GCE A LEVEL

A290U30-1

S24-A290U30-1

MONDAY, 3 JUNE 2024 – AFTERNOON

PSYCHOLOGY – A level component 3

Psychology: Implications In The Real World

2 hours 15 minutes

ADDITIONAL MATERIALS

A WJEC pink 16-page answer booklet.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

Answer **three** questions in Section A and **one** question in Section B.

Write your answers in the separate answer booklet provided following the instructions on the front of the answer booklet.

Use both sides of the paper. Write only within the white areas of the booklet.

Write the question number in the two boxes in the left-hand margin at the start of each answer, for example **0 1** .

Leave at least two line spaces between each answer.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

You are reminded of the need for good English and orderly, clear presentation in your answers.

Assessment will take into account the quality of written communication used in your answers.

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SECTION A: Applications

Answer **three** questions in full.

0 1 **Addictive behaviours**

a) **i)** Briefly evaluate the ethical and social implications of agonist and antagonist substitution as a method of modifying addictive behaviours. [5]

ii) Briefly evaluate the ethical and social implications of aversion therapy as a method of modifying addictive behaviours. [5]

b) Jenna's family are worried about her vaping and are concerned that she has prioritised this over other parts of her life. Jenna's moods have recently varied, and she experiences 'highs' when vaping. Jenna has found she must vape more frequently than she used to in order to satisfy her needs. Since vaping more frequently, Jenna has become more irritable and has problems sleeping and she is now worried about this affecting her performance in her new job.

Describe how the characteristics of addictive behaviours can help to explain Jenna's behaviour. [15]

0 2 **Autistic spectrum behaviours**

a) **i)** Describe biological explanations of autistic spectrum behaviours. [10]

ii) Briefly explain how biological explanations could be applied to modifying autistic spectrum behaviours. [5]

b) Evaluate the effectiveness and ethical implications of Relationship Development Intervention as a method of modifying autistic spectrum behaviours. [10]

0 3 **Bullying behaviours**

a) Evaluate **one** explanation of bullying behaviours. [10]

b) Gareth is a headteacher in a secondary school. A lot of his time is spent dealing with bullying behaviours, such as rude gestures and spreading rumours or lies. He believes that bullying is a school-wide problem and should not just focus on the bully/victim relationship. Gareth wants to educate the pupils, their parents/caregivers, and staff about the risk factors of bullying. He is hoping that he can create an environment that is safe and friendly for all.

With reference to the above scenario, describe how the Olweus Bullying Prevention Programme could be used to modify bullying behaviours. [15]

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0 4 **Criminal behaviours**

a) Describe social psychological explanations of criminal behaviours. [10]

b) Outline how **one or more** individual differences explanations could be applied to modifying criminal behaviours. [5]

c) Evaluate **one** biological explanation of criminal behaviours. [10]

0 5 **Schizophrenia**

a) Describe individual differences explanations of schizophrenia. [10]

b) Evaluate the effectiveness of antipsychotic drugs and cognitive behavioral therapy as methods of modifying schizophrenia. [10]

c) Briefly explain how biological explanations could be applied to modifying schizophrenia. [5]

0 6 **Stress**

a) Describe **one** individual differences explanation of stress. [10]

b) Meera works as a trainee solicitor and feels under pressure to perform well in her assessments. In her spare time, Meera has taken part in swimming competitions and singing in concerts for several years. However, recently these activities have left Meera with unpleasant symptoms such as sweating, heart palpitations, anxiety and difficulty in sleeping. This is affecting her confidence.

With reference to the above scenario, evaluate the effectiveness of beta blockers and stress inoculation training as methods of modifying Meera's stress. [15]

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SECTION B: Controversies

Answer **one** of the questions.

Either,

0 7 **Non-human animals**

'Non-human animals should be used as a therapeutic device and in any psychological research that benefits humans.'

To what extent do you agree with the statement? Justify your answer using psychological knowledge. [25]

Or,

0 8 **Cultural Bias**

'Ethnocentrism is a problem in psychology.'

Using your knowledge of psychology, discuss the extent to which this statement is true. [25]

END OF PAPER

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Surname	StemUp Model Solution
Answer booklet	Write the question number in the left-hand margin at the start of each answer.

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01(a)(i) Ethically, methadone (an agonist that binds to the same opioid receptors as heroin) carries a risk of harm. It has side effects, can interact dangerously with alcohol or antidepressants and can cause respiratory depression; the ONS reported 429 UK deaths from methadone overdose in 2013. Many users stay on methadone for years without support, so it may simply replace one addiction with another and they never reach abstinence. Naltrexone (an antagonist that blocks opioid receptors so the drug gives no 'high') raises the risk of overdose if the person relapses and takes more to override the block, and liver function must be monitored.

Socially, Gyngell (2011, Centre for Policy Studies) called methadone prescribing an 'expensive failure', costing society for the drug and for 320,000 problem drug users on benefits, so money might be better spent on abstinence-based rehabilitation. However, DrugScope argued this cost was overestimated and the National Audit Office judged treatment value for money, as users function better in society. The National Treatment Agency (2009) found methadone halved offending among addicts in treatment, and Boyd et al. (2012) found methadone clinics in Baltimore did not raise local crime. Overall the social benefits seem to outweigh the costs, but the ethical risks require careful supervision.

01(a)(ii) Ethically, aversion therapy risks harm because it works by deliberately making the person ill. Antabuse (disulfiram) causes nausea, vomiting, palpitations and headaches if any alcohol is consumed, even in mouthwash, and rapid smoking produces very unpleasant effects. Fully informed, valid consent is therefore

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essential. Because it is so unpleasant, many people stop taking Antabuse or drop out of studies, so true effectiveness is hard to judge and benefits may not justify the distress. A more ethical alternative is covert sensitisation, where the client only imagines feeling sick when they get the urge to drink; Kraft (2005) suggested this can be quick and effective for some people.

Socially, Devlin (2008) reported the NHS spent £2.25 million on drugs such as Antabuse, £1.17 million more than in 1998, a significant cost to taxpayers. However, Alcohol Concern argued it was beneficial to the NHS in the long term, because untreated alcohol abuse costs taxpayers about £21 billion a year through benefits, crime and NHS treatment of illness and accidents (about £3.5 billion a year), as well as relationship breakdown and homelessness. So the social benefits of treating addiction are likely to be greater than the costs, even if the ethics of causing distress remain a concern.

01(b)

Griffiths' (1996, 2005) components model proposes that all addictions, chemical or behavioural, share six core characteristics: salience, mood modification, tolerance, withdrawal symptoms, conflict and relapse. Vaping delivers nicotine, a chemical addiction, and Jenna's behaviour shows most of these characteristics.

Salience is when the addictive activity becomes the single most important activity in a person's life, dominating their thinking (preoccupation and cravings), feelings and behaviour. Even when not engaging in it, the person is thinking about the next time. Jenna's family are worried that she 'has prioritised this over other parts of her life', suggesting that vaping has become salient: it now takes precedence over family, friends and other interests, and she may organise her day around opportunities to vape.

Mood modification refers to the subjective experiences people report as a consequence of engaging in the behaviour. This may be an arousing 'buzz' or 'high', or the opposite, a tranquillising feeling of relaxation, numbness or escape, and it can change through the day: a smoker may use nicotine as a boost in

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the morning but to relax in the evening. People may use the behaviour to self-medicate to cope with problems. Jenna 'experiences highs when vaping' and her 'moods have recently varied'. Nicotine stimulates the release of dopamine in the brain's reward pathway, so vaping produces a pleasurable lift in mood that is reinforcing, which could explain her highs and why her mood fluctuates depending on whether she has recently vaped.

Tolerance is the process by which increasing amounts of the drug or activity are required to achieve the same mood-modifying effect as before. It is clearest in chemical addictions, as receptors become less sensitive to the drug, but Griffiths (1993) found evidence of tolerance in regular fruit machine gamblers using heart rate measures, showing it occurs in behavioural addictions too. Jenna 'must vape more frequently than she used to in order to satisfy her needs', which is a clear example of tolerance: her brain has adapted to nicotine, so the same amount no longer gives the same high.

Withdrawal symptoms are the unpleasant physical and psychological feelings that occur when the behaviour is stopped or suddenly reduced, such as irritability, moodiness, anxiety, headaches, nausea and insomnia. They motivate the person to engage in the behaviour again to relieve them (negative reinforcement). Jenna 'has become more irritable and has problems sleeping'. These are typical nicotine withdrawal symptoms that probably appear between vapes, or overnight when she cannot vape, which in turn drives her to vape even more often.

Conflict can be interpersonal, between the addict and those around them (family, friends, work), or intrapsychic, within the individual, who knows the behaviour is harmful and wants to stop but feels unable to. Interpersonally, Jenna's vaping is creating tension with her worried family and threatens her 'performance in her new job', as poor sleep and irritability may affect her concentration and relationships with colleagues. Her own worry about this shows intrapsychic conflict: she recognises the problem but continues to vape.

Relapse is the tendency to return to the behaviour after a period of abstinence, sometimes years later, and even to quickly revert to the most extreme patterns,

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which is very common with nicotine. If Jenna tries to quit because of her job, her strong cravings and withdrawal symptoms mean she is at high risk of relapse.

Therefore Jenna shows salience, mood modification, tolerance, withdrawal and conflict, and is vulnerable to relapse, which together suggest that her vaping meets the characteristics of an addiction rather than a habit.

05(a) Individual differences explanations focus on psychological factors, such as early experience, cognition and sex, that make some people more likely than others to develop schizophrenia.

The psychodynamic approach: Fromm-Reichmann (1948) proposed the concept of the schizophrenogenic mother. Based on her psychoanalytic work with patients, she argued that schizophrenia stems from early childhood experiences with a mother who is cold, rejecting and distant, but at the same time overprotective, dominant and controlling. This combination of overprotection and emotional distance means the child's need for security and love is never met, creating a family climate of tension and secrecy. The child grows up distrustful of others, which leads to paranoid delusions, and in Freudian terms may regress to an early, infantile stage of development (primary narcissism) before the ego was fully formed, so they lose contact with reality. Bateson et al.'s (1956) double bind theory extended this, suggesting the child receives contradictory messages (for example the mother says she loves them while her body language shows rejection) and cannot respond correctly, causing confusion and disorganised thinking.

The cognitive approach: thought disorder. Developed partly because psychodynamic ideas lacked scientific rigour, this explanation argues that the symptoms of schizophrenia result from faulty information processing. Frith (1992) proposed a deficit in metarepresentation, the ability to reflect on our own thoughts and the intentions of others (theory of mind). If a person cannot

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recognise their own thoughts as self-generated, they may experience them as voices (auditory hallucinations) or as thought insertion, and failing to understand others' intentions leads to paranoid delusions. Frith also proposed a deficit in central control, the ability to suppress automatic responses, causing derailment of thought and speech poverty. Hemsley (1993) suggested a breakdown in the pre-conscious filter linking stored knowledge to current sensory input, so the person is overwhelmed by irrelevant stimuli and attaches significance to them.

Sex differences: this view highlights consistent differences between males and females in schizophrenia (Goldstein, 1988; Leung and Chue, 2000). Men have an earlier age of onset (typically 18 to 25, compared with 25 to 35 for women), poorer premorbid functioning, more negative symptoms such as avolition and alogia, and a more severe, chronic course with more hospitalisation. Women tend to show more positive and affective symptoms and better social functioning and response to treatment. One suggestion is that oestrogen has a protective effect, which would explain why women show a second peak of onset around the menopause.

05(b)

Antipsychotic drugs: conventional antipsychotics such as chlorpromazine are dopamine antagonists that block D_2 receptors. Cole et al. (1964) found that 75% of patients given conventional antipsychotics were 'much improved' compared with 25% given a placebo, a 50% difference; none of the drug group got worse, whereas 48% of the placebo group did. This showed that schizophrenia could be treated with drugs, like a physical illness, allowing many patients to leave hospital. Ravanic et al. (2009) concluded that atypical antipsychotics such as clozapine are a better option, being effective for negative as well as positive symptoms with fewer side effects, although some patients still respond better to conventional drugs, which shows their continued importance.

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However, effectiveness is hard to assess. Non-compliance is common, particularly in chronic schizophrenia where patients lack insight and do not believe they are ill, and side effects such as tardive dyskinesia and weight gain lead many to stop taking the drug, resulting in relapse (the 'revolving door'). Rettenbacher et al. (2004) suggested that results in the 'real world' may differ from controlled clinical trials, which reduces the validity of trial findings. Drugs also only manage symptoms and do not address the person's beliefs or social functioning.

CBT: CBT helps patients challenge and reality-test delusional beliefs and develop coping strategies for hallucinations. Kuipers et al. (1997) found CBT alongside medication reduced symptoms more than medication alone, and Kuipers (1998) showed it was a cost-effective addition, as it reduced hospital admissions. Tarrier et al. (2004) found CBT reduced positive symptoms faster than routine care, and Morrison et al. (2014) found CBT reduced symptoms in patients who chose not to take antipsychotics, showing it can be an alternative. However, Tarrier found the benefits were short-term rather than long-term, and Jauhar et al.'s (2014) meta-analysis found only a small effect, which shrank further in better controlled, blinded studies. CBT also requires insight and motivation, so it is less effective for patients with severe positive or negative symptoms, and the Royal College of Psychiatrists (2014) reported unequal access, so many patients do not benefit.

In conclusion, antipsychotics have the strongest evidence for rapidly reducing positive symptoms, but non-compliance limits their real-world effectiveness, while CBT has more modest and less consistent effects. The most effective approach appears to be a combination of antipsychotic medication and CBT, as recommended by NICE.

05(c)

The dopamine hypothesis states that schizophrenia is caused by excess dopamine activity in the mesolimbic pathway (hyperdopaminergia), causing positive symptoms. This is applied directly in conventional antipsychotics such as

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chlorpromazine, which block D_2 receptors and so reduce hallucinations and delusions. The revised hypothesis, which links negative symptoms to low dopamine in the prefrontal cortex, led to atypical drugs such as clozapine, which act on dopamine and serotonin receptors and help negative symptoms too. Structural abnormalities such as enlarged ventricles are associated with negative symptoms that respond poorly to drugs, so these patients may need CBT, social skills training or cognitive remediation, and brain scans could help identify who will respond to medication.

Cannabis contains THC, which increases dopamine release and may trigger psychosis in vulnerable people. This can be applied through psychoeducation, a key part of CBT, which helps clients understand the link and reduce or stop cannabis use to prevent relapse.

06(a) The Type A and Type B personality explanation was proposed by two cardiologists, Friedman and Rosenman, who suggested that some people's personality makes them more vulnerable to stress and to stress-related illness, particularly coronary heart disease (CHD).

Type A individuals show three main characteristics. First, competitiveness and achievement striving: they are highly ambitious, target driven and constantly try to achieve more. Second, time urgency and impatience: they always feel under time pressure, try to do several things at once, speak and walk quickly and find waiting very frustrating. Third, hostility: they are easily irritated and angered and can be aggressive towards others. In contrast, Type B individuals are relaxed, easy-going, patient, less competitive and slower to anger.

The explanation proposes that Type A behaviour causes a greater and more frequent physiological stress response. Because Type A individuals perceive many everyday situations as stressful and challenging, the sympathomedullary pathway (SAM) is repeatedly activated, releasing adrenaline and noradrenaline from the adrenal medulla, which raises heart rate and blood pressure. The HPA axis also

releases cortisol. Chronic activation leads to high blood pressure, damage to artery walls and raised cholesterol, and therefore an increased risk of CHD. Type B individuals have a lower physiological response to stressors, so they are less likely to suffer stress-related illness.

Type A behaviour was originally assessed using a structured interview, in which the interviewer deliberately provokes the person (for example by speaking slowly or interrupting) to observe impatience and hostility, as well as their answers to questions. Self-report measures such as the Jenkins Activity Survey were developed later.

The main evidence comes from Friedman and Rosenman's Western Collaborative Group Study (1959). They followed 3,154 healthy men aged 39 to 59 in California, assessed as Type A or Type B by structured interview. After eight and a half years, 257 had developed CHD, and 70% of these were Type A. Type A men were about twice as likely to develop CHD as Type B men, even when other risk factors such as smoking were controlled. Type A men also had higher blood pressure and cholesterol.

Later research suggested that hostility is the 'toxic' component of Type A behaviour most strongly linked to heart disease, and the idea was extended to a Type D (distressed) personality, characterised by negative emotions and social inhibition (Denollet, 1996).

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Beta blockers, such as propranolol, act on the sympathetic nervous system. They block beta-adrenergic receptors in the heart and blood vessels, so adrenaline and noradrenaline cannot bind to them. This slows the heart rate and lowers blood pressure, reducing the physical symptoms of stress. Meera's symptoms of sweating and heart palpitations during swimming competitions and concerts are exactly the symptoms beta blockers target, so they are likely to help her quickly.

There is evidence for their effectiveness in performance situations. Neftel et al.

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(1982) gave musicians with stage fright a beta blocker or a placebo before a concert. The beta blocker group reported less stage fright, had lower heart rates and played more complex parts more accurately. This could transfer to Meera's singing, helping her control her nerves and follow musical cues. Schwabe et al. (2011) found that stress made people shift from goal-directed behaviour to habit behaviour, and that propranolol prevented this shift. If Meera's stress is pushing her towards unhelpful habits rather than her goals, beta blockers could help.

However, beta blockers only relieve the symptoms and do not address the cause of Meera's stress, which seems to be the pressure she feels to perform well in her assessments and the resulting loss of confidence. Once she stops taking them, her symptoms are likely to return, so they have limited long-term effectiveness. They also have side effects, such as tiredness, cold hands and dizziness, and stopping suddenly can cause rebound symptoms. Some users report sleep disturbance, which could worsen Meera's existing sleep problems. In swimming, reducing her heart rate could also limit her physical performance in a race, so they may suit concerts better than competitions. Furthermore, beta blockers do little for the cognitive anxiety and worry she reports.

Stress inoculation training (SIT), developed by Meichenbaum (1985), is a form of CBT that aims to give a person a long-term way of coping, like a vaccination against future stress. It has three phases: conceptualisation, where Meera would learn how she appraises stressors and how negative thinking about her assessments and performances increases her anxiety; skills acquisition and rehearsal, where she would learn coping skills such as relaxation, breathing, positive self-talk and time management; and application and follow-through, where she would practise these in increasingly stressful situations, such as mock assessments or rehearsals, with booster sessions.

SIT is effective in many contexts. Saunders et al.'s (1996) meta-analysis of 37 studies concluded that SIT reduced performance anxiety and state anxiety and improved performance under stress, which is relevant to both Meera's concerts

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and competitions. Sheehy and Horan (2004) found that SIT helped first-year law students cope and reduced their anxiety and stress, which is highly relevant to Meera as a trainee solicitor facing assessments. Foa et al. (1991, 1999) found that SIT was effective at reducing symptoms of PTSD, similar to prolonged exposure. Meichenbaum (2007) argued that SIT is especially useful given the wide range of stressors in modern life, and because it gives Meera transferable skills, it could rebuild her confidence across work, swimming and singing.

However, SIT is time-consuming and requires motivation and commitment, which may be difficult for Meera alongside her demanding job, although Meichenbaum has shown it can be effective in short bursts. Foa et al. found that, over long periods, there was little difference between SIT and prolonged exposure. It is also unclear which phase is effective: Moses and Hollandsworth (1985) found with dental phobics that education (phase 1) alone was not enough, and that application was most important, so Meera would need to complete the whole programme to benefit.

In conclusion, beta blockers are effective in the short term for the physical symptoms Meera experiences during concerts, but they do not treat the cause of her stress. SIT is more appropriate for her long-term stress and confidence, especially for her assessments, and the best approach may be to combine them, using beta blockers for occasional concerts while she completes SIT.

07 The statement contains two claims: that non-human animals should be used as therapeutic devices, and that they should be used in any psychological research that benefits humans. I agree with the first claim to a large extent, provided the animals' welfare is protected, but I only partly agree with the second, because the word 'any' ignores the cost to the animals and the questionable value of some findings.

Animals as a therapeutic device: animal-assisted therapy uses animals such as

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dogs, horses and cats to improve human wellbeing. Allen (2003) reviewed evidence that pet ownership and the presence of pets lower blood pressure and heart rate responses to stress, suggesting animals reduce stress and the risk of cardiovascular illness. Therapy dogs are used with children with autism, older people with dementia and patients in hospitals, where they may increase social interaction and reduce anxiety and loneliness. This use clearly benefits humans and involves little harm, as the animals are usually companions treated with care. However, much of this research is correlational, so people who own pets may already be healthier or less stressed, and it is difficult to know whether the animal itself causes the benefit. There are also welfare issues: therapy animals may become stressed or tired by repeated handling in unfamiliar environments, so their needs must be monitored. On balance, using animals therapeutically is justified when the animal's welfare is protected.

Research that benefits humans: non-human animal research has made important contributions to psychology. Ethological research such as Lorenz (1935), who found that goslings imprinted on the first moving object they saw, was largely naturalistic and caused little harm, yet it informed our understanding of critical periods and influenced Bowlby's theory of attachment. Skinner's research on operant conditioning in rats and pigeons led to behaviour modification techniques such as token economies used in prisons and psychiatric hospitals. In biopsychology, Randrup and Munkvad (1966) found that giving rats amphetamines, which increase dopamine, produced stereotyped behaviours similar to some symptoms of schizophrenia, and that antipsychotics reduced these, supporting the dopamine hypothesis and the development of drug treatments. Research on psychopathology, such as Seligman's learned helplessness in dogs, provided a model of depression. These examples show that animal research can identify causes of disorders and test treatments that reduce human suffering, which supports the statement.

Supporters also argue that such research is acceptable because it is strictly regulated. In the UK the Animals (Scientific Procedures) Act 1986 requires that

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research is licensed by the Home Office and that the likely benefits outweigh the costs to the animals. The BPS Guidelines for Psychologists Working with Animals require researchers to follow the 3Rs (Russell and Burch, 1959): replacement with alternatives where possible, reduction of the number of animals used and refinement of procedures to minimise suffering, as well as choosing suitable species, caging and housing, and minimising pain and deprivation. This means needless experiments should be avoided. Gray (1991) argued that we have a special duty to our own species, so if research reduces human suffering it is morally justified. Animals also offer practical advantages: shorter lifespans allow many generations to be studied, and procedures that would be unethical on humans become possible.

Against the statement, the main problem is generalisation. Humans and animals differ in physiology, cognition, language and culture, so findings may not apply to humans. Schizophrenia involves hallucinations, delusions and disordered speech, which cannot be observed in rats, so Randrup and Munkvad's model only captures some behaviours. Interpreting animal behaviour in human terms also risks anthropomorphism, so if the findings do not generalise, the animals' suffering is needless and the benefit is uncertain.

Some research has caused severe and long-lasting harm. Harlow (1959) separated infant rhesus monkeys from their mothers and raised them with wire and cloth surrogates. Although this showed that contact comfort, not food, is the basis of attachment, the monkeys became socially and emotionally damaged and later abused or neglected their own offspring. Brady's (1958) executive monkey study, in which monkeys received electric shocks and developed ulcers, was used to suggest that responsibility causes stress, but the monkeys were not randomly allocated, so the findings were flawed and the suffering produced little benefit. This shows that 'benefit' is often uncertain before research takes place.

There are also philosophical objections. Singer (1975) argued that discriminating against animals because of their species is speciesism, comparable to racism, since what matters is the capacity to suffer. Regan (1984) took an animal

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rights position, arguing that animals have inherent value and should never be used as a means to an end, whatever the benefits to humans. From this view, the statement is unacceptable. In wider society, public attitudes have changed, with many people opposed to animal testing, which has led psychology to move towards alternatives such as brain scanning, computer modelling and observational studies of animals in natural habitats.

A useful way to decide is Bateson's (1986) decision cube, which considers the quality of the research, the degree of animal suffering and the likelihood of benefit. Research should proceed only when the quality is high and benefit is certain, and suffering is minimal. Under this model, Lorenz's research would be acceptable, but Harlow's and Brady's would not, which shows that research should not be carried out simply because it may benefit humans.

In conclusion, I agree that non-human animals should be used as therapeutic devices, as there is evidence they reduce stress and the harm to them is small if welfare is protected. However, I disagree that they should be used in any psychological research that benefits humans. The benefit is often uncertain, findings may not generalise and some studies have caused severe suffering. Animal research is justified only when it is high quality, the benefits clearly outweigh the costs, no alternative exists and it follows the 3Rs and BPS guidelines, so I agree with the statement only to a limited extent.