Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: *StemUp Model Solution*

CENTRE NUMBER | | | | | |

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1162735945

PSYCHOLOGY **9990/11**

Paper 1 Approaches, Issues and Debates **May/June 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.
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INFORMATION

- The total mark for this paper is 60.
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Section A

Answer **all** questions.

1 In the study by Pozzulo et al. (line-ups), cartoon character targets were used.

(a) Identify **one** of the cartoon characters used.

Dora the Explorer. [1]

(b) Identify **two** features of the participants in the 'young children' group.

1 *There were 59 children in the young children group.*

2 *They were aged 4 to 7 years (average age about 5 years).* [2]

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

Children make more errors than adults when the target is absent from a line-up because of social demands (they feel they should pick someone), rather than because of faulty cognitive processing, as they could correctly identify familiar cartoon targets. [2]

2 From the study by Milgram (obedience):

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

To investigate how obedient ordinary people would be to an authority figure (the experimenter) who ordered them to physically harm another person by giving him increasingly severe electric shocks. [2]

(b) Outline **one** way in which the participants were deceived.

They were led to believe that they were giving real electric shocks to the learner each time he got a word pair wrong, when in fact the shock generator gave no shocks and the learner (Mr Wallace) was a confederate who was acting. [2]

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

(a) Outline **one** result in relation to the duration of play by the monkeys with the 'wheeled' toys.

On average, male monkeys played with the wheeled toys for longer than female monkeys did, and males spent longer with wheeled toys than with plush toys, whereas females played with both types of toy for similar lengths of time.

[2]

(b) Outline **one** result in relation to the rank of female monkeys and the duration of play.

There was a positive correlation between the rank of female monkeys and the total duration of play with plush toys (higher-ranking females played with plush toys for longer), but there was no significant correlation between rank and duration of play with wheeled toys. [2]

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

It lacks generalisability. The troop of rhesus monkeys was captive, living in a large enclosure at a field station, so their play may not represent how wild rhesus monkeys behave; wild monkeys would never come across wheeled or plush toys.

[2]

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

(a) Outline how 'mallet aggression' was defined in this study.

Striking (hitting) an object with the mallet, where the object hit was anything other than the Bobo doll.

[2]

(b) Outline **one** feature of social learning theory, using an example from this study.

Imitation (reproduction): this is when a person copies the behaviour of a model that they have observed, so new behaviour is learned without being directly reinforced. In Bandura et al., children who had watched the adult model hit the Bobo doll with the mallet later imitated hitting the doll with the mallet themselves, and some copied the model's words such as "Pow".

[3]

5 Suggest at least one application to everyday life of the study by Andrade (doodling). Do **not** refer to more than three applications in your answer. Your suggestion(s) **must** be ethical.

Teachers could use the study to help students concentrate in long, boring lessons where they have to listen, such as lectures. They could give each student a sheet of simple shapes to shade in while listening, as Andrade did, so doodling uses a little attention, stops them daydreaming and keeps them alert, so they remember more of what was said. Employers could also let staff doodle on a notepad during long meetings or phone calls where they must listen carefully, so they remember more of the details, such as the names of people and places mentioned.

[5]

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6 In the study by Piliavin et al. (subway Samaritans), on each trial a team of four students boarded the train.

Describe the procedure from this point until the victim collapsed.

The team was always made up of two males and two females. They entered the train using different doors, and the car used for the trial was varied. The two female observers sat in the adjacent area and covertly recorded data, e.g. the race, sex and location of every passenger and how long it took for help to arrive. The male victim stood next to the pole in the centre of the critical area. The male model stood in either the critical area or the adjacent area, depending on the condition. About 70 seconds after the train had left the station, the victim staggered forward and collapsed.

[5]

7 Suggest **two** problems that could arise if children were used as participants in the study by Baron-Cohen et al. (eyes test).

1 *Children have limited vocabulary, so even with a glossary they would probably not understand some of the mental state words, e.g. "despondent", so a low score would show poor vocabulary rather than poor theory of mind.*

2 *Psychological harm; children with AS/HFA may find it stressful to be repeatedly unable to read emotions from the eyes, as the 36 photographs may feel like a test they are failing.*

[4]

8 Two friends, Jack and Daphne, are discussing the ethics of the study by Perry et al. (personal space). Jack says the study is ethical, but Daphne says the study is **not** ethical.

Explain why you think **either** Jack **or** Daphne is correct, using evidence from this study in your answer.

The friend who I think is correct is *Jack*

because: *the study followed the ethical guideline of informed consent: written consent was taken from all participants. The study was also approved by the ethics committee of the university and medical centre. The procedure caused little distress, because the figure that approached them was only a computer simulation, not a real person invading their space, and they could press the spacebar to stop it approaching any further as soon as they felt uncomfortable. The use of a placebo nasal spray was only a mild deception needed to make the oxytocin condition valid.*

[4]

Section B

Answer **all** questions.

9 **(a)** Outline **two** dreams reported by participants in the study by Dement and Kleitman (sleep and dreams).

1 *One participant reported watching two people throwing tomatoes at each other. Their eye movements had been mainly horizontal, as if looking from one person to the other.*

2 *One participant dreamed of standing at the bottom of a tall cliff operating a hoist, looking up at climbers and down at the machine; their eye movements were vertical.*

[4]

(b) Explain **two** differences between the study by Dement and Kleitman (sleep and dreams) and **one** other study from the biological approach. One of the differences **must** be about the sample of participants.

Difference 1 *Hölzel et al. had a larger sample than Dement and Kleitman, with 16 people in the mindfulness (MBSR) group, mostly females (10 females, 6 males). Dement and Kleitman studied only 9 adults, 7 males and 2 females, and only 5 of them intensively. This means Dement and Kleitman's findings about REM sleep and dreaming are less generalisable, especially to women, because their sample was smaller and mostly male, while Hölzel's sample was mostly female.*

Difference 2 *They measured the brain using different techniques. Hölzel et al. used MRI scans before and after an 8-week mindfulness course to see changes in grey matter concentration in brain areas such as the hippocampus. Dement and Kleitman used an EEG to record electrical brain wave activity during sleep (with electrodes near the eyes to record eye movements). So Hölzel measured brain structure, whereas Dement and Kleitman measured brain function in real time.*

[8]

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10 Evaluate the study by Fagen et al. (elephant learning) in terms of **two** strengths and **two** weaknesses. At least one of your evaluation points **must** be about quantitative data.

One strength is that Fagen et al. collected quantitative data. They recorded the number of training sessions each of the five elephants needed to learn each part of the trunk wash, such as "trunk up", and whether each elephant reached the criterion for the full task. This makes it easy to compare the performance of the elephants and see trends, e.g. which components took longest to learn, and the data are objective, so different researchers would record the same thing.

A second strength is that the procedure was standardised. Each behaviour was trained in the same way using the same techniques: a lure and shaping, a whistle as a secondary reinforcer followed by banana pieces as the primary reinforcer, and a verbal cue for each behaviour. Because the procedure was the same for each elephant, the study could be replicated to test the reliability of the findings, and differences between elephants are unlikely to be due to differences in how they were trained.

However, one weakness is the sample. There were only five elephants, all juveniles, at one location in Nepal. Young elephants may learn faster than adult elephants, and elephants that have been trained in other ways (e.g. using punishment) might respond differently to positive reinforcement. So the findings are hard to generalise to all elephants, including adult ones.

A second weakness is that the quantitative data do not explain why elephants differed. Counting sessions tells us how long each elephant took but not, for example, how each elephant behaved when it failed, or how stressed it was, so there is no qualitative detail to explain why some elephants needed many more sessions than others. Also, the trainers judged whether a behaviour was performed correctly, which could be subjective.

Overall, the study is a reliable demonstration that positive reinforcement can train elephants for medical procedures without punishment, which is also more ethical, but its small sample limits how far the findings 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 **9990/12**

Paper 1 Approaches, Issues and Debates **May/June 2024**

1 hour 30 minutes

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Section A

Answer **all** questions.

1 The first stage of the study by Bandura et al. (aggression) was when the children were rated on four scales by the experimenter and a nursery school teacher. One of these scales was 'aggressive inhibition'.

(a) Identify **one** of the other scales used in this first stage.

Physical aggression. [1]

(b) Outline how the children were assigned to one of the conditions in this study.

The children's ratings on the four scales were added together to give a total aggression score. Children were then matched in threes (triplets) on these scores, and one child from each triplet was assigned at random to each of the conditions.

[2]

(c) Identify **two** features of the final experimental room used in the 'test for delayed imitation'.

1 *A one-way mirror through which the children were observed.*

2 *A variety of toys, e.g. Bobo doll, mallet and tea set, always in the same order.*

[2]

2 From the study by Andrade (doodling):

(a) Outline the experimental design used in this study.

Independent measures design: each participant only took part in one condition (level of the IV), either the doodling group, who shaded in shapes while listening to the telephone message, or the control group, who did not doodle.

[2]

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

Doodling aids concentration on a boring task, because it reduces daydreaming and keeps people alert, so their attention to the main task is improved and they remember more of the information.

[2]

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

(a) Outline **one** result in relation to REM sleep and dream recall.

More dreams were recalled when participants were woken during REM sleep than during NREM sleep: dreams were recalled on 152 of the 191 REM awakenings, but on only 11 of the 160 NREM awakenings.

..... [2]

(b) Outline **one** result in relation to dream duration estimates when participants were woken up 15 minutes after the onset of REM sleep.

When woken 15 minutes into REM sleep, participants correctly estimated the length of their dream 47 times and were wrong 13 times, so they were less accurate than when they were woken after 5 minutes.

..... [2]

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

It lacks ecological validity. Participants slept in a laboratory with electrodes attached to their scalp and near their eyes and were woken by a loud doorbell, so their sleep and dreams may not be the same as when they sleep normally at home.

..... [2]

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4 From the study by Milgram (obedience):

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

Obedience is when a person follows a direct order (does what they are told) given by someone they see as an authority figure, e.g. the experimenter in a grey lab coat.

..... [2]

(b) Outline how **one** ethical guideline was broken in this study.

The right to withdraw was broken. This guideline means participants should be able to leave a study at any time without being pressured or facing consequences. In Milgram's study, when participants said they wanted to stop, the experimenter used verbal prods such as "The experiment requires that you continue" and "You have no other choice, you must go on", which made it very hard for them to leave.

..... [3]

5 Suggest at least one application to everyday life of the study by Hölzel et al. (mindfulness and brain scans). Do **not** refer to more than three applications in your answer. Your suggestion(s) **must** be ethical.

Employers could reduce stress in their employees by offering an 8-week mindfulness course like the MBSR programme. Staff would attend a weekly group session in work time, learn meditation techniques such as the body scan and mindful yoga, and be given audio recordings so they can practise for about 30 minutes each day at home. This could increase grey matter in areas linked to emotional regulation, so staff cope better with stress.

Schools could also use this: counsellors could run short mindfulness sessions for students before their examinations, so they feel calmer and less anxious.

..... [5]

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

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

Each participant watched four short videos on a laptop, in a random order. After each video, a line-up was shown on the screen with all the pictures presented simultaneously. In the target-absent condition the target was replaced by a foil who had similar features to the target (e.g. the same hair colour), so none of the four photographs had been in the video. A silhouette was also shown, which participants could choose if they thought the target was not there. The position of the replacement foil in the line-up was randomised and counterbalanced across line-ups.

[5]

7 Suggest **two** problems that could arise if children were used as participants in the study by Perry et al. (personal space).

1 *Children may not understand the task. They might treat the approaching figure on the computer as a game, pressing the spacebar randomly, so their comfortable distance, not personal space, would not be validly measured.*

2 *Children have short attention spans, so they may get bored and lose concentration during the large number of trials of approaching figures, giving inaccurate distances or dropping out.*

[4]

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8 Two friends, Sabtu and Joyah, are discussing the validity of the study by Piliavin et al. (subway Samaritans). Sabtu says the study has validity, but Joyah says the study does **not** have validity.

Explain why you think **either** Sabtu **or** Joyah is correct, using evidence from this study in your answer.

The friend who I think is correct is *Sabtu*.....

because: *the study has ecological validity because it took place on a real New York subway train with real passengers who did not know they were being studied, so their helping behaviour was natural. There were also controls that increase validity; the victims were all dressed the same way (Eisenhower jacket, old slacks and no tie), and the victim always collapsed after about 70 seconds in the same place. This means variables such as appearance were less likely to affect helping, so differences in helping were more likely to be caused by the type of victim (ill or drunk).*

..... [4]

Section B

Answer **all** questions.

9 **(a)** Describe the psychology being investigated in the study by Fagen et al. (elephant learning).

The study investigated operant conditioning, which is learning through the consequences of behaviour. Behaviour that is rewarded (positive reinforcement) is more likely to be repeated, whereas behaviour that is punished is less likely to be repeated. A primary reinforcer meets a biological need; in Fagen et al. the elephants were given pieces of banana when they performed a task correctly. A secondary reinforcer, such as the whistle, is consistently followed by the primary reinforcer so it becomes rewarding itself. Shaping rewards closer and closer approximations to the target behaviour. ..... [4]

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(b) Explain **one** similarity and **one** difference between the study by Fagen et al. (elephant learning) and **one** other study from the learning approach.

Similarity *Both Fagen et al. and Bandura et al. used observation to collect quantitative data on operationalised behaviours. In Fagen, the researchers recorded whether each elephant correctly performed behaviours such as "trunk up" (lifting the trunk into the air) and counted the sessions needed. In Bandura, observers behind a one-way mirror recorded imitative behaviours, such as aggressive gun play (aiming the gun and firing imaginary shots). Operationalising the behaviours makes recording more objective and valid.*

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

[8]

10 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 ethics.

One strength is that the procedure was standardised. Every participant saw the same 36 black and white photographs of the eye region of faces, in the same way, and chose one of four mental state words for each, with a glossary available to check the meaning of words. Because the procedure was the same for all groups, the test could be repeated to check reliability, and differences between the AS/HFA group and the other groups are more likely to be due to their ability to read minds than to differences in the procedure.

A second strength is the quantitative data. Each participant got a score out of 36 on the Eyes Test, and an AQ score. This made it easy to compare the groups objectively and statistically, e.g. to show that the AS/HFA group scored significantly lower than the general population, and to correlate the Eyes Test scores with AQ scores.

One weakness concerns ethics. The study risked psychological harm, especially for participants with AS/HFA: the researchers predicted they would find it difficult to identify emotions from the eyes, so repeatedly struggling with 36 items, and with unfamiliar words even with a glossary, could have made them feel stressed or upset about their difficulties. On the other hand, participants did give informed consent and their data were kept confidential, so the study followed some guidelines.

A second weakness is the sample. The AS/HFA group had only 15 participants and they were all male, so the findings may not represent females with AS/HFA, who may perform differently on the test. Also the test lacks mundane realism, because in real life we read emotions from the whole face, which is moving, along with voice and context, not from still photographs of eyes.

Overall, the study gives reliable, comparable evidence about theory of mind, but the harm to participants and the small all-male sample limit its conclusions.

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Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME: *StemUp Model Solution*

CENTRE NUMBER | | | | | |

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PSYCHOLOGY **9990/13**

Paper 1 Approaches, Issues and Debates **May/June 2024**

1 hour 30 minutes

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Section A

Answer **all** questions.

1 From the study by Perry et al. (personal space):

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

54 [1]

(b) Outline what is meant by the term 'interpersonal distance (personal space)'.

It is an invisible "bubble" or boundary around a person that others should not enter. We choose who can enter it, its size depends on the situation, and it is used to regulate our social interactions with other people.

[2]

(c) Outline how a participant was allocated to the 'high empathy' group in this study.

The participant completed the Interpersonal Reactivity Index (IRI). If their score was at least half a standard deviation above the mean (a score of 90 or above), they were allocated to the high empathy group.

[2]

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

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

To investigate whether children would imitate the aggressive behaviour of an adult model in a new setting in which the model was no longer present.

[2]

(b) Outline how the response measure of 'aggressive gun play' was defined in this study.

Shooting darts, or aiming the gun at objects in the room and firing imaginary shots.

[2]

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

(a) Outline **one** result in relation to the race of helper when the victim was 'drunk'.

When the victim was drunk, he was more likely to be helped by someone of the same race as himself, and this same-race helping was greater when the black victim was drunk than when the black victim was ill.

..... [2]

(b) Outline **one** result in relation to the number of males in the critical area and the time taken for the victim to receive help.

The more males there were in the critical area, the shorter the time taken for the victim to receive help, so help arrived faster when there were more potential male helpers nearby.

..... [2]

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

It broke ethical guidelines. The passengers were deceived into thinking that a real person had collapsed and needed help when it was staged, which could have been distressing, and they could not give consent or be debriefed.

..... [2]

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4 From the study by Andrade (doodling):

(a) Describe what is meant by the term 'attention'.

Attention is our ability to focus (concentrate) our cognitive resources on one specific stimulus while excluding other stimuli. It can also be divided between two or more tasks at once. For example, participants in Andrade's study had to pay attention to a boring telephone message to listen for the names of people coming to a party.

[3]

(b) The sample consisted of 40 participants from a participant panel.

Identify **two** other features of the sample.

1 *They were aged 18 to 55 years.*

2 *Most were female: 35 females and 5 males.*

[2]

5 Suggest at least one application to everyday life of the study by Hassett et al. (monkey toy preferences). Do **not** refer to more than three applications in your answer. Your suggestion(s) **must** be ethical.

Zoos could use the findings to improve the welfare of captive monkeys by providing enrichment. Keepers could put wheeled toys (e.g. toy cars) into enclosures for the young males and soft plush toys for the females, so that each monkey has objects it is likely to play with for longer, which reduces boredom.

Toy manufacturers could also use the findings when designing and advertising toys. As both male monkeys and boys spent longer playing with wheeled toys, companies could include wheeled toys in their advertising aimed at boys and test new toys with groups of children before launching them.

[5]

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6 From the study by Fagen et al. (elephant learning):

Describe how the elephants were trained to perform the 'trunk up' behavioural task.

The elephants were trained using a lure and shaping. A piece of banana (the lure and primary reinforcer) was held a few inches above the elephant's forehead, so that the elephant could only reach it by lifting its trunk up. For larger elephants the lure was held at the end of the trainer's outstretched arm. The trunk position was shaped: the banana was held higher and higher until the elephant raised its trunk fully into the air. Each time the elephant raised its trunk correctly the trainer blew a whistle (secondary reinforcer) and then gave the banana as a reward.

..... [5]

7 Suggest **two** problems that could arise if children were used as participants in the study by Hölzel et al. (mindfulness and brain scans).

1 *Children find it difficult to keep still for a long time, but they must stay still in an MRI scanner. So their scans could be blurred and grey matter concentration could not be validly measured.*

2 *Children's brains are still developing, so any increase in grey matter after the 8-week course could be due to normal growth, not the mindfulness, so the effect could not be known.*

[4]

8 Two friends, Luis and Ava, are discussing the application to everyday life of the study by Milgram (obedience). Luis says the study does have application to everyday life, but Ava says the study does **not** have application to everyday life.

Explain why you think **either** Luis **or** Ava is correct, using evidence from this study in your answer.

The friend who I think is correct is *Luis*

because: *one aim of the study was to test the "Germans are different" hypothesis, so it can help us understand why ordinary people did terrible things in the Holocaust. It shows that people obey someone they see as a legitimate authority, as the experimenter wore a grey lab coat and used prods such as "Please continue". This explains how people in uniform can get others to do things they would never normally do, as 65% of participants went to the maximum 450 volts, which could have been a lethal shock to a stranger.*

[4]

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Section B

Answer **all** questions.

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

(a) Describe the sample used in **either** Group 1 **or** Group 2.

Group 1 was 15 adult males who had been diagnosed with Asperger syndrome or high-functioning autism (AS/HFA). Their mean age was about 29.6 years. They were a volunteer sample, recruited through an advertisement in the National Autistic Society magazine. They all had IQs in the normal range, and were of the same socioeconomic class and educational level as Group 2.

[4]

(b) Explain **two** similarities between the study by Baron-Cohen et al. (eyes test) and **one** other study from the cognitive approach. Do **not** refer to the sample in your answer.

Similarity 1 *Both Baron-Cohen et al. and Andrade were experiments with an IV and a DV. In Andrade the IV was whether participants doodled (shaded shapes) or not while listening to a telephone message. In Baron-Cohen et al. the IV was natural: whether the participant had been diagnosed with AS/HFA or not. In both, the researchers measured the effect of the IV on the DV, so both were trying to establish cause and effect.*

Similarity 2 *Both collected quantitative data. Andrade measured the number of names and places correctly recalled (the doodling group recalled 29% more), and Baron-Cohen et al. gave each participant a score out of 36 on the Eyes Test. This made it easy to compare the groups objectively and test whether the differences were significant.*

[8]

10 Evaluate the study by Saavedra and Silverman (button phobia) in terms of **two** strengths and **two** weaknesses. At least one of your evaluation points **must** be about quantitative data.

One strength is that the study collected quantitative data. The boy rated his distress on a numerical rating scale for different button stimuli, from the least to the most distressing, at several points in the therapy and at the follow-up. This made it easy to compare his distress over time and between the two types of therapy objectively, e.g. to see that the exposure-based therapy with reinforcement reduced his distress less than the later disgust imagery therapy did. So the researchers could draw more valid conclusions about which part of the treatment worked.

A second strength is that it was a detailed case study with a follow-up. The boy was studied in depth, including the history of his phobia (it began at school when he was 5, in an incident with a bowl of buttons), and he was followed up after the end of therapy. This showed that the reduction in his distress lasted over time, so the therapy had a long-term effect rather than a temporary one.

However, one weakness is the sample. It was only one boy with a button phobia, so the findings are hard to generalise. Another person with a different phobia, a different childhood experience, or a female, may not respond to the disgust-based therapy in the same way.

A second weakness is that the ratings were self-reports. The boy was a child and may have given lower distress ratings to please the therapist, i.e. social desirability, so the quantitative data may not be valid. Also, the therapists collected the data themselves, so there may have been researcher bias when they interpreted his progress.

Overall, the study gives useful, measurable evidence that disgust-focused therapy can treat a button phobia, but the single participant and self-report data limit its conclusions.

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