the study was about the effect of punishment on learning and that the roles were drawn at random, when the draw was rigged and the learner was a confederate who received no real shocks, so they could not give informed consent. They were also psychologically harmed, as many showed signs of severe stress such as sweating, trembling and nervous laughter, and three had seizures. The right to withdraw was not respected, because when they wanted to stop they were given prods such as "You have no other choice, you must go on". ..... [4]

8 **(a)** Outline the debate about individual and situational explanations in psychology, using an example from the study by Dement and Kleitman (sleep and dreams).

The individual explanation says that behaviour is caused by factors within the person, such as their personality or biology. For example, in Dement and Kleitman's study the participants differed in how accurately they could estimate the length of their dreams, which may be due to individual differences. The situational explanation says that behaviour is caused by the environment. For example, sleeping in a laboratory, wired to an EEG and woken by a loud doorbell, may have affected participants' sleep and dreams. The debate is about which is more important.

..... [4]

(b) Explain what psychologists have learned about sleep and dreams using **two** results from the study by Dement and Kleitman. Do **not** refer to the debate about the individual and situational explanations in your answer.

First, people dream much more in REM sleep than in NREM sleep. When participants were woken during REM sleep they recalled a dream on about 80% of awakenings, compared with only about 7% of awakenings from NREM sleep. This shows that REM sleep is the stage strongly linked to dreaming, so physiological measures such as EEG and rapid eye movements can be used as an objective indicator of when a person is dreaming, rather than relying only on self-reports.

Second, the direction of eye movements in REM sleep is related to the content of the dream, so it is not random. For example, a participant with mainly vertical eye movements reported dreaming about climbing up a series of ladders and looking up and down, while one with horizontal movements dreamed about watching two people throwing tomatoes at each other. This suggests that during REM sleep the dreamer's eyes move as if they were watching the events in the dream, so dreams may be experienced visually and in something close to real time.

..... [8]

9 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 the use of quantitative data.

One strength is the use of quantitative data. Two observers behind a one-way mirror recorded the children's behaviour every 5 seconds over a 20 minute period, counting acts in categories such as imitative physical aggression, imitative verbal aggression and mallet aggression. This made it easy to compare conditions objectively, e.g. boys who saw an aggressive male model showed a mean of 25.8 imitative physical acts compared with 7.2 for girls. Because two observers were used, inter-rater reliability could be checked, so the data was reliable.

A second strength is the high level of control. The procedure was standardised; every model performed the same aggressive acts towards the Bobo doll for about 10 minutes, all children were mildly frustrated in the same way and then observed with the same toys. The children were also matched in groups on their pre-existing aggression. This means the study can be replicated, and differences can be linked to the model's behaviour and sex, increasing validity.

However, a weakness of the quantitative data is that it shows how often children were aggressive but not why. A count of acts cannot tell us whether a child hit the doll because they were copying, because they thought it was a game, or because the Bobo doll is designed to be hit. Qualitative data, such as asking the children about their behaviour, would give more insight.

A second weakness is ethics and ecological validity. The children were deliberately frustrated and exposed to adult aggression, which may have caused distress or made them more aggressive afterwards, and they could not give informed consent. The situation was also artificial, with a stranger model and a doll, so it may not reflect how children learn aggression in real life.

Overall, the quantitative data and controls make the study reliable and give strong evidence that aggression can be learned by observation, but the artificial setting and ethical issues mean it should be generalised to real-life aggression with care.

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PSYCHOLOGY **9990/13**

Paper 1 Approaches, Issues and Debates **October/November 2021**

1 hour 30 minutes

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Answer **all** questions.

1 From the study by Andrade (doodling):

(a) State the number of participants used in this study.

40 participants. [1]

(b) Identify **two** features of the mock telephone message that was played to the participants.

1 *It was spoken in a monotone (boring) voice and lasted 2.5 minutes.*

2 *It contained eight names of people who were coming to a party.* [2]

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

Doodling aids concentration; people who doodle while listening to boring information remember more because doodling stops them daydreaming and keeps their attention on the task. [2]

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2 From the study by Yamamoto et al. (chimpanzee helping):

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

The study investigated altruism (targeted helping) in chimpanzees; helping another individual with no benefit to oneself. For example, one chimpanzee passed a straw or stick to its partner so the partner could get juice, even though the helper got no juice. It also looked at empathy, understanding the needs of another, as in whether chimpanzees offered the right tool more when they could see their partner's situation.

..... [3]

(b) Outline **one** strength of this study in relation to validity.

There were many controls, such as using the same seven objects in every trial, so the researchers could be more confident that it was the condition (whether the chimp could see its partner) that affected the helping behaviour, not extraneous variables.

..... [2]

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3 From the study by Milgram (obedience):

(a) Outline the sampling technique used in this study.

Volunteer (self-selected) sampling: participants chose to take part by responding to a newspaper advertisement and direct mail asking for men to take part in a study of memory at Yale, and were paid $4.50.

..... [2]

(b) State **two** characteristics of the victim (learner) used in this study.

1 *He was a 47-year-old man.*

2 *He was an accountant.* ..... [2]

(c) When the participant (teacher) pressed a switch on the shock generator, there were several changes.

Describe **two** changes on the shock generator after the participant pressed a switch, other than a bright red light illuminating.

1 *An electric buzzing sound was heard.*

.....

2 *The dial on the voltage meter swung to the right.*

..... [2]

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4 From the study by Canli et al. (brain scans and emotions):

(a) Describe the procedure of the study when the participants were having their brain scans.

Each participant lay in the fMRI scanner and viewed 96 scenes, which had normative ratings for arousal and valence, via a mirror. The scenes were shown in a random order and each was presented for 2.88 seconds. Participants were told to view each picture the entire time it was on the screen. Between scenes a fixation cross appeared for an interstimulus interval of 12.96 seconds. During this time they rated how emotionally intense they had found the scene on a 4 point scale from 0 (not emotionally intense) to 3 (extremely emotionally intense) by pressing a button with their right hand.

..... [5]

(b) Identify **one** methodological weakness of this study.

It lacks generalisability: only 12 right-handed women were used.

..... [1]

5 In the study by Baron-Cohen et al. (eyes test):

(a) Group 3 included males and females.

Identify **two** other characteristics of Group 3.

1 *They were undergraduate students at Cambridge.*

2 *Mostly science students, assumed to have high IQ.* [2]

(b) Each participant's attribution of mental state was tested by their selection of a word to describe the pair of eyes in a photograph.

Explain **one** reason why this test may **not** accurately measure attribution of mental state.

The photos showed static eyes only. In real life we attribute mental states from moving eyes and whole facial expressions, body language and context, so choosing a word for a still photo may not reflect how well a person reads mental states in everyday life. [2]

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6 The study by Schachter and Singer is based on the two-factor theory of emotion.

(a) Describe what is meant by the two-factor theory of emotion.

The two-factor theory says that emotion is made up of two factors. The first factor is physiological arousal, such as a raised heart rate. The second factor is cognition: the person interprets the situation to explain and label that arousal. So when someone feels aroused and has no immediate explanation for it, they look to cues in the environment, such as how other people are behaving, to work out what they are feeling. The emotion experienced is therefore a combination of physiological arousal and the cognitive label given to it.

[4]

(b) Outline how **one** result from this study supports the two-factor theory of emotion.

The epinephrine ignorant and misinformed groups were more euphoric with the euphoric stooge than the epinephrine informed group. This supports the theory because, with no explanation for their arousal, they used the stooge's mood as a cue to label it.

[2]

7 Lizzie has learned about the study by Laney et al. (false memory). She believes that the study is unethical.

(a) Outline what is meant by the ethical guideline of 'informed consent'.

Informed consent means participants are given enough information about the aims and procedure of a study before it begins, so they can decide whether or not they want to take part.

[2]

(b) Outline why Lizzie is correct that the study is unethical, using evidence in your answer.

The participants were deceived, so they could not give informed consent. They were told the study was about the relationship between personality and food preferences, when it was actually trying to implant a false memory about loving asparagus. On their return they were also given false feedback, a "computer-generated profile" of their childhood food experiences, which they were led to believe was accurate. This could cause psychological harm, as participants may feel embarrassed or upset at being tricked, and their real attitudes to a food may have been changed, even though they were debriefed at the end. [4]

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8 **(a)** Outline the nature versus nurture debate in psychology, using an example other than the study by Bandura et al. (aggression).

Nature means behaviour is caused by innate, biological factors that we are born with, such as genes, hormones or brain structure. For example, in Canli et al. greater activation of the left amygdala was linked to better memory for emotional scenes, a biological explanation. Nurture means behaviour is learned from experience and the environment after birth. For example, in Pepperberg's study Alex learned the concepts of same and different through observing a model/rival being rewarded. The debate is about how much each contributes to behaviour.

..... [4]

(b) Explain what psychologists have learned about aggression using **two** results from the study by Bandura et al.

First, children learn aggression by observing and imitating a model. Children who watched the aggressive model were significantly more likely to imitate the model's exact physical acts (such as hitting Bobo with the mallet and sitting on it) and verbal remarks (such as "Pow" and "Sock him") than children in the nonaggressive model and control groups, where such imitative acts were almost absent. This shows that aggression can be learned through nurture, by social learning, even without the model being rewarded and when the model is no longer present.

Second, children are more likely to imitate aggression from a same-sex model. Boys imitated more verbal aggression from the male model than the female model (mean 12.7 compared with 4.3), and girls imitated more verbal aggression from the female model than the male model (13.7 compared with 2.0). This shows that models who are similar to the observer are more powerful influences, perhaps because children identify with them and see their behaviour as appropriate for their own sex. It suggests that aggressive same-sex role models, such as a parent, may have a strong effect.

..... [8]

9 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 the use of qualitative data.

One strength is the use of qualitative data. Observers recorded comments made by passengers, such as "It's for men to help him", "I wish I could help him, I'm not strong enough" and "You feel so bad when you don't know what to do". These give rich insight into why people did or did not help, such as gender role beliefs and feelings of distress, which the numbers alone could not show. This supports the arousal: cost-reward model, as passengers seemed to weigh up the costs of helping.

A second strength is high ecological validity. The study was a field experiment on a real New York subway train, the 8th Avenue express, which travelled for 7.5 minutes without stopping. The passengers did not know they were in a study, so their behaviour was natural and there were no demand characteristics, meaning the results reflect how people really help in everyday life.

However, a weakness of the qualitative data is that it was limited and possibly unreliable. Only a few comments were recorded, overheard by observers in a noisy carriage, and the observers could not ask follow-up questions, so the comments may have been misheard or may not represent the views of all 4450 passengers. Interpreting why people said them is also subjective.

A second weakness is ethics. Passengers were deceived into thinking the victim was genuinely ill or drunk, they did not give informed consent and they were not debriefed, so some may have been distressed or felt guilty for not helping. In a field setting it is also hard to control variables, such as how many people were in the carriage, and some passengers may have taken part more than once.

Overall, the natural setting and qualitative comments give a valid and detailed picture of helping behaviour, but the ethical problems and limited control mean the study could not easily be repeated today and its findings should be interpreted with care.

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