Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/31**

Paper 3 Specialist Options: Theory **May/June 2023**

1 hour 30 minutes

1372662101

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **four** questions in total:
  - Answer questions from **two** options.
  - For each chosen option, answer **all** questions.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.

INFORMATION

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

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Psychology and abnormality

Answer **all** questions.

1 **(a)** Explain what is meant by 'pyromania'. [2]

(b) Describe the study by Glover (2011) that used covert sensitisation as a treatment for kleptomania. [4]

(c) Explain **one** strength and **one** weakness of the study by Glover. [6]

2 **(a)** Describe explanations of depression. [8]

(b) Evaluate explanations of depression, including a discussion about reductionism versus holism. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Identify **two** shopper movement patterns from the study by Gil et al. (2009). [2]

(b) Dayan and Bar-Hillel (2011) conducted a laboratory study and a field study on primacy, recency and menu item position.

Outline any **two** results from these studies by Dayan and Bar-Hillel. [4]

(c) Discuss the validity of these studies by Dayan and Bar-Hillel. [6]

4 **(a)** Describe what psychologists have discovered about retail/leisure environment design (retail store architecture, leisure environments, store interior layout). [8]

(b) Evaluate what psychologists have discovered about retail/leisure environment design (retail store architecture, leisure environments, store interior layout), including a discussion about generalisability. [10]

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Psychology and health

Answer **all** questions.

5 **(a)** Practitioners may make type I or type II errors in diagnosis.

Outline **one** of these types of error, including an example in your answer. [2]

(b) Describe the procedure of the study by Robinson and West (1992) on disclosure of information to a practitioner. [4]

(c) Explain **two** weaknesses of the study by Robinson and West. [6]

6 **(a)** Describe what psychologists have discovered about the management of stress. [8]

(b) Evaluate what psychologists have discovered about the management of stress, including a discussion of experiments. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Outline how a token economy can be used to reduce accidents at work. [2]

(b) Describe the study by Oldham and Brass (1979) on open plan offices. [4]

(c) Explain **one** strength and **one** weakness of the study by Oldham and Brass. [6]

8 **(a)** Describe what psychologists have discovered about measuring job satisfaction. [8]

(b) Evaluate what psychologists have discovered about measuring job satisfaction, including a discussion about psychometrics. [10]

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

Question number

Answers for paper 9990/31

Psychology and abnormality

1(a) Pyromania is an impulse control disorder involving an obsessive desire to set fire to things. The person has deliberately and intentionally set fires on more than one occasion, feels tension or heightened arousal before setting the fire and relief once it is done, and is fascinated by fire.

1(b) Glover (2011) carried out a case study of a 56-year-old woman with kleptomania. After interviewing the patient, it was decided to pair imagery of nausea and vomiting with the act of stealing. She was given four therapy sessions, and muscle relaxation was used in the first two sessions to enhance her visualisation. She imagined herself about to steal and then feeling sick and vomiting, so she learned to associate the unpleasant sensation with the stealing behaviour. She also practised the imagery outside the sessions whenever she felt tempted to steal. At a 19 month follow-up, her kleptomania had greatly reduced.

1(c) One strength is that the study shows covert sensitisation has a long-term benefit. Because the woman was followed up 19 months after therapy and her stealing had greatly reduced, we can be more confident that the treatment produced a lasting change and not just a short-term improvement. As it was an in-depth case study with qualitative data, Glover also understood her urges in detail and could tailor the imagery (nausea and vomiting) to her, and she used it when she was really tempted, so the study has good ecological validity.

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One weakness is poor generalisability. There was only one participant, a 56-year-old woman, so the findings may not apply to men, to younger people with kleptomania or to other impulse control disorders such as pyromania or gambling. In addition, the outcome relied on her own report, so she may have shown social desirability bias, telling Glover she was stealing less in order to please him, and no quantitative data were collected, so her improvement cannot be objectively compared before and after therapy.

2(a) Biological explanations say depression has a genetic and neurochemical basis. Oruc et al. (1997) studied patients with bipolar disorder and found that sixteen of them had at least one first-degree relative with a major affective disorder, suggesting it runs in families. They also found that polymorphisms in serotonin-related genes could be responsible for an increased risk of developing bipolar disorder, but only in the females in the sample. The neurochemical explanation is that depression is caused by low levels of serotonin in the brain, which leads to low mood.

The cognitive explanation (Beck, 1979) says depression is caused by faulty processing of information. Beck described the cognitive triad: negative views about oneself, about the world and about the future. These negative thoughts influence each other, so the depressed person spirals into lower and lower moods.

Learned helplessness is where a person who repeatedly experiences unpleasant situations they cannot control learns that they are helpless, so they no longer try to make their life or mood better. Seligman (1988) applied this through attributional style. The Attributional Style Questionnaire was given to 39 unipolar depressed patients at the beginning and end of cognitive therapy and at a one-year follow-up, and to 12 bipolar patients during a depressed episode. A pessimistic explanatory style for bad events (internal, stable and global) correlated with the severity of depression. As therapy progressed, depression reduced as the explanatory style became less pessimistic, and this improvement remained at the

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one-year follow-up.

2(b) The genetic and neurochemical explanation is reductionist, as it reduces depression to genes and low serotonin and does not consider any other causes. Not everyone with a first-degree relative with depression develops it, so other factors must be involved. The cognitive explanation is more holistic, as it considers the complex thought processes in the cognitive triad, although it could still be seen as reductionist because it ignores genetic factors and learning. Learned helplessness is also more holistic than the biological explanation, as it looks at how depression is learned from life experiences, but it is environmentally reductionist because it ignores biology. A diathesis-stress view, combining a genetic vulnerability with negative thinking and uncontrollable life events, would be the most holistic.

The explanations also differ on nature versus nurture. The biological explanation is on the nature side, while learned helplessness and attributional style are on the nurture side, as the pessimistic style is learned. The biological explanation is also deterministic, suggesting a person with the genes cannot avoid depression, whereas Beck allows more free will because faulty thinking can be changed.

The evidence has weaknesses. Oruc et al. studied bipolar patients only, and the gene link was found only in females, so it may not generalise to unipolar depression or to males. Seligman's study is correlational, so a pessimistic style may be a symptom of depression rather than its cause, and it relied on self-reports, which may be affected by social desirability.

However, the explanations have useful applications. The neurochemical explanation led to SSRIs and the cognitive explanation led to CBT, which challenges the negative triad. Seligman showed that depression reduced as explanatory style became less pessimistic, supporting cognitive therapy.

Overall, each explanation is valid but partial, so combining them gives the fullest account.

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	Psychology and consumer behaviour
3(a)	Two shopper movement patterns are the short trip and the round trip. (Others identified were the central trip and the wave trip.)
3(b)	In the laboratory study, participants were more likely to choose items placed at the extremes of a menu category, that is the beginning or the end, rather than in the middle. The advantage of being placed at the beginning or end was 56%, and this was found even for unpopular items, which had an advantage of 54%. In the field study in a café in Tel Aviv, there was a larger gain when an item moved from the exact middle of a category to the extreme end (55%) than when it moved from the near-middle to the near-end (51%, which was not significant). There was also an advantage of being placed in the top half of the category (59%).
3(c)	The two studies differ in ecological validity. The first was a laboratory study in which participants chose from menus without really ordering and eating the food, so it has low ecological validity. The second was a field study in a real café where customers paid for real food, so it has high ecological validity, and because it found similar primacy and recency effects, it supports the validity of the laboratory findings. There may be demand characteristics in the laboratory study, as participants knew they were in a study. However, although they would know it was about menu choice, they were unlikely to guess it was about menu position, so social desirability is reduced. In the field study, customers did not know they were being studied, so their choices were natural and valid. Population validity is mixed. The sample of 240 in the laboratory study was large,

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and the café customers were a varied range of people. However, the first study used only students, and the second used one café in one city in Israel, so the findings may not apply to other cultures or restaurants.

Finally, only quantitative data on choices were collected, so no reasons for choices were given, which lowers validity, as we cannot be sure position rather than preference caused the choice.

4(a) Turley and Milliman (2000) reviewed 60 studies on the effects of store atmosphere on shopper behaviour. They concluded that it is possible to create atmospheres that influence consumer spending, and they grouped atmospheric variables into five categories: external variables (e.g. storefront, window displays, parking), general interior variables (e.g. music, lighting, scent, colour, temperature), layout and design variables (e.g. the placing of fixtures and space allocation), point of purchase and decoration variables (e.g. product displays and signs) and human variables (e.g. crowding and the appearance of employees).

Finlay et al. (2006) investigated two casino designs. The Friedman model has low ceilings, a maze-like layout and gaming equipment as the main decoration, so gamblers are surrounded by machines. The Kranes playground model has high ceilings, open space and natural elements, designed to be pleasant and restorative. Emotional reactions to the casinos were measured, and Kranes-type casinos had significantly higher ratings than Friedman-type casinos on pleasure and restoration.

Vrechopoulos (2004) investigated which virtual store layouts have the most positive effects on consumers. In a laboratory experiment, 120 participants in Greece and the UK were given a planned shopping task and money to spend in a virtual grocery store, with the layout (freeform, grid or racetrack) as the manipulated variable. Layout significantly affected online consumer behaviour: the grid was the easiest to use, the freeform was the easiest for finding items on the list and the most entertaining, and the racetrack and freeform engaged consumers

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	for the longest.
4(b)	Generalisability is strong in Turley and Milliman, as their conclusions are based on 60 studies with many different consumers and settings. Finlay et al. investigated real casino designs, so their findings generalise well to real leisure environments. Vrechopoulos used participants in both the UK and Greece, which is good as it covers two cultures, but the results may not generalise beyond these, and the virtual store is only partly like everyday life: it applies to online shopping but not to walking around a real store. Vrechopoulos used a laboratory experiment, so there was good control and cause and effect can be established, but participants were given money and a set task, so there may be demand characteristics and they may not have shopped as they normally would with their own money. Much of the research uses self-reports, such as the emotional ratings in Finlay et al. These give insight into how people feel, but they may be affected by social desirability, for example gamblers not admitting they enjoy a maze-like casino. The research is useful. Retailers can use Turley and Milliman's variables, e.g. music and lighting, to raise spending, and online stores can choose a grid for ease of use or a freeform to keep shoppers browsing. However, there are ethical concerns: designing casinos to keep people gambling may encourage addiction. The research focuses on the situation (the design) and largely ignores individual differences, such as a shopper's mood or purpose, so it is situationally reductionist. Overall, the research is useful and fairly generalisable, but more field research in real stores would improve it.
	Psychology and health
5(a)	A Type I error (a false positive) is when a practitioner declares that a patient is ill

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	when they are actually well, for example diagnosing someone with schizophrenia when they are mentally healthy.
5(b)	Robinson and West (1992) studied 69 patients attending a genitourinary (GU) clinic in the north of the UK. The patients were randomly allocated to one of two conditions: completing their case history (e.g. symptoms, number of sexual partners, previous attendance) on a paper questionnaire or in a computerised interview. Following this, each patient was interviewed and assessed by the doctor and had a physical examination. The information patients disclosed on the computer or paper was then compared with the information recorded in the doctor's notes.
5(c)	One weakness is low generalisability. The study only looked at one type of illness, at one GU clinic in the north of the UK. Sexual health is an especially embarrassing topic, so patients may be more willing to disclose to a computer here than in other areas of medicine, such as heart disease. The information asked about may also be seen as inappropriate in other cultures, so there could be cultural bias, and the findings may not apply to patients in other countries. A second weakness is the reliability and validity of the data. The number of symptoms reported was counted from the case histories, and it is very difficult to reliably turn qualitative information such as a case history into quantitative data, so the researcher or practitioner could have counted symptoms differently for different patients. In addition, the data were self-reported, so patients may have shown social desirability bias, for example exaggerating or reducing the number of sexual partners. As there was no objective check on what was true, we cannot be sure which method produced the most accurate disclosure.
6(a)	Medical techniques: antidepressants such as SSRIs (e.g. fluoxetine) regulate

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serotonin in the brain and stabilise mood. Benzodiazepines are sedatives that increase the effect of the neurotransmitter GABA, which reduces activity in the brain, so they cause sedation, reduced anxiety and muscle relaxation.

Biofeedback: a device monitors a physical process such as muscle tension or heart rate and gives the patient immediate feedback, so they learn to relax and reduce it. Budzynski et al. (1969) randomly allocated patients with tension headaches to three groups, all told to relax their forehead muscle. The feedback group heard a tone that varied with muscle tension and tried to keep it low; one control group heard a constant low tone (irrelevant feedback) and the other had silence. Over five sessions, the feedback group showed a significant reduction in muscle tension compared with the other two groups, and fewer headaches.

Imagery: Bridge et al. (1988) carried out a randomised controlled trial with 154 women with cancer, of whom 139 completed a six-week programme. The control group was encouraged to talk about themselves, the relaxation group was taught to concentrate on individual muscle groups, and the relaxation plus imagery group also imagined a peaceful scene of their choice. Both treatment groups practised with tapes for at least 15 minutes a day. Mood, depression and anxiety on self-rating scales improved, most with relaxation plus imagery.

Preventing stress: Meichenbaum (1985) developed stress inoculation therapy, a form of CBT with three phases: conceptualisation (learning about stressors and their effects), skills acquisition and rehearsal (relaxation and problem solving) and application and follow through (practising them in real life).

6(b)

Experiments: Budzynski et al. and Bridge et al. used experiments with random allocation, so cause and effect can be established. Budzynski had two control groups (irrelevant feedback and silence), which gave good baseline comparisons and showed it was the feedback itself, not just relaxing or being attached to a device, that reduced muscle tension. Bridge et al. followed a standardised procedure

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with tapes, increasing reliability, although what the women did outside sessions varied, which lowers control. As these were medical studies with real patients, they have some ecological validity. However, patients knew they were in a study, so demand characteristics may have led them to report less stress.

Generalisability is limited, as Budzynski used a small sample with tension headaches and Bridge studied only women with cancer.

Bridge relied on self-rating scales, which may be affected by social desirability, whereas biofeedback gives objective physiological measurements.

Comparing techniques, medical treatments act quickly and need little effort, but benzodiazepines can cause dependence and side effects such as drowsiness, so they are less appropriate long term. They are also reductionist, treating only the symptoms. Biofeedback requires expensive equipment, while imagery is cheap and can be practised anywhere. Stress inoculation is more holistic, tackling the causes of stress and preventing it, but it needs time and motivation, so it may not suit everyone.

Overall, the experiments give good evidence that psychological techniques work, and the best choice depends on the patient.

Psychology and organisations

7(a) A token economy uses operant conditioning. Employees are given tokens or stamps as a reward for following safety guidelines or for working a period without a lost-time injury, and the tokens can be saved and exchanged for goods in a shop, so safe behaviour is reinforced and accidents are reduced.

7(b) Oldham and Brass (1979) studied 128 employees of a newspaper in the Midwest of the USA who were moved from a traditional office to an open-plan office. Questionnaires were given before the move and afterwards, measuring job

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	characteristics and satisfaction with work and with interpersonal relationships at work, and a small control group did not move. They found that employees' internal motivation and satisfaction with work and colleagues decreased after the move. Employees found it difficult to concentrate and complete tasks, and described the open-plan office as being like a "fishbowl" where it was impossible to have private conversations.
7(c)	One strength is the study's good validity because measures were taken at different times, before the move and again 9 and 18 weeks after it. Taking measures a while after the move is important, because the move itself may have been disruptive and stressful; 18 weeks gave employees time to settle into the new office, so the drop in satisfaction is more likely to be due to the open-plan design itself. The study also has good ecological validity, as the move was decided by the newspaper and not by the researchers. One weakness is the small control group of only 5 participants. Because the control group is so small, comparisons between employees who moved and those who did not are less valid, and we cannot be confident that the fall in satisfaction was caused by the open-plan office rather than by other changes at the newspaper at that time. In addition, it was one newspaper in one city in the USA, so the findings may not generalise to other organisations or countries.
8(a)	The Job Descriptive Index (Smith et al., 1969) is a questionnaire measuring job satisfaction in five areas: the work itself, pay, promotion prospects, supervision and co-workers. Employees answer each item with yes, no or cannot decide. Scores are compared with standardised norms based on data from a large sample of people, which are updated regularly. The Minnesota Satisfaction Questionnaire (Weiss et al., 1967) has a long version with 100 items and a short version with 20. It measures satisfaction with a range

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of aspects, including company policies, scope for advancement, security, independence, recognition, responsibility, variety and working conditions, using a Likert scale. The original scale ran from very satisfied, through neither satisfied nor dissatisfied, to very dissatisfied, but because results were skewed it was changed to not satisfied, somewhat satisfied, satisfied, very satisfied and extremely satisfied.

The Quality of Working Life (QWL) questionnaire (Walton, 1974) assesses the feelings employees have towards their jobs, colleagues and companies, and how these feelings affect the organisation's growth and profitability. It assesses factors such as job security, reward systems, pay levels and opportunities for growth, using a Likert scale, so the organisation can respond to employees' needs. Some of the language used is quite complex, e.g. remuneration, salubrity and polyvalence.

8(b) Psychometrics: all three measures are standardised psychometric self-reports, so they are reliable, as every employee answers the same questions in the same way. The JDI is valid because scores are compared with standardised norms from a large sample. They are easy to administer and give quantitative scores, so comparisons can be made, e.g. between departments, or before and after a restructuring of management.

However, psychometric measures can lack reliability if employees understand questions differently. The QWL uses complex words such as salubrity and polyvalence, which will be interpreted differently by employees. They can also lack validity due to social desirability: employees may want to appear satisfied, especially if they fear managers will see answers. Scores may reflect a temporary state, e.g. a recent conflict at work, so the same employee might score higher after it is resolved, lowering test-retest reliability.

As the measures collect only quantitative data, they lack depth and do not explain why an employee is dissatisfied. The JDI is especially limited with only three

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possible answers, whereas the MSQ Likert scale gives more detail, and was improved when its scale was changed to reduce skew.

The measures differ in reductionism. The JDI reduces satisfaction to five areas, while the MSQ long form and the QWL are more holistic, covering many aspects of work, although the 100-item MSQ is time-consuming.

There may be cultural bias, as the measures were developed in the USA, and items such as independence may not be valued in collectivist cultures.

Overall, they are useful for identifying problems, especially if combined with interviews.

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PSYCHOLOGY **9990/32**

Paper 3 Specialist Options: Theory **May/June 2023**

1 hour 30 minutes

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You must answer on the enclosed answer booklet.

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INSTRUCTIONS

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Psychology and abnormality

Answer **all** questions.

1 **(a)** For **one** specific phobia:

Identify **two** characteristics of this phobia. [2]

(b) Describe the psychoanalytic explanation of phobias (Freud, 1909). [4]

(c) Explain **one** strength and **one** weakness of the psychoanalytic explanation of phobias. [6]

2 **(a)** Describe the treatment and management of obsessive-compulsive and related disorders. [8]

(b) Evaluate the treatment and management of obsessive-compulsive and related disorders, including a discussion about reductionism versus holism. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Vrechopoulos (2004) investigated virtual interior layouts of grocery stores.

Outline the 'grid' store layout. You may include a diagram in your answer. [2]

(b) Describe the study by Guéguen et al. (2007) on music in open air markets. [4]

(c) Explain **two** strengths of the study by Guéguen et al. [6]

4 **(a)** Describe what psychologists have discovered about 'buying the product' (theory of planned behaviour, black box model, consumer decision model). [8]

(b) Evaluate what psychologists have discovered about 'buying the product' (theory of planned behaviour, black box model, consumer decision model), including a discussion about practical applications. [10]

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Psychology and health

Answer **all** questions.

5 **(a)** Explain what is meant by 'organic pain'. [2]

(b) The Wong-Baker rating scale is a measure of children's pain.

(i) Outline the Wong-Baker rating scale. You may include a diagram in your answer. [2]

(ii) Explain how this scale is used to measure children's pain. [2]

(c) One difference between the Wong-Baker scale and the McGill pain questionnaire is whether they are used with children or adults.

Explain **two** other differences between these pain measures. [6]

6 **(a)** Describe what psychologists have discovered about health promotion in schools, worksites and communities. [8]

(b) Evaluate what psychologists have discovered about health promotion in schools, worksites and communities, including a discussion of the longitudinal research method. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Group decision-making can lead to cognitive limitations and errors including sins of commission, sins of omission and sins of imprecision (Forsyth, 2006).

Explain what is meant by 'sins of commission'. [2]

(b) Describe Belbin's theory of team roles. [4]

(c) Explain **one** strength and **one** weakness of Belbin's theory of team roles. [6]

8 **(a)** Describe what psychologists have discovered about traditional and modern theories of leadership (universalist and behavioural theories, adaptive leadership, three levels of leadership). [8]

(b) Evaluate what psychologists have discovered about traditional and modern theories of leadership (universalist and behavioural theories, adaptive leadership, three levels of leadership), including a discussion about determinism versus free-will. [10]

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Question number

Answers for paper 9990/32

Psychology and abnormality

1(a) Blood phobia (haemophobia): an extreme and irrational fear of blood, which can extend to needles and injections. Seeing blood leads to an increase in heart rate followed by a drop in blood pressure, which can lead to fainting.

1(b) Freud said a phobia develops when a fear or anxiety is repressed into the unconscious to protect the ego. This is the result of unresolved conflict between the id and the superego, or of repressed urges of the id that are being denied. The ego uses defence mechanisms such as repression and displacement, so the anxiety is displaced onto an object or situation, which then becomes the phobic object. In the case of Little Hans, his Oedipal fear of his father (castration anxiety) was displaced onto horses, which reminded him of his father, so he developed a phobia of horses.

1(c) One strength is that the explanation is supported by case study evidence, especially Little Hans. The case study was in-depth and detailed, collecting qualitative data about Hans's fears, dreams and conversations over a long period, which gave rich support for the idea that his fear of horses was displaced fear of his father. The explanation also leads to psychodynamic treatment: if the unconscious conflict is resolved, the phobia should reduce, and Hans's phobia did disappear once his conflict was resolved.

One weakness is that the evidence the explanation is based on has problems.

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	Little Hans was a single case, so the findings cannot be generalised to other people with phobias. The information was collected by his father, a supporter of Freud, who may have asked leading questions and interpreted Hans's answers to fit the theory, so the evidence lacks validity. As unconscious processes cannot be observed, the explanation is also very difficult to test scientifically.
2(a)	Biomedical (SSRIs): the main drugs are selective serotonin reuptake inhibitors such as fluoxetine. They block the reuptake of serotonin into the presynaptic neuron, so serotonin has a greater chance of being absorbed by the postsynaptic neuron and serotonin levels increase. This lessens the anxiety caused by obsessive thoughts, so the patient has less need to carry out compulsions such as hand washing. Cognitive (Lovell et al., 2006): this study compared telephone and face to face CBT for OCD with 72 out-patients aged 16 to 65 from two treatment units in Manchester, UK. Both groups had 10 weekly sessions of exposure and response prevention. Patients created a hierarchy of fears and set weekly targets for exposure, starting with the lowest item, practising for an hour a day and recording progress on homework sheets. The telephone group had one face to face session, then eight weekly phone calls of up to 30 minutes, then a final face to face session. There were no significant differences at six months, so both were equally effective. CBT can also challenge faulty thinking, e.g. that hands must be washed repeatedly to stay safe from germs. Exposure and response prevention (Lehmkuhl et al., 2008): Jason was a 12-year-old boy with autism and OCD who had ten 50 minute CBT sessions over 16 weeks. He learned to identify feelings of distress and to use coping statements such as "I know that nothing bad will happen", and he kept a thought record. In exposure, he was gradually made to touch objects he had difficulty with, such as elevator buttons and door handles, starting at the bottom of his hierarchy, and exposures were repeated until he habituated. In response prevention he used coping

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statements instead of his compulsion and learned that his anxiety fell within a few minutes. His Y-BOCS score dropped from 18 to 3.

2(b) The biomedical treatment is reductionist, as it focuses only on the biochemical cause of OCD and treats it by raising serotonin. It ignores the cognitive causes, such as faulty beliefs about germs, so it may be less effective, and symptoms often return when the drug is stopped. Exposure and response prevention is more holistic, as it acknowledges both cognitive and biological factors: when the patient is exposed to the feared stimulus, they experience a strong fight or flight response, but as time passes and nothing bad happens this response lessens, and their thoughts about the stimulus change. However, it focuses more on cognition and behaviour than on biochemistry, so it is not fully holistic.

The treatments differ in effectiveness and appropriateness. SSRIs are quick and easy to take, but can have side effects such as nausea. ERP is effective, as Jason's Y-BOCS score fell from 18 to 3, but exposure causes high anxiety at first, so patients may drop out, which raises ethical issues. Lovell et al. showed that telephone CBT is as effective as face to face, which reduces cost and makes therapy accessible to patients who live far away.

The evidence has weaknesses. Lehmkuhl et al. was a case study of one boy with autism, so it may not generalise to adults, and Lovell et al. relied on self-report inventories that could be affected by social desirability. However, Lovell et al. was a large, controlled study with a six month follow-up, which increases validity.

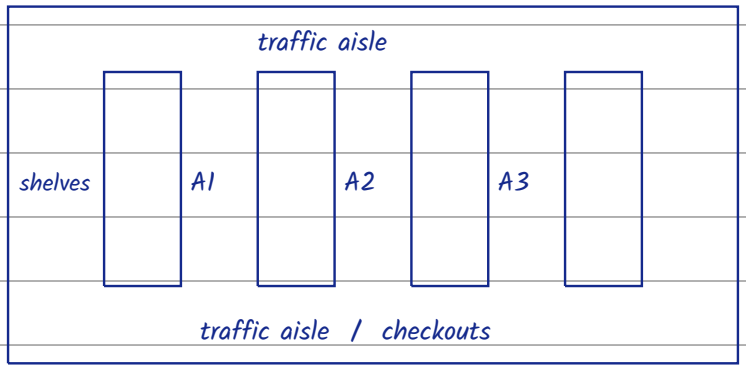
On determinism, the biomedical approach is deterministic, whereas CBT gives the patient free will to change.

Overall, combining SSRIs with ERP is likely to be the most effective treatment.

Psychology and consumer behaviour

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3(a) A grid layout is a rectangular arrangement of displays, with long aisles that run parallel to one another and distinct traffic aisles at the ends, as in a traditional supermarket.



A = aisle (aisles 1, 2 and 3 run parallel between the rows of shelves)

3(b) Guéguen et al. (2007) carried out a field experiment at a stall in an open air market. 240 customers (154 men and 86 women) were selected as they visited the stall and were randomly assigned to either a music or a no music condition. The researchers recorded the time each customer spent at the stall, whether they bought at least one item and the amount spent. When music was played, customers stayed longer at the stall, were more likely to buy at least one item and some spent more.

3(c) One strength is high ecological validity. The study took place in a natural environment, a real open air market stall, and music playing while shopping at a market is a normal occurrence. Customers did not know they were in a study, so there were no demand characteristics or social desirability, and their time at the stall and purchases reflect how they would really behave, so the results are valid. A second strength is that customers were randomly assigned to the music and no music conditions. This helps to prevent researcher bias, as the researcher could not

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	choose, for example, customers who looked more likely to buy for the music condition. Together with the large sample of 240 with a good mix of men and women, this means differences in time and spending can be more confidently attributed to the music. As quantitative data were collected, the two conditions could be directly compared, and the findings are useful for stallholders who want customers to stay longer and spend more.
4(a)	Theory of planned behaviour (Ajzen, 1991): a consumer's behaviour is a function of their intention to perform it, e.g. intending to buy a new phone; the stronger the intention, the more likely the purchase. Intention is based on attitude towards the product (e.g. a positive attitude to a brand), subjective norm (what the consumer thinks others think, e.g. good reviews) and perceived behavioural control (e.g. having the money). These are determined by behavioural, normative and control beliefs. The theory allows us to predict intentions and purchases of a single brand and choices between brands. Black box (stimulus-response) model: a behaviourist model that assumes consumers respond to stimuli such as marketing, price and the store environment. The black box is how the consumer thinks about and is affected by these stimuli, depending on their personal characteristics. Retailers can design a pleasant environment so the consumer responds positively and buys the product (the response). Consumer decision model: a five point decision process. 1 Need or problem recognition; 2 search for information, internal (attitudes about the product, brand or price) and external (e.g. reviews); 3 evaluation of alternatives; 4 purchase; 5 post-purchase reflection, e.g. whether the product met expectations, which can lead to a positive or negative heuristic about the brand. The decision is influenced by stimuli processed with memories of previous experiences, and by external variables: environmental influences (culture, social class, personal influence, family,

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situation) and individual differences (consumer resources, motivation and involvement, knowledge, attitudes, personality, values and lifestyle).

4(b) Practical applications: all the models are useful because they explain consumers' decision-making, so companies can influence those decisions. Using the theory of planned behaviour, a company can be environmentally friendly or support good causes so customers develop a positive attitude to the brand, and have both an online and a physical shop with good parking and opening hours to increase perceived behavioural control. Using the black box model, a retailer can improve stimuli such as the store environment, packaging and price. Using the consumer decision model, advertising can create a need, and information should be easy to find, e.g. a website with a comparison tool. However, these can be expensive, e.g. redesigning a store, and may not work if consumers' personal characteristics in the black box lead them to respond differently.

The theory of planned behaviour has been supported by Ajzen's meta-analysis, increasing its validity, but intentions do not always lead to purchases, for example if a consumer buys on impulse.

The models differ in holism. The black box model is reductionist, as it ignores the thinking inside the box, whereas the consumer decision model is more holistic, including environmental and individual influences.

The consumer decision model considers both individual and situational explanations, while the black box model is mainly situational.

There may be cultural bias, as the models were developed in Western cultures, although the consumer decision model includes culture as an influence.

Overall, the models are useful, especially when combined.

Psychology and health

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5(a)	Organic pain is pain that has a physical cause rather than a psychological cause. It is the result of tissue injury, pressure, excessive stimulation or damage, e.g. the pain of a broken leg.
5(b)(i)	The Wong-Baker FACES rating scale is a visual analogue scale made up of a row of six cartoon faces, ranging from a happy, smiling face at 0 (no hurt) to a crying face at 10 (hurts worst), scored 0, 2, 4, 6, 8, 10.  0 2 4 6 8 10 no hurt hurts worst
5(b)(ii)	It is a self-report: the child is shown the faces and chooses the one that matches how much they are hurting, which gives a score for the intensity of their pain. It can be used with children aged 3 and over, as they do not need to be able to read or describe their pain in words.
5(c)	One difference is the number of parts. The McGill pain questionnaire has four parts: where the pain is, what the pain feels like, how the pain changes over time and how strong the pain is. The Wong-Baker scale has just one part, the faces, which only measures the intensity of the pain. As a result, McGill also asks about the location of the pain using a diagram of the body, whereas Wong-Baker does not, so McGill gives a much fuller picture of the patient's pain, but takes much longer to complete. A second difference is the type of data and how the patient responds. McGill gives the patient a selection of words to choose from to describe the quality of the

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pain, e.g. shooting or pulsing, and includes open questions such as "What kind of things relieve your pain?", so it collects qualitative data. Wong-Baker gives the patient a series of faces to choose from and produces only quantitative data on a 0 to 10 scale. This makes Wong-Baker quicker and easier to compare between patients, but McGill gives more detail.

6(a) Schools (Tapper et al., 2003): in Food Dudes at home, 5 to 6 year olds watched Food Dudes videos and were given rewards such as stickers, pens and erasers for eating target amounts. The combination of peer modelling and rewards was very effective: fruit eaten rose from 4% to 100% and vegetables from 1% to 83%. In a nursery study with 26 two to four year olds, the Jess and Jarvis video raised fruit eaten at snack time from 30% to 71%, and to 79% at a 15 month follow-up, while lunchtime rose from 17% to 76%. In a whole school programme with 4 to 11 year olds, children watched six videos over 16 days with rewards and letters. Fruit and vegetable consumption increased greatly in all three schools, for boys and girls, and remained higher after four months.

Worksites (Fox et al., 1987): workers at two open-pit mines earned stamps for working without lost-time injuries, avoiding equipment-damaging accidents and making safety suggestions; no stamps were given if they or co-workers were injured or failed to report an accident. Stamps could be exchanged for thousands of items in a shop. There were large reductions in days lost to injury and in costs, which far exceeded the cost of the token economy, and improvements were maintained over several years.

Communities (Farquhar et al., 1985): the Five City Project was a long-term field study of health education to prevent cardiovascular disease. Two treatment cities (Salinas and Monterey, California) received a six-year education programme through the media and classes, compared with control cities. Randomly selected participants aged 12 to 74 completed questionnaires and physiological measures

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such as blood pressure. In the treatment cities there was a 4% reduction in blood pressure, 13% reduction in smoking and a 10% decrease in coronary heart disease risk score.

6(b) Longitudinal method: all three studies are longitudinal. Their strength is that they show changes in behaviour over time and whether the changes last. Tapper's nursery study showed fruit consumption was 79% at a 15 month follow-up, the whole school programme had a four month follow-up, Fox et al. lasted about 15 years and Farquhar et al. followed the cities for six years and more. This shows health promotion produces lasting change, not just short-term effects. Introducing new foods slowly over time also helped consumption increase. However, longitudinal studies need a lot of time, money and commitment, and there is participant attrition, e.g. families moving away from the cities, which can bias the sample if those who stay are more health-conscious. Over a long period, other events, e.g. national anti-smoking campaigns, may affect results.

The studies have high ecological validity as they took place in real schools, mines and cities, and Farquhar used random sampling and control cities, increasing validity.

Generalisability is limited: Fox studied only miners in the USA and Tapper children in UK schools.

Self-reports in Farquhar's questionnaires may be affected by social desirability, although physiological measures such as blood pressure are more objective.

Using children raises ethical issues, as consent is needed from parents, and rewards may mean children eat fruit only for the reward.

Overall, the research is useful and shows lasting change.

Psychology and organisations

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7(a)	Sins of commission are errors in the use of information by the group making the decision. For example, belief perseverance, where the group uses information during the decision-making process that has already been shown to be inaccurate.
7(b)	Belbin said a successful team will contain people willing to take on different roles. He identified nine team roles in three categories. Thought-oriented (cerebral) roles: the plant (a creative problem solver), the monitor evaluator (a strategic thinker who makes impartial judgements) and the specialist (provides expert skills and knowledge). Action-oriented roles: the shaper (a risk taker who thrives on pressure and drives the team), the implementer (turns ideas into practical, workable strategies) and the completer finisher (finds errors and finishes projects on time). People-oriented roles: the coordinator (a good chairperson who delegates), the teamworker (helps the team work together and avoids friction) and the resource investigator (explores opportunities and finds ideas for the team).
7(c)	One strength is that the theory has practical applications. It gives a clear outline of the roles that are needed for a successful team, so organisations can use it to build teams with a balance of thinkers, doers and people-focused members. The Belbin Team Inventory can be used alongside it to identify which roles best suit each employee, so managers can assign people to roles they will be effective in, which should improve team performance. One weakness is that the theory is less useful to small organisations with fewer than nine employees, or to organisations whose employees cannot fill all the roles. For example, a computer programming company may have mainly cerebral employees because of the nature of the work, and few people to fill the action and people roles. It is also somewhat reductionist, as it can assume employees occupy just one role, when people may excel at different roles at different times depending on motivation or conflict in the team. If the team inventory is

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inaccurate, e.g. due to social desirability, employees may be given inappropriate roles.

8(a) Universalist theories look at the characteristics and personal qualities of great leaders. Woods (1913) proposed the Great Man theory, arguing that leaders are born, not made. Such leaders can be seen as charismatic or transformational, inspiring others with vision and self-confidence.

Behavioural theories come from the Ohio State and Michigan studies. The Ohio study found two categories: initiating structure (coordinating and delegating tasks, planning to meet deadlines and monitoring quality) and consideration (listening to workers, concern for their feelings, self-esteem and motivation). The Michigan studies found task-oriented leaders, who focus on tasks, planning and clear goals and deadlines, and relationship-oriented leaders, who prioritise the well-being of the workforce and relationships between workers.

Adaptive leadership (Heifetz, 1997) says leaders must inspire workers to tackle whatever challenges arise and adapt their style to the organisation's current situation. Its principles include: get on the balcony (have an overview of the company), regulate distress (help workers with distress caused by change), maintain disciplined attention (listen to all viewpoints), give the work back to the people (involve staff in decisions) and protect voices of leadership from below (encourage open discussion with managers).

Three levels of leadership (Scouller, 2011): public leadership is influencing more than one person, e.g. organising and delegating to a group; private leadership is influencing one individual, e.g. building trust and helping them set goals; personal leadership is the leader's own psychological, moral and technical skills, e.g. time management. Scouller argued personal leadership is the most powerful, as it underpins the others.

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8(b)

The universalist Great Man theory is deterministic, as it suggests a person is born with the qualities of a great leader rather than using free will to become one. However, there is an element of free will, as people with these qualities still choose to become leaders. Adaptive leadership shows more free will, as the leader chooses to adapt their style to the economic climate, although it is somewhat deterministic because that climate is set by outside factors. Scouller's levels are also somewhat deterministic, as the type of interaction is decided by the situation, but the leader has free will to adjust their behaviour and develop personal leadership.

This links to nature versus nurture. The Great Man theory is on the nature side, whereas behavioural theories take a nurture view: if leadership is behaviour, it can be learned through training.

The theories have practical applications. Behavioural theories suggest training managers to balance task and relationship orientation, and adaptive leadership is useful in fast-changing markets. The Great Man theory has few applications other than selecting leaders.

The universalist theory is reductionist, reducing leadership to fixed traits and ignoring the situation, whereas adaptive leadership and Scouller's model are more holistic, considering the leader, the team and the situation.

There may be cultural bias, as most theories and the Ohio and Michigan studies come from the USA, and in collectivist cultures a more paternalistic style may be expected.

Overall, modern theories are more useful and allow more free will.

Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/33**

Paper 3 Specialist Options: Theory **May/June 2023**

1 hour 30 minutes

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You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **four** questions in total:
  - Answer questions from **two** options.
  - For each chosen option, answer **all** questions.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.

INFORMATION

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

This document has **4** pages. Any blank pages are indicated.

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Psychology and abnormality

Answer **all** questions.

1 **(a)** Explain what is meant by 'pyromania'. [2]

(b) Describe the study by Glover (2011) that used covert sensitisation as a treatment for kleptomania. [4]

(c) Explain **one** strength and **one** weakness of the study by Glover. [6]

2 **(a)** Describe explanations of depression. [8]

(b) Evaluate explanations of depression, including a discussion about reductionism versus holism. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Identify **two** shopper movement patterns from the study by Gil et al. (2009). [2]

(b) Dayan and Bar-Hillel (2011) conducted a laboratory study and a field study on primacy, recency and menu item position.

Outline any **two** results from these studies by Dayan and Bar-Hillel. [4]

(c) Discuss the validity of these studies by Dayan and Bar-Hillel. [6]

4 **(a)** Describe what psychologists have discovered about retail/leisure environment design (retail store architecture, leisure environments, store interior layout). [8]

(b) Evaluate what psychologists have discovered about retail/leisure environment design (retail store architecture, leisure environments, store interior layout), including a discussion about generalisability. [10]

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Psychology and health

Answer **all** questions.

5 **(a)** Practitioners may make type I or type II errors in diagnosis.

Outline **one** of these types of error, including an example in your answer. [2]

(b) Describe the procedure of the study by Robinson and West (1992) on disclosure of information to a practitioner. [4]

(c) Explain **two** weaknesses of the study by Robinson and West. [6]

6 **(a)** Describe what psychologists have discovered about the management of stress. [8]

(b) Evaluate what psychologists have discovered about the management of stress, including a discussion of experiments. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Outline how a token economy can be used to reduce accidents at work. [2]

(b) Describe the study by Oldham and Brass (1979) on open plan offices. [4]

(c) Explain **one** strength and **one** weakness of the study by Oldham and Brass. [6]

8 **(a)** Describe what psychologists have discovered about measuring job satisfaction. [8]

(b) Evaluate what psychologists have discovered about measuring job satisfaction, including a discussion about psychometrics. [10]

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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.

Question number

Answers for paper 9990/33

Psychology and abnormality

1(a) Pyromania is an impulse control disorder involving an obsessive desire to set fire to things. The person has deliberately and intentionally set fires on more than one occasion, feels tension or heightened arousal before setting the fire and relief once it is done, and is fascinated by fire.

1(b) Glover (2011) carried out a case study of a 56-year-old woman with kleptomania. After interviewing the patient, it was decided to pair imagery of nausea and vomiting with the act of stealing. She was given four therapy sessions, and muscle relaxation was used in the first two sessions to enhance her visualisation. She imagined herself about to steal and then feeling sick and vomiting, so she learned to associate the unpleasant sensation with the stealing behaviour. She also practised the imagery outside the sessions whenever she felt tempted to steal. At a 19 month follow-up, her kleptomania had greatly reduced.

1(c) One strength is that the study shows covert sensitisation has a long-term benefit. Because the woman was followed up 19 months after therapy and her stealing had greatly reduced, we can be more confident that the treatment produced a lasting change and not just a short-term improvement. As it was an in-depth case study with qualitative data, Glover also understood her urges in detail and could tailor the imagery (nausea and vomiting) to her, and she used it when she was really tempted, so the study has good ecological validity.

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One weakness is poor generalisability. There was only one participant, a 56-year-old woman, so the findings may not apply to men, to younger people with kleptomania or to other impulse control disorders such as pyromania or gambling. In addition, the outcome relied on her own report, so she may have shown social desirability bias, telling Glover she was stealing less in order to please him, and no quantitative data were collected, so her improvement cannot be objectively compared before and after therapy.

2(a) Biological explanations say depression has a genetic and neurochemical basis. Oruc et al. (1997) studied patients with bipolar disorder and found that sixteen of them had at least one first-degree relative with a major affective disorder, suggesting it runs in families. They also found that polymorphisms in serotonin-related genes could be responsible for an increased risk of developing bipolar disorder, but only in the females in the sample. The neurochemical explanation is that depression is caused by low levels of serotonin in the brain, which leads to low mood.

The cognitive explanation (Beck, 1979) says depression is caused by faulty processing of information. Beck described the cognitive triad: negative views about oneself, about the world and about the future. These negative thoughts influence each other, so the depressed person spirals into lower and lower moods.

Learned helplessness is where a person who repeatedly experiences unpleasant situations they cannot control learns that they are helpless, so they no longer try to make their life or mood better. Seligman (1988) applied this through attributional style. The Attributional Style Questionnaire was given to 39 unipolar depressed patients at the beginning and end of cognitive therapy and at a one-year follow-up, and to 12 bipolar patients during a depressed episode. A pessimistic explanatory style for bad events (internal, stable and global) correlated with the severity of depression. As therapy progressed, depression reduced as the explanatory style became less pessimistic, and this improvement remained at the

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one-year follow-up.

2(b) The genetic and neurochemical explanation is reductionist, as it reduces depression to genes and low serotonin and does not consider any other causes. Not everyone with a first-degree relative with depression develops it, so other factors must be involved. The cognitive explanation is more holistic, as it considers the complex thought processes in the cognitive triad, although it could still be seen as reductionist because it ignores genetic factors and learning. Learned helplessness is also more holistic than the biological explanation, as it looks at how depression is learned from life experiences, but it is environmentally reductionist because it ignores biology. A diathesis-stress view, combining a genetic vulnerability with negative thinking and uncontrollable life events, would be the most holistic.

The explanations also differ on nature versus nurture. The biological explanation is on the nature side, while learned helplessness and attributional style are on the nurture side, as the pessimistic style is learned. The biological explanation is also deterministic, suggesting a person with the genes cannot avoid depression, whereas Beck allows more free will because faulty thinking can be changed.

The evidence has weaknesses. Oruc et al. studied bipolar patients only, and the gene link was found only in females, so it may not generalise to unipolar depression or to males. Seligman's study is correlational, so a pessimistic style may be a symptom of depression rather than its cause, and it relied on self-reports, which may be affected by social desirability.

However, the explanations have useful applications. The neurochemical explanation led to SSRIs and the cognitive explanation led to CBT, which challenges the negative triad. Seligman showed that depression reduced as explanatory style became less pessimistic, supporting cognitive therapy.

Overall, each explanation is valid but partial, so combining them gives the fullest account.

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Psychology and consumer behaviour

3(a) Two shopper movement patterns are the short trip and the round trip. (Others identified were the central trip and the wave trip.)

3(b) In the laboratory study, participants were more likely to choose items placed at the extremes of a menu category, that is the beginning or the end, rather than in the middle. The advantage of being placed at the beginning or end was 56%, and this was found even for unpopular items, which had an advantage of 54%.
In the field study in a café in Tel Aviv, there was a larger gain when an item moved from the exact middle of a category to the extreme end (55%) than when it moved from the near-middle to the near-end (51%, which was not significant). There was also an advantage of being placed in the top half of the category (59%).

3(c) The two studies differ in ecological validity. The first was a laboratory study in which participants chose from menus without really ordering and eating the food, so it has low ecological validity. The second was a field study in a real café where customers paid for real food, so it has high ecological validity, and because it found similar primacy and recency effects, it supports the validity of the laboratory findings.
There may be demand characteristics in the laboratory study, as participants knew they were in a study. However, although they would know it was about menu choice, they were unlikely to guess it was about menu position, so social desirability is reduced. In the field study, customers did not know they were being studied, so their choices were natural and valid.
Population validity is mixed. The sample of 240 in the laboratory study was large,

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and the café customers were a varied range of people. However, the first study used only students, and the second used one café in one city in Israel, so the findings may not apply to other cultures or restaurants.

Finally, only quantitative data on choices were collected, so no reasons for choices were given, which lowers validity, as we cannot be sure position rather than preference caused the choice.

4(a) Turley and Milliman (2000) reviewed 60 studies on the effects of store atmosphere on shopper behaviour. They concluded that it is possible to create atmospheres that influence consumer spending, and they grouped atmospheric variables into five categories: external variables (e.g. storefront, window displays, parking), general interior variables (e.g. music, lighting, scent, colour, temperature), layout and design variables (e.g. the placing of fixtures and space allocation), point of purchase and decoration variables (e.g. product displays and signs) and human variables (e.g. crowding and the appearance of employees).

Finlay et al. (2006) investigated two casino designs. The Friedman model has low ceilings, a maze-like layout and gaming equipment as the main decoration, so gamblers are surrounded by machines. The Kranes playground model has high ceilings, open space and natural elements, designed to be pleasant and restorative. Emotional reactions to the casinos were measured, and Kranes-type casinos had significantly higher ratings than Friedman-type casinos on pleasure and restoration.

Vrechopoulos (2004) investigated which virtual store layouts have the most positive effects on consumers. In a laboratory experiment, 120 participants in Greece and the UK were given a planned shopping task and money to spend in a virtual grocery store, with the layout (freeform, grid or racetrack) as the manipulated variable. Layout significantly affected online consumer behaviour: the grid was the easiest to use, the freeform was the easiest for finding items on the list and the most entertaining, and the racetrack and freeform engaged consumers

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	for the longest.
4(b)	Generalisability is strong in Turley and Milliman, as their conclusions are based on 60 studies with many different consumers and settings. Finlay et al. investigated real casino designs, so their findings generalise well to real leisure environments. Vrechopoulos used participants in both the UK and Greece, which is good as it covers two cultures, but the results may not generalise beyond these, and the virtual store is only partly like everyday life: it applies to online shopping but not to walking around a real store. Vrechopoulos used a laboratory experiment, so there was good control and cause and effect can be established, but participants were given money and a set task, so there may be demand characteristics and they may not have shopped as they normally would with their own money. Much of the research uses self-reports, such as the emotional ratings in Finlay et al. These give insight into how people feel, but they may be affected by social desirability, for example gamblers not admitting they enjoy a maze-like casino. The research is useful. Retailers can use Turley and Milliman's variables, e.g. music and lighting, to raise spending, and online stores can choose a grid for ease of use or a freeform to keep shoppers browsing. However, there are ethical concerns: designing casinos to keep people gambling may encourage addiction. The research focuses on the situation (the design) and largely ignores individual differences, such as a shopper's mood or purpose, so it is situationally reductionist. Overall, the research is useful and fairly generalisable, but more field research in real stores would improve it.
	Psychology and health
5(a)	A Type I error (a false positive) is when a practitioner declares that a patient is ill

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when they are actually well, for example diagnosing someone with schizophrenia when they are mentally healthy.

5(b) Robinson and West (1992) studied 69 patients attending a genitourinary (GU) clinic in the north of the UK. The patients were randomly allocated to one of two conditions: completing their case history (e.g. symptoms, number of sexual partners, previous attendance) on a paper questionnaire or in a computerised interview. Following this, each patient was interviewed and assessed by the doctor and had a physical examination. The information patients disclosed on the computer or paper was then compared with the information recorded in the doctor's notes.

5(c) One weakness is low generalisability. The study only looked at one type of illness, at one GU clinic in the north of the UK. Sexual health is an especially embarrassing topic, so patients may be more willing to disclose to a computer here than in other areas of medicine, such as heart disease. The information asked about may also be seen as inappropriate in other cultures, so there could be cultural bias, and the findings may not apply to patients in other countries.
A second weakness is the reliability and validity of the data. The number of symptoms reported was counted from the case histories, and it is very difficult to reliably turn qualitative information such as a case history into quantitative data, so the researcher or practitioner could have counted symptoms differently for different patients. In addition, the data were self-reported, so patients may have shown social desirability bias, for example exaggerating or reducing the number of sexual partners. As there was no objective check on what was true, we cannot be sure which method produced the most accurate disclosure.

6(a) Medical techniques: antidepressants such as SSRIs (e.g. fluoxetine) regulate

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serotonin in the brain and stabilise mood. Benzodiazepines are sedatives that increase the effect of the neurotransmitter GABA, which reduces activity in the brain, so they cause sedation, reduced anxiety and muscle relaxation.

Biofeedback: a device monitors a physical process such as muscle tension or heart rate and gives the patient immediate feedback, so they learn to relax and reduce it. Budzynski et al. (1969) randomly allocated patients with tension headaches to three groups, all told to relax their forehead muscle. The feedback group heard a tone that varied with muscle tension and tried to keep it low; one control group heard a constant low tone (irrelevant feedback) and the other had silence. Over five sessions, the feedback group showed a significant reduction in muscle tension compared with the other two groups, and fewer headaches.

Imagery: Bridge et al. (1988) carried out a randomised controlled trial with 154 women with cancer, of whom 139 completed a six-week programme. The control group was encouraged to talk about themselves, the relaxation group was taught to concentrate on individual muscle groups, and the relaxation plus imagery group also imagined a peaceful scene of their choice. Both treatment groups practised with tapes for at least 15 minutes a day. Mood, depression and anxiety on self-rating scales improved, most with relaxation plus imagery.

Preventing stress: Meichenbaum (1985) developed stress inoculation therapy, a form of CBT with three phases: conceptualisation (learning about stressors and their effects), skills acquisition and rehearsal (relaxation and problem solving) and application and follow through (practising them in real life).

6(b)

Experiments: Budzynski et al. and Bridge et al. used experiments with random allocation, so cause and effect can be established. Budzynski had two control groups (irrelevant feedback and silence), which gave good baseline comparisons and showed it was the feedback itself, not just relaxing or being attached to a device, that reduced muscle tension. Bridge et al. followed a standardised procedure

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with tapes, increasing reliability, although what the women did outside sessions varied, which lowers control. As these were medical studies with real patients, they have some ecological validity. However, patients knew they were in a study, so demand characteristics may have led them to report less stress.

Generalisability is limited, as Budzynski used a small sample with tension headaches and Bridge studied only women with cancer.

Bridge relied on self-rating scales, which may be affected by social desirability, whereas biofeedback gives objective physiological measurements.

Comparing techniques, medical treatments act quickly and need little effort, but benzodiazepines can cause dependence and side effects such as drowsiness, so they are less appropriate long term. They are also reductionist, treating only the symptoms. Biofeedback requires expensive equipment, while imagery is cheap and can be practised anywhere. Stress inoculation is more holistic, tackling the causes of stress and preventing it, but it needs time and motivation, so it may not suit everyone.

Overall, the experiments give good evidence that psychological techniques work, and the best choice depends on the patient.

Psychology and organisations

7(a) A token economy uses operant conditioning. Employees are given tokens or stamps as a reward for following safety guidelines or for working a period without a lost-time injury, and the tokens can be saved and exchanged for goods in a shop, so safe behaviour is reinforced and accidents are reduced.

7(b) Oldham and Brass (1979) studied 128 employees of a newspaper in the Midwest of the USA who were moved from a traditional office to an open-plan office. Questionnaires were given before the move and afterwards, measuring job

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	characteristics and satisfaction with work and with interpersonal relationships at work, and a small control group did not move. They found that employees' internal motivation and satisfaction with work and colleagues decreased after the move. Employees found it difficult to concentrate and complete tasks, and described the open-plan office as being like a "fishbowl" where it was impossible to have private conversations.
7(c)	One strength is the study's good validity because measures were taken at different times, before the move and again 9 and 18 weeks after it. Taking measures a while after the move is important, because the move itself may have been disruptive and stressful; 18 weeks gave employees time to settle into the new office, so the drop in satisfaction is more likely to be due to the open-plan design itself. The study also has good ecological validity, as the move was decided by the newspaper and not by the researchers. One weakness is the small control group of only 5 participants. Because the control group is so small, comparisons between employees who moved and those who did not are less valid, and we cannot be confident that the fall in satisfaction was caused by the open-plan office rather than by other changes at the newspaper at that time. In addition, it was one newspaper in one city in the USA, so the findings may not generalise to other organisations or countries.
8(a)	The Job Descriptive Index (Smith et al., 1969) is a questionnaire measuring job satisfaction in five areas: the work itself, pay, promotion prospects, supervision and co-workers. Employees answer each item with yes, no or cannot decide. Scores are compared with standardised norms based on data from a large sample of people, which are updated regularly. The Minnesota Satisfaction Questionnaire (Weiss et al., 1967) has a long version with 100 items and a short version with 20. It measures satisfaction with a range

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of aspects, including company policies, scope for advancement, security, independence, recognition, responsibility, variety and working conditions, using a Likert scale. The original scale ran from very satisfied, through neither satisfied nor dissatisfied, to very dissatisfied, but because results were skewed it was changed to not satisfied, somewhat satisfied, satisfied, very satisfied and extremely satisfied.

The Quality of Working Life (QWL) questionnaire (Walton, 1974) assesses the feelings employees have towards their jobs, colleagues and companies, and how these feelings affect the organisation's growth and profitability. It assesses factors such as job security, reward systems, pay levels and opportunities for growth, using a Likert scale, so the organisation can respond to employees' needs. Some of the language used is quite complex, e.g. remuneration, salubrity and polyvalence.

8(b) Psychometrics: all three measures are standardised psychometric self-reports, so they are reliable, as every employee answers the same questions in the same way. The JDI is valid because scores are compared with standardised norms from a large sample. They are easy to administer and give quantitative scores, so comparisons can be made, e.g. between departments, or before and after a restructuring of management.

However, psychometric measures can lack reliability if employees understand questions differently. The QWL uses complex words such as salubrity and polyvalence, which will be interpreted differently by employees. They can also lack validity due to social desirability: employees may want to appear satisfied, especially if they fear managers will see answers. Scores may reflect a temporary state, e.g. a recent conflict at work, so the same employee might score higher after it is resolved, lowering test-retest reliability.

As the measures collect only quantitative data, they lack depth and do not explain why an employee is dissatisfied. The JDI is especially limited with only three

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possible answers, whereas the MSQ Likert scale gives more detail, and was improved when its scale was changed to reduce skew.

The measures differ in reductionism. The JDI reduces satisfaction to five areas, while the MSQ long form and the QWL are more holistic, covering many aspects of work, although the 100-item MSQ is time-consuming.

There may be cultural bias, as the measures were developed in the USA, and items such as independence may not be valued in collectivist cultures.

Overall, they are useful for identifying problems, especially if combined with interviews.