



Oxford Cambridge and RSA

Thursday 15 October 2020 – Morning

A Level Psychology

H567/03 Applied psychology

Time allowed: 2 hours

You must have:

- the OCR 12-page Answer Booklet



INSTRUCTIONS

- Use black ink.
- Write your answer to each question in the Answer Booklet. The question numbers must be clearly shown.
- Fill in the boxes on the front of the Answer Booklet.
- Answer **all** the questions in Section A.
- Choose **two** options in Section B and answer all the parts of the question for each option.

INFORMATION

- The total mark for this paper is **105**.
- The marks for each question are shown in brackets [].
- Quality of extended response will be assessed in questions marked with an asterisk (*).
- This document has **4** pages.

ADVICE

- Try to answer every part of each question you choose.
- Read each question carefully before you start your answer.

Section A: Issues in mental health

Answer **all** the questions in Section A.

- 1 (a) Outline **one** way of defining abnormality in relation to mental health. [2]
(b) Explain **one** weakness of this way of defining abnormality. [3]
- 2 The key research by Rosenhan (1973) was carried out in the USA. Within this study, staff in a psychiatric hospital rated how likely it was that patients were pretending to have a mental illness. Of the 193 patients judged in this way, 19 were suspected of being fake patients by a psychiatrist and one other staff member.
(a) Outline **one** way this finding illustrates reliability. [3]
(b) Outline **one** way this finding illustrates ethnocentrism. [3]
- 3 In the key research by Szasz (2011), mental illness is described as a 'myth'.
(a) What does Szasz mean by this? [3]
(b) To what extent do you agree with Szasz's claim that mental illness is a 'myth'? [5]
- 4 (a) Identify one specific disorder **and** identify an appropriate non-biological treatment for it. [2]
(b) Explain how this treatment can contribute to the success of the economy and society. [4]
- 5 Discuss mental illness in relation to the individual/situational explanations debate. [10]

Section B: Options

Choose **two** options and answer **all** parts of the question in the options you have chosen.

OPTION 1**Child psychology**

- 6 (a)* Outline the key research by Gibson and Walk (1960) and explain what it tells us about the development of perception. [10]
- (b)* Discuss methodological issues involved when researching perceptual development. [15]
- (c)* Mary is the manager of a nursery school for children aged from birth until they go to school. Mary is keen to get the children in her nursery school playing in ways that will aid their development.
- Outline at least one play strategy Mary could use to develop perception in the children attending her nursery school. [10]

OPTION 2**Criminal psychology**

- 7 (a)* Using the key research by Raine *et al.* (1997), explain what makes a criminal. [10]
- (b)* Discuss the validity of research into what makes a criminal. [15]
- (c)* Ray is the Government Minister in charge of prisons for the country. He is aware that while offenders are in prison there is an opportunity to reform them. Ray is interested in biologically-based measures to prevent crime that he could apply while offenders are still in prison.
- Outline at least one biological strategy a psychologist might suggest to Ray that could be used to prevent prisoners from committing crimes in the future. [10]

OPTION 3**Environmental psychology**

8 (a)* Outline the key research by Black and Black (2007) and explain what it tells us about environmental stressors. [10]

(b)* Discuss the reductionism/holism debate in relation to research into stressors in the environment. [15]

(c)* For the last few years, Simon has been able to walk to work. He has just been given a job that will require him to travel approximately 20 miles to get to work. A range of different transport options are available to Simon, but he is worried that his daily commute could become a stressful experience.

Outline at least one strategy for managing environmental stress that a psychologist might suggest to commuters like Simon. [10]

OPTION 4**Sport and exercise psychology**

9 (a)* Outline the key research by Smith *et al.* (1979) and explain what it tells us about coaching in sport. [10]

(b)* Discuss the nature/nurture debate in relation to research into performing with others in sport. [15]

(c)* Sharmin has just been made captain of her local women's cricket team. She wants to use this leadership position to try and improve the performance of the team.

Outline at least one strategy a psychologist might suggest for how Sharmin could improve the performance of her cricket team. [10]

END OF QUESTION PAPER

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- 1(a) *One way of defining abnormality is deviation from social norms. Every society has unwritten rules about what is acceptable behaviour, and a person is regarded as abnormal when their behaviour breaks these rules and is seen as odd, undesirable or unacceptable by the rest of that society, for example talking to people who are not there in public.*
- 1(b) *A weakness of the deviation from social norms definition is that it is culturally and temporally relative. Norms differ between cultures and change over time, so the same behaviour can be labelled abnormal in one place or era and normal in another. For example, homosexuality was listed as a mental disorder in the DSM until 1973 and is now accepted, which shows the definition reflects the values of a society rather than any objective feature of the person. It therefore risks labelling people who are simply different, such as eccentric or non-conformist people, as mentally ill, and can be used as a tool of social control.*
- 2(a) *The finding illustrates inter-rater reliability. For a patient to be counted as suspected of faking, a psychiatrist and one other member of staff had to independently reach the same judgement, so the suspicion was only recorded when two trained observers agreed with each other. Agreement between two raters is a measure of the consistency of the judgement being made. In addition, the judgements were made about a large number of patients, 193, so the pattern of 19 suspected cases is based on enough data to be seen as a consistent trend rather than a one-off result.*
- 2(b) *The finding illustrates ethnocentrism because the whole study was carried out in psychiatric hospitals in the USA, so the staff making the judgements were trained in the American system and were applying American diagnostic criteria (the DSM) and American assumptions about what a real patient looks like. The finding that 19 of 193 patients were suspected of pretending therefore only tells us how reliably staff detect sanity in US hospitals. Rosenhan cannot generalise this to how staff in other countries, with different training, diagnostic*

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manuals and cultural attitudes to mental illness, would judge their patients.

3(a) Szasz means that mental illness is not a real illness in the medical sense but a linguistic and rhetorical label that we attach to behaviours which disturb or disorient other people or the person themselves. A genuine illness involves a demonstrable physical lesion or malfunction of the body. Szasz argues that if a so-called mental illness is found to have a biological cause then it was never a mental illness but an undiagnosed bodily illness, like neurosyphilis. If it has no bodily cause, then calling it an illness is simply a medicalised way of describing problems in living, a modern pseudomedical view that turns people into patients to be treated, often coercively, rather than agents in a real-life drama.

3(b) To some extent I agree with Szasz. Diagnoses have been used as a means of social control: in the Soviet Union political dissidents were labelled with 'sluggish schizophrenia', and homosexuality was classified as a disorder in the DSM until 1973, which shows that labels can reflect the values of those in power rather than objective disease. Szasz is also right that the pharmaceutical industry has a financial interest in ever more disorders being 'discovered' and medicated, and Rosenhan showed how easily a label like 'schizophrenia in remission' sticks once given. However, I disagree with his strongest claim that there is no such thing as mental illness. Conditions such as schizophrenia and bipolar disorder have genetic and neurochemical correlates, cause real suffering and respond to treatment, and many people say that receiving a diagnosis is a comfort because it explains their experience and gives access to help. Szasz's view risks shutting off treatments such as CBT and medication that people find genuinely useful. Overall I only partly agree: the label can be misused, but the distress it points to is real.

4(a) Disorder: depression (major depressive disorder). Non-biological treatment: cognitive behavioural therapy (CBT), which challenges negative automatic thoughts and uses behavioural activation.

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- 4(b) CBT for depression benefits the economy because depression is one of the leading causes of sickness absence. A course of CBT is relatively short (usually 6 to 20 sessions) and once a person's negative thinking and withdrawal are reduced they are able to return to work or stay in work, so they keep earning, paying income tax and contributing to productivity rather than claiming sickness benefits and needing their employer to pay for cover. It also saves the NHS money in the long run because CBT teaches coping skills that reduce relapse, so patients need fewer GP visits, prescriptions and hospital admissions; this reasoning led to the IAPT programme in England. CBT benefits society because a recovered person can carry on caring for children or elderly relatives, do voluntary work and keep up relationships with family, friends and colleagues, which reduces the burden on carers and social services and lowers the risk of suicide. The skills learned are also passed on, improving the wellbeing of the people around them.
- 5 The individual/situational debate asks whether behaviour, including mental illness, is best explained by factors within the person, such as their biology or personality, or by factors in their environment and the situation they are in. Individual explanations of mental illness are mainly biological. Gottesman's twin studies found a concordance rate of about 48% for schizophrenia in identical twins compared with 17% in non-identical twins, suggesting genetic inheritance, and the dopamine hypothesis explains positive symptoms in terms of overactive dopamine pathways. Brain scans also show enlarged ventricles in some people with schizophrenia. A strength of this side is that it is objective and scientific, and it has produced effective treatments: the success of antipsychotics and SSRIs supports the idea that the problem lies inside the individual. However, concordance is far below 100%, so genes cannot be the whole story, and the effectiveness of a drug does not prove that a chemical imbalance was the original cause. Situational explanations come mainly from the behaviourist approach. Watson and Rayner showed that a phobia could be created in Little Albert through classical conditioning, and operant conditioning explains how avoidance keeps the fear going. Seligman's

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learned helplessness suggests depression arises from uncontrollable situations, and Bandura's social learning theory suggests disorders can be modelled from others. Rosenhan's study also showed how the situation of being in a hospital made normal behaviour, like writing notes, be interpreted as a symptom. Behavioural treatments such as systematic desensitisation and CBT work well, supporting situational factors. The weakness is that not everyone who has a traumatic experience develops a disorder, so the situation alone is not sufficient. In my view the best explanation is interactionist: the diathesis-stress model proposes that an individual vulnerability, such as a genetic predisposition, is triggered by situational stressors. This explains why concordance is high but not perfect and why a combination of medication and therapy is often the most effective treatment, so mental illness is best explained by both sides of the debate working together.

- 6(a) *Gibson and Walk investigated whether depth perception is innate or learned using the visual cliff. This was a glass-topped table with a centre board; on the shallow side a checkerboard pattern was placed directly under the glass, while on the deep side the same pattern was placed on the floor about four feet below, so the drop looked real but was perfectly safe to crawl on. Thirty-six human infants aged 6 to 14 months were placed on the centre board and their mothers called them first from the deep side and then from the shallow side. Twenty-seven of the infants moved off the board; all 27 crawled onto the shallow side at least once and only three ever crept onto the deep side. Many cried or crawled away from their mother when she called from the deep side, even though they patted the glass and could feel it was solid. Gibson and Walk also tested animals that can move as soon as they are born. Chicks less than 24 hours old never hopped to the deep side, kids and lambs would not step onto it and froze when placed on it, and rats only chose the shallow side when their whiskers could not touch the glass. Kittens avoided the deep side by four weeks, and kittens reared in the dark initially crawled onto both sides but avoided the deep side after a week in the light. This tells us that depth perception, and the ability to avoid a drop, appears as soon*

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as an animal can move independently, so it seems to be largely innate rather than learned by falling. The study went further and explained which depth cues develop first. By placing patterns of different-sized squares directly under the glass on both sides they tested relative size (pattern density), and by lowering the pattern on one side they tested motion parallax, where nearer objects move faster across the retina. Day-old chicks and dark-reared rats were not influenced by pattern density, suggesting relative size is learned, whereas they consistently used motion parallax, suggesting this is the innate cue. However, because the human infants were at least six months old and had months of visual experience, the study cannot prove that human depth perception is present from birth, only that it is present by the time infants can crawl.

6(b) Methodological issues are the problems with how research is designed and carried out that affect how much confidence we can have in its conclusions, for example the sample, the way data is collected, control and the validity and reliability of findings. A central issue in perceptual development is that the participants cannot tell us what they perceive, so researchers must infer perception from behaviour. Gibson and Walk inferred depth perception from whether infants crawled to the shallow side, but an infant who stayed on the board might have perceived the drop and been frightened, or might simply have been tired or uninterested. Fantz used preferential looking, inferring that infants who looked longer at a face-like pattern could discriminate it, but longer looking does not necessarily mean the infant perceives the stimulus in the same way as an adult. Habituation studies have the same problem. These are issues of construct validity, and they mean conclusions should be drawn cautiously. A second issue is the age of participants. Gibson and Walk could only test infants who could crawl, so the youngest were six months old and had already had extensive visual experience; the study cannot settle whether depth perception is innate in humans. To get round this, they used animals that can move from birth, but generalising from chicks, rats and goats to human babies is questionable because species differ in how important vision is to

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them. Testing newborns is possible with looking or sucking measures, but newborns sleep most of the time and their visual acuity is poor, so data collection is slow and samples tend to be small and unrepresentative, often from families willing to volunteer in university towns. Third, the presence of the carer is usually essential, as in Gibson and Walk where the mother called the infant, but the mother's facial expression and tone could act as an extraneous variable, encouraging or discouraging the infant regardless of the cliff. Researchers who know the hypothesis may also unconsciously bias their coding of looking times or crawling behaviour, so double-blind coding and inter-rater reliability checks are needed. On the positive side, the visual cliff is a highly controlled laboratory procedure with a standardised apparatus that can be replicated, and the consistent results across infants and species give the findings good reliability. The controlled setting is also ethical since the glass meant no infant could fall, although many infants were distressed when called towards the deep side, which raises the issue of protection from harm with participants who cannot consent. Finally, the artificial setting lowers ecological validity: real environments contain many cues to depth that the cliff removed. In conclusion, research into perceptual development is methodologically difficult because infants cannot report what they see and cannot be tested before they have some experience, so the strongest conclusions come from combining controlled infant studies with animal research and longitudinal observation, while accepting that each method on its own has limitations.

6(c) Mary could use play strategies drawn from sensory integration therapy, developed by Ayres, which holds that children's perceptual skills develop as the brain learns to organise information from the senses, so play that gives the senses a workout helps development. One strategy is messy play: a sand and water tray, finger painting, play dough and a cooking activity where children mix, pour and knead. Handling materials of different textures, temperatures and weights develops tactile perception and hand-eye coordination, and pouring water into containers of different sizes develops perception of size and volume. For the babies and

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toddlers Mary could provide treasure baskets of safe objects with different textures and sounds to grasp and mouth. A second strategy targets visual perception and form constancy: shape sorters, stacking cups, jigsaws and structured block play where children match and build shapes. Recognising that a triangle is still a triangle when turned or seen from a different angle is visual form constancy, and sorting and matching games give repeated practice at this; Fantz's work shows even young infants attend to pattern, so Mary can start with high-contrast picture cards for the babies. A third strategy develops depth and movement perception: an indoor soft-play obstacle course with ramps, tunnels and low steps to crawl over and around, and ball games such as rolling and catching. Gibson and Walk showed that infants use motion parallax to judge depth as soon as they can crawl, so moving through a safe three-dimensional space with varied heights gives children practice at judging distances and drops, and catching a rolling ball develops perception of movement and speed. Finally, listening games such as 'what's that sound?', musical instruments, action songs and following rhythms develop auditory perception and auditory constancy. Mary should keep sessions short and playful, use everyday nursery resources so the strategies are cheap, and allow children to choose activities, because sensory integration works best when the child is actively engaged. Together these strategies give every child from birth to school age structured, enjoyable practice at the visual, tactile, auditory and spatial skills that underpin perception.

7(a) Raine et al. (1997) used PET scans to compare the brains of 41 murderers pleading not guilty by reason of insanity (NGRI) with 41 non-murderers matched for age and sex; six of the control group had schizophrenia to match the six schizophrenic murderers. The NGRIs (39 men and 2 women, mean age 34.3) were referred to the University of California to obtain evidence for their defence and were medication-free for two weeks before scanning. Each participant was injected with a radioactive glucose tracer and completed a continuous performance task for 32 minutes to activate the frontal lobes, after which the scan showed how much glucose each area of the brain had used. The murderers showed significantly lower glucose metabolism

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in the prefrontal cortex, the superior parietal gyrus, the left angular gyrus and the corpus callosum, and abnormal asymmetries of activity in the amygdala, thalamus and medial temporal lobe including the hippocampus, with lower activity on the left and higher on the right. There were no differences in areas such as the caudate, putamen, cerebellum or midbrain, so the differences were specific rather than general. This research suggests that what makes a criminal, or at least a violent offender, may be differences in brain functioning. Reduced activity in the prefrontal cortex, which normally inhibits impulses, would explain impulsivity, poor self-control, immaturity and an inability to think about consequences, so a person may react to provocation with violence. Abnormal amygdala activity would explain fearlessness and a failure to learn from fear conditioning, so the usual anxiety that stops people breaking the law is weaker. Reduced corpus callosum activity means the left hemisphere is less able to regulate the emotional right hemisphere, and the hippocampus and thalamus are involved in learning and emotion. Together these differences could explain the aggressive, poorly controlled crimes the NGRI's were accused of. However, Raine stressed that the findings do not show that violence is caused by biology alone, do not prove the murderers were not responsible, and cannot be used to diagnose violence from a scan, so brain dysfunction is best seen as one predisposing factor that interacts with social and environmental factors such as upbringing to make a criminal.

7(b) Validity is the extent to which research measures what it claims to measure and produces findings that are true. It includes internal validity, whether the independent variable really caused the change, construct validity, whether the operationalised measure reflects the concept, ecological validity, whether findings apply to real-life settings, and population validity, whether results generalise beyond the sample. Research into what makes a criminal raises validity issues on all of these. Raine et al. used PET scanning, an objective and scientific measure of brain metabolism that is not open to social desirability bias, and matched the controls carefully, so the internal validity of the comparison is quite good. However, the

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construct validity of the measure is questionable: participants were scanned while doing a continuous performance task, so the scans show brain activity during an attention task, not during violent behaviour, and we cannot be sure that lower prefrontal activity means a lack of self-control. The population validity is low because the sample consisted only of murderers pleading not guilty by reason of insanity, an unusual group that cannot represent other criminals such as burglars or fraudsters, and 'criminal' was operationalised as 'NGRI murderer'. Raine himself warned that the data were correlational and could not show that brain differences cause violence, since head injuries or drug use might have caused both. Genetic research has similar strengths and weaknesses. Christiansen's twin study of 3586 Danish twins found 35% concordance for criminality in identical twins compared with 13% in non-identical twins, but the validity of the twin method depends on assuming identical twins share the same environment to the same degree as other twins, and criminality was measured by convictions, which only captures those who were caught. Brunner et al. found a MAOA gene defect in one Dutch family with a history of aggression, which has high internal validity as a case study but almost no population validity. Non-physiological research has different problems. Farrington's Cambridge Study followed 411 boys from age 8 to 48 and found that risk factors such as poverty, poor parenting and convicted parents predicted offending. Its longitudinal design and use of official records plus interviews gives good ecological validity because it studied real development over time, but self-reports of offending are vulnerable to social desirability bias and the all-male working-class London sample limits generalisation. Eysenck's theory relied on personality questionnaires completed by convicted prisoners, so the finding that criminals score higher on extraversion, neuroticism and psychoticism could reflect the effects of imprisonment rather than its causes, and Lombroso's early claim that criminals have atavistic features lacked any control group, so it had no validity at all. In conclusion, biological research tends to have good internal validity but weak ecological and population validity, while social research has the opposite profile. No single study is fully valid, so the most convincing conclusions about what makes a criminal come from triangulating

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physiological and non-physiological evidence.

7(c) *One biological strategy a psychologist might suggest to Ray is a dietary intervention. Gesch et al. (2002) gave 231 young adult prisoners in a UK prison either a daily capsule of vitamins, minerals and essential fatty acids such as omega-3 or a placebo for an average of about four months, in a double-blind design. The supplemented group committed about 26% fewer disciplinary offences than before, and violent incidents fell by about 37%, while the placebo group showed little change. The rationale is that omega-3 fatty acids and micronutrients are needed for healthy functioning of the prefrontal cortex and for serotonin production, and prisoners often eat poor diets. Raine et al. found that violent offenders had reduced prefrontal activity, so improving brain nutrition may improve self-control. Ray could therefore require prison kitchens to serve a balanced diet with oily fish and fresh vegetables and provide a daily supplement for all prisoners. This is cheap, easy to implement nationwide, and because it is simply food it is within ethical guidelines and does not require consent to medical treatment. A second strategy is to remove biological hazards from the prison buildings, in particular replacing any remaining lead pipes and lead paint. Lead exposure damages the developing brain and has been linked to impulsivity and aggression, so refurbishing old Victorian prisons to remove lead reduces a risk factor for future offending. A third strategy, for a smaller group of sex offenders, is hormone treatment with anti-androgen drugs that lower testosterone, since high testosterone is associated with aggression and sex drive. This must be voluntary, with informed consent and medical supervision, so it could be offered as part of a treatment programme rather than imposed. Finally, Ray could fund screening and treatment for brain injury and ADHD among prisoners, with medication where appropriate, because these conditions are over-represented in offenders and treating them reduces impulsive behaviour. Together these measures tackle the biological risk factors identified by Raine and Gesch while prisoners are a captive audience, and the diet strategy in particular is evidence-based, low-cost and ethical, so it is the one I would recommend Ray introduce first.*

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8(a) *Black and Black (2007) investigated the effect of chronic aircraft noise on the health of residents living near Sydney airport in Australia. They compared a noise-exposed group living under the flight paths, where long-term noise monitoring showed average noise levels exceeding World Health Organisation guidelines with frequent events above 70 dB, with a control group living in a similar suburb with comparable socio-economic status but no aircraft noise. Around 1500 households in each area were sent a questionnaire and about 700 residents aged over 15 responded. The questionnaire contained the SF-36 health survey, which measures eight dimensions of health including physical functioning, general health, vitality and mental health, as well as a noise annoyance scale, a noise sensitivity scale and questions about diagnosed hypertension and other confounding variables such as smoking and age. The noise-exposed group scored significantly worse than the control group on physical functioning, general health, vitality and mental health. They were far more annoyed by aircraft noise, with a mean annoyance score of 6.27 compared with 1.03 for the control group. Long-term exposure was associated with chronic noise stress, and residents with chronic noise stress were around two and a half times more likely to report hypertension than those without. This study tells us several things about environmental stressors. First, noise is an environmental stressor with real health consequences, not just an annoyance: it reduces self-reported physical functioning, vitality and mental health, so stressors in our surroundings affect wellbeing as a whole. Second, the pathway from stressor to illness appears to run through chronic stress: continuous noise is appraised as annoying, this becomes long-term stress, and chronic activation of the stress response, raising heart rate and blood pressure, is linked to hypertension and so to risk of cardiovascular disease. Third, it shows that environmental stressors are chronic and uncontrollable, which is why they are so damaging, because residents cannot switch off aircraft noise or habituate to it. Finally, it shows that environmental stressors are a public health issue, so solutions such as flight curfews, insulation and planning controls are needed, rather than expecting individuals to cope alone.*

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8(b) Reductionism is the view that complex behaviour is best explained by breaking it down into its simplest components, such as a single environmental variable or a biological response, while holism argues that behaviour can only be understood as a whole, taking into account the interaction of many factors and the meaning of the situation to the person. Research into environmental stressors is largely reductionist in design. Glass and Singer exposed participants to bursts of noise in a laboratory and measured proofreading errors and persistence on puzzles afterwards, isolating one variable, noise, and one aspect of it, its predictability and controllability. This is a strength because the controlled experiment allowed them to show that unpredictable, uncontrollable noise impairs performance after it has stopped, establishing cause and effect. Black and Black likewise focused on one stressor, aircraft noise, and found it was associated with annoyance, chronic stress and hypertension. However, the reductionist focus means other stressors in residents' lives, such as traffic, work or crowded housing, were not examined, and residents who stay near an airport may differ from those who leave, so the single-variable explanation may be too simple. Biological research on stressors is more reductionist still: Lundberg measured adrenaline in the urine of train commuters and found higher levels in those boarding mid-journey when the train was crowded, reducing commuting stress to a hormone level. This gives objective, reliable data, but a hormone level cannot capture how stressful the journey felt or why; Lundberg's own finding that perceived control over where you sit mattered more than density shows that cognition, not just crowding, determines stress, which is a more holistic point. Calhoun's rat studies of overcrowding, which produced the 'behavioural sink' of aggression and infant neglect, are reductionist in generalising from rats to human cities, and research on temperature and aggression, such as Anderson's correlations between hot weather and violent crime, ignores the social context of hot days. On the other hand, some research takes a more holistic approach. Black and Black used the SF-36, which measures eight dimensions of physical and mental health, and collected data on annoyance, sensitivity, lifestyle and demographic variables, so they looked at the whole person rather than one outcome. Lazarus's transactional model explains that an environmental factor

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only becomes a stressor if the person appraises it as a threat that exceeds their coping resources, which explains why the same noise annoys one resident and not another. Evans's work on multiple stressors in urban environments argues that noise, crowding and pollution interact and their combined effect is greater than the sum of each. In conclusion, reductionist research has been essential for identifying which features of the environment cause stress and how, and it has led to practical interventions such as noise regulation, but it cannot fully explain individual differences in stress. A holistic view that combines environmental, biological, cognitive and social factors is more complete, so the two approaches are best seen as complementary rather than rivals.

8(c) The first strategy a psychologist might suggest to Simon is to reduce exposure to the environmental stressors of commuting. If he drives the 20 miles, he could turn the radio off or play calm music so that the cabin is a quiet environment, set the air conditioning so he is not too hot, since research on temperature shows heat increases irritability and aggression, and leave early to avoid the most congested, unpredictable traffic. Glass and Singer found that unpredictable and uncontrollable noise is far more stressful than predictable noise, so anything that gives Simon control and predictability over his journey, such as a planned route and departure time, should reduce stress. If he takes the train, Lundberg's study of commuters found that adrenaline levels were higher in passengers who boarded part-way along the line, when the carriage was already crowded and they had little choice of seat, than in those who boarded at the start, even though they travelled further. The psychologist would therefore advise Simon to travel from the first station or arrive early to get a seat, choose a quieter carriage and use noise-cancelling headphones, because perceived control over personal space reduces the stress of crowding. A second strategy is to choose a greener route. Ulrich's work on restorative environments and Kaplan's attention restoration theory show that contact with nature lowers physiological arousal and restores depleted attention, so cycling or driving along a route through parks or countryside, or at least looking at natural scenery through the train

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window, would make the commute less stressful. Cycling part of the way also adds exercise, which uses up stress hormones. A third strategy is an emotion-focused approach: stress inoculation training (Meichenbaum). Simon would first learn to recognise his stress triggers, such as delays, then acquire coping skills like deep breathing, relaxation and positive self-talk ('a delay is annoying but not a disaster'), and finally practise them on real journeys, so that over time the commute no longer triggers a strong stress response. The psychologist would recommend Simon combine these: pick the transport option that gives him most control, make the journey as quiet, cool and green as possible, and use cognitive techniques for the parts he cannot control.

9(a) Smith, Smoll and Curtis (1979) investigated whether training coaches in a positive approach would improve the experience of young players. The sample was 31 male Little League baseball coaches in Seattle and 325 boys aged 8 to 15 (mean 11.4) who played for them. Eighteen coaches were randomly assigned to the Coach Effectiveness Training (CET) programme and 13 acted as a no-treatment control group. CET was a two-hour pre-season workshop based on the Coaching Behaviour Assessment System (CBAS), in which coaches were taught behavioural guidelines: give positive reinforcement for effort as well as results, give encouragement and corrective technical instruction rather than punishment after mistakes, and set positive norms of mutual support. The trained coaches also received feedback on their own observed behaviour and completed self-monitoring forms after games to increase self-awareness. During the season trained observers coded coaches' behaviour with the CBAS, and at the end of the season the children were interviewed at home about their coach, their team-mates and their enjoyment, and completed a self-esteem scale which was compared with one taken the previous year. The results showed that trained coaches gave more reinforcement and encouragement and less punishment than the control coaches and were more aware of their own behaviour. Players of the trained coaches rated their coaches more positively, said they liked their team-mates more and enjoyed baseball more. Their self-esteem

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increased significantly, particularly in boys who started the season with low self-esteem, while the control group's did not. However, the teams of trained coaches did not win significantly more games (about 55% compared with 46%). This tells us several things about coaching in sport. First, coaching behaviour can be changed with a fairly brief, structured programme, so coaching is a learned skill rather than a fixed personality trait. Second, a positive, reinforcing style has its biggest effect on the psychological outcomes of sport: enjoyment, attitudes to team-mates and self-esteem, which matter most for children and for keeping them in sport. Third, we should not expect a positive coaching style to deliver quick improvements in results, so its value lies in player development and wellbeing rather than the scoreboard, and coaches should be judged on more than wins.

9(b) The nature/nurture debate asks whether behaviour is the product of innate, inherited characteristics, such as genes, temperament and personality traits, or of experience and the environment, such as learning, coaching and culture. Research into performing with others in sport, which includes teams, coaching and leadership, provides evidence for both sides. The clearest support for nurture comes from Smith et al. (1979), who showed that a two-hour Coach Effectiveness Training programme changed how Little League coaches behaved, and that children coached in this positive, reinforcing style enjoyed the game more, liked their team-mates more and showed increased self-esteem. Both the coaches' behaviour and the players' responses were shaped by learning and environment, not by inborn ability, so this strongly supports nurture. The strength of this evidence is that it comes from a field experiment with random allocation, but it only shows that coaching affects social and emotional outcomes, as win-loss records did not change, so nature in the form of players' innate talent may still determine actual performance. Research on team cohesion also favours nurture: Carron et al. argue that cohesion develops through environmental factors such as team size, group norms, communication and leadership, and it can be deliberately built through team-building, which would be unnecessary if the ability to work with others were fixed by

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nature. Evidence for nature comes from trait theories of leadership. Stogdill reviewed studies and identified traits such as intelligence, self-confidence, sociability and dominance that leaders tended to share, and the Great Man theory assumed leaders are born not made. If captains and coaches succeed because of inherited traits, this supports nature. However, Stogdill himself concluded that no set of traits predicted leadership in every situation, which weakens the pure nature position, and trait studies are correlational, so leadership experience could develop the traits rather than the traits causing leadership. Chelladurai's multidimensional model of leadership captures both sides: a leader's actual behaviour is influenced by their own characteristics such as personality (nature) but also by the situation and the preferences of the group members (nurture), and performance and satisfaction depend on congruence between required, preferred and actual behaviour. This interactionist model fits the evidence better than either extreme. Similarly, social facilitation research by Zajonc suggests that the presence of others raises arousal, which may be an innate drive response, yet whether this helps or hinders performance depends on how well learned the skill is, which is nurture. In conclusion, research into performing with others in sport suggests that although innate traits and arousal responses contribute, the strongest and most useful evidence points to nurture: coaching, cohesion and leadership behaviours can all be taught and changed. The most convincing position is an interaction in which natural dispositions are shaped by training and the team environment.

9(c) One strategy a psychologist might suggest to Sharmin is to build team cohesion, based on Carron et al.'s model of cohesion. Carron distinguishes task cohesion, how united the team is in pursuing its goals, from social cohesion, how much players like each other. To build social cohesion Sharmin should make time to get to know each player personally, organise social events away from the pitch and encourage open, easy communication so that players feel able to speak up; Smith et al. found that players who felt supported liked their team-mates more. To build task cohesion she should establish clear group norms, for example that everyone

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arrives on time for nets and encourages a team-mate after a dropped catch rather than criticising, and give each player a clearly defined role, such as opening bowler or finisher, so everyone feels they contribute. Cohesive teams communicate better in the field and are more resistant to the social loafing Latane identified, which matters in cricket where individual effort in fielding can go unnoticed. A second strategy is leadership style, based on Chelladurai's multidimensional model, which proposes that performance and satisfaction are highest when the leader's actual behaviour matches what the situation requires and what the members prefer. Sharmin should find out through conversation or a short questionnaire whether her team-mates prefer democratic, training-focused or socially supportive leadership, and adjust her style accordingly, being more autocratic in match situations that demand quick decisions and more democratic when planning. Following Smith et al., she should use a positive approach: reinforce effort, give corrective instruction rather than punishment after mistakes and avoid shouting at a bowler who is hit for six, as this raises enjoyment and self-esteem and keeps players turning up. A third strategy is goal setting (Locke and Latham). Sharmin should agree SMART goals with the team and individuals: specific, measurable, achievable, realistic and time-bound, for example each bowler reducing extras to under five per match by the end of the month, and a team process goal of taking singles off every over. Process and performance goals are better than outcome goals like 'win the league' because they are within the players' control. She should review the goals with feedback after each match. Together these three strategies give Sharmin a specific, psychologically grounded plan for improving her team's performance.