Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/41**

Paper 4 Specialist Options: Application **October/November 2023**

1 hour 30 minutes

2194868340

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.
    - Section A: answer **two** questions.
    - Section B: answer **one** question.
    - Section C: answer **one** question.
- 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 **8** pages. Any blank pages are indicated.

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Section A

You must answer **two** questions from this section.
Answer all the parts for the two questions you choose.

Psychology and abnormality

1 One explanation of bipolar disorder is that it is genetic. The study by Oruc et al. (1997) selected 42 patients with bipolar disorder. Sixteen of these patients had a first-degree relative with a history of bipolar disorder. All patients had a clinical interview and their DNA was analysed.

(a) Explain what is meant by the term 'bipolar disorder'. [2]

(b) Outline **two** findings from the study by Oruc et al. [4]

(c) Outline **one** explanation for depression, other than a biological explanation. [4]

(d) Discuss the strengths and weaknesses of using clinical interviews to gather data about the genetic explanation of depression. You should include a conclusion in your answer. [5]

Psychology and consumer behaviour

2 To investigate the topic of retail store architecture, Turley and Milliman (2000) reviewed sixty studies of atmospheric effects on shoppers. They referred to five 'atmospheric variables', including layout and design variables, and point-of-purchase and decoration variables.

(a) Explain what is meant by a 'review of studies' as conducted by Turley and Milliman. [2]

(b) **(i)** Suggest **one** 'point-of-purchase' variable. [2]

(ii) Explain how the variable you suggested in **(b)(i)** relates to **one** model of the effects of ambience. [2]

(c) Suggest **two** ways in which the effect of atmospheric variables on shoppers could be measured. [4]

(d) Discuss the strengths and weaknesses of using field experiments to investigate the effect of atmospheric variables on shoppers. You should include a conclusion in your answer. [5]

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Psychology and health

3 Many people experience chronic pain. Some people use medical techniques (biochemical) such as drugs, psychological techniques, or alternative techniques to manage (and/or control) their pain. Medical techniques can also be used to control acute pain.

(a) Explain what is meant by chronic pain, using an example. [2]

(b) Outline **two** ways in which medical techniques can be used to control acute pain. [4]

(c) Suggest **two** differences between acupuncture and stimulation therapy/TENS used to manage pain. [4]

(d) Discuss the strengths and weaknesses of using 'psychological techniques' to manage pain. You should include a conclusion in your answer. [5]

Psychology and organisations

4 Groupthink is what happens when group cohesion causes a group, such as a management team, to make a decision without any critical evaluation. Janis (1971) identifies eight 'symptoms' (features) of groupthink.

(a) Give **one** real-life example of groupthink. [2]

(b) Explain **two** 'symptoms' of groupthink as identified by Janis. [4]

(c) Suggest **two** strategies that can be used to avoid groupthink. [4]

(d) Discuss the strengths and weaknesses of using observations to assess groupthink in a management team. You should include a conclusion in your answer. [5]

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Section B

You must answer **one** question from this section.

Psychology and abnormality

5 **(a)** Design a study to investigate the long-term effectiveness of systematic desensitisation in the treatment of anxiety disorders. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

Psychology and consumer behaviour

6 McCarthy's marketing mix model includes four concepts related to advertising: product, price, place, promotion (The 4 Ps).

(a) Design a study using a questionnaire to investigate which of these four concepts has **most** effect on consumer behaviour. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

Psychology and health

7 **(a)** Design a study to investigate age differences in stages of delay, as proposed by Safer, before seeking medical treatment. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

Psychology and organisations

8 **(a)** Design an experiment to investigate levels of concentration in workers in different types of office design. [10]

(b) Explain the psychological and methodological evidence on which your experiment is based. [8]

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Section C

You must answer **one** question from this section.

Psychology and abnormality

9 *'Psychometric measures used to assess anxiety disorders, such as the Generalised Anxiety Disorder assessment (GAD-7), provide therapists with no useful information.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and consumer behaviour

10 *'If playing one type of music at one open air market stall increases the amount of money spent, this finding can be generalised to all open air market stalls.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and health

11 *'Practitioner style (doctor or patient-centred) is irrelevant. What is important is the way in which a practitioner is dressed.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and organisations

12 *'All accidents at work are caused by errors in operator-machine systems (system errors); **not** by other factors, such as human error.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

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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 9990/41

Section A

Psychology and abnormality

1(a) Bipolar disorder, also known as manic depression, is a mood disorder characterised by extreme mood swings from one 'pole' to the other: episodes of elevated mood (mania), with high energy and excitement, alternate with periods of depression.

1(b) First, no significant associations were found between the serotonin gene polymorphisms studied and bipolar disorder in the total patient sample, so there was no overall difference between the bipolar patients and the control group. Second, polymorphisms in the serotonin receptor gene (5-HTR2c) and the serotonin transporter gene (5-HTT) were observed in the female patients, which suggests an increased genetic susceptibility to bipolar disorder in women.

1(c) The cognitive explanation (Beck, 1979) says that depression is caused by faulty, irrational thinking rather than biology. People react differently to the same unpleasant events because some have negative automatic thoughts (NATs) that pop into their mind without effort, e.g. 'I always fail'.
These thoughts form the negative cognitive triad: unrealistically negative views about the self ('I am worthless'), the world ('everyone is against me') and the future ('nothing will ever get better'). They come from negative schemas learned in childhood and are kept going by cognitive biases such as overgeneralisation (one

Question number	
	failure means total failure) and magnification of small problems. Because the person interprets events negatively, they feel hopeless and depression develops.
1(d)	A strength is that the participant knows their own family relationships and health history, e.g. which relatives have had depression, whereas the practitioner does not, so an interview is the only way to gather this information for a genetic study. A second strength is that the interview is flexible: the participant can explain answers fully and the practitioner can ask follow-up questions, use verbal and non-verbal skills, and add other tests such as a DNA sample. A weakness is that the participant may not tell the truth, or may exaggerate or underplay a relative's illness, e.g. because of the stigma of mental illness in the family, so family data may be inaccurate. A second weakness is that a clinical interview is subjective, as the practitioner interprets the answers, and participants may not know the terminology, e.g. whether an uncle was 'depressed' or had bipolar disorder, so diagnoses of relatives may be wrong. In conclusion, clinical interviews are essential for collecting family histories, but for a genetic explanation they should be combined with objective evidence such as DNA analysis, as Oruc et al. did, because self-report alone cannot show a genetic cause.
	Psychology and consumer behaviour
2(a)	A review of studies collects together and analyses the findings of many previously published research studies on one topic, here atmospheric effects on shopping behaviour. Turley and Milliman constructed a comprehensive table of the empirical studies, summarising the findings of each, so that overall conclusions about the effects of atmospherics on shoppers could be drawn.

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2(b)(i)	Signs and cards at the point of purchase, such as a sign at the till showing a sale price. Signs combined with sale price information displayed at the point of purchase are effective at increasing sales.
2(b)(ii)	Mehrabian and Russell's (1974) PAD model says that the environment causes emotional states of pleasure, arousal and dominance, which lead to approach or avoidance behaviour. A bright 'sale price' sign arouses attention, gives pleasure at finding a bargain and makes the shopper feel in control (dominance) of an informed choice, so they show approach behaviour and buy the item.
2(c)	First, a covert observation in the store: an observer, or CCTV, records the number of shoppers who enter the store, how long they remain and how many items they pick up, when a variable such as music or lighting is present compared with when it is absent. Second, a questionnaire with closed questions given to shoppers as they leave: they rate on a 1 to 7 scale how pleasant, how stimulating (arousing) and how in control (dominant) they felt in the store, and how much they spent, so the PAD responses to the atmosphere can be measured.
2(d)	A strength is that a field experiment still has an IV (e.g. music versus no music), a DV (e.g. amount spent) and controls, so cause and effect between the atmospheric variable and shopping can be established. A second strength is that shoppers usually do not know they are in a study, so they behave naturally, and because shopping takes place in real stores, the findings have high ecological validity, unlike a laboratory. A weakness is that extraneous variables, such as how crowded the store is, the weather or special offers, are much harder to control than in a laboratory, so they

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may affect spending instead of the IV.

A second weakness is that field experiments usually gather only quantitative data, such as sales, so they do not explain why shoppers did or did not buy. Also isolating one IV is reductionist, as many atmospheric variables act together.

In conclusion, field experiments are the most suitable method because they test atmospherics where shopping really happens, but they should be run across several stores and combined with interviews so that the effect of uncontrolled variables can be ruled out and reasons understood.

Psychology and health

3(a) Chronic pain is pain that is long lasting, continuing for months or years (usually 3 months or more), beyond the normal time for healing. An example is the pain of arthritis.

3(b) First, peripherally acting analgesics such as aspirin, paracetamol or ibuprofen, which are 'over the counter' medicines taken for a headache or toothache. They work at the site of the injury, e.g. by reducing the chemicals (prostaglandins) that make nerve endings sensitive.

Second, local anaesthetics. A mild one can be a cream rubbed onto the painful site, and a strong one is an injection into the local area, e.g. before stitching a wound or extracting a tooth. It blocks nerve signals from that area so the patient feels no pain but stays conscious.

3(c) First, acupuncture is administered by a qualified practitioner who knows exactly where to insert the needles, whereas TENS can be administered by the person themselves at home, without needing anyone with experience.

Second, acupuncture uses fine needles inserted into specific points on the body

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and is used to relieve pain directly, and can even prevent pain as an alternative to an anaesthetic, whereas TENS sends mild electrical pulses through pads on the skin which distract the person from the original pain (closing the pain 'gate'), and would never be used to prevent pain during surgery.

3(d) A strength is that people control the treatment themselves: they can choose when to use a technique such as attention diversion or non-pain imagery, which gives them a sense of control over the pain.

A second strength is that psychological techniques can be used any place and any time, at no cost, and have no side effects or risk of addiction, unlike drugs such as opioids.

A weakness is that people may prefer a medical treatment given by a medically qualified person, so they may not believe a psychological technique will work and may not use it.

A second weakness is that people have to be active for the technique to work and may not be good at it. It takes time and practice to become proficient, so it is not a quick 'take a drug' solution, especially for severe pain.

In conclusion, psychological techniques are valuable for long-term chronic pain because they are safe and self-controlled, but for severe or acute pain they work best alongside medical techniques rather than replacing them.

Psychology and organisations

4(a) The Bay of Pigs invasion (1961). President Kennedy's advisers agreed to a plan to invade Cuba with a small force of Cuban exiles. No one in the cohesive group challenged the plan's obvious weaknesses, and the invasion was a disaster.

4(b) First, the illusion of invulnerability: members believe that nothing can go wrong

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because the group is so strong, so they become overly optimistic and take extreme risks.

Second, the illusion of unanimity: members believe that everyone in the group agrees, so silence is taken as agreement, and members who respect each other assume they will automatically agree, so doubts are never voiced.

4(c)

First, appoint a devil's advocate: one member is given the role of deliberately challenging every proposal and pointing out weaknesses, so critical evaluation always takes place.

Second, hold a second-chance meeting: after a decision is reached, the team meets again before acting so that each member can express any remaining doubts, rather than rushing to a quick solution.

4(d)

A strength is that a covert observation means the team members do not know they are being observed, so they behave naturally, giving accurate information about how they behave when making a decision as a team, e.g. whether dissenters are pressured.

A second strength is that meetings can be recorded on CCTV and observed by more than one observer, so recordings can be re-run and inter-rater reliability checked using behaviour categories such as Janis's symptoms.

A weakness is that if a participant observation is conducted by a member of the team, behaviours might be missed because the observer is involved in the discussion and may be affected by groupthink.

A second weakness is that a structured observation with fixed categories may not account for new or unexpected behaviour, so some features of groupthink, such as self-censorship, which happens in people's heads, might be missed. Covert observation also raises ethical issues of consent.

In conclusion, observation is useful because groupthink is a group behaviour that

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can be seen in meetings, but it should be recorded and checked by two observers and combined with interviews to detect hidden symptoms such as self-censorship.

Section B

Psychology and abnormality

5(a) Aim: to investigate the long-term effectiveness of systematic desensitisation (SD) for a specific phobia of spiders. Hypothesis: participants treated with SD will have lower fear scores than a control group 2 years after treatment.

Method: a longitudinal field experiment in a clinic. The IV is the treatment: SD or relaxation training only (control). Independent measures design with random allocation to groups.

Sample: 40 adults aged 18 to 60 diagnosed with a specific phobia of spiders using DSM-5, recruited by volunteer sampling from GP referrals.

Procedure: the SD group receive 8 weekly one-hour sessions. They learn deep muscle relaxation and breathing, build an anxiety hierarchy with the therapist (from the word 'spider' to holding a spider) and work up it while relaxed. The control group receive 8 weekly relaxation sessions only.

DVs: (1) a self-report fear rating from 0 (no fear) to 10 (extreme fear) when a spider is shown in a tank; (2) a behavioural approach test: how many of 10 marked steps towards the spider the participant takes. Both are measured before therapy, at the end, and at 6, 12 and 24 months.

Controls: the same trained therapist, hierarchy steps, spider and room for all; the person measuring the DVs does not know which group a participant is in (single blind).

Data and analysis: quantitative scores, shown as mean fear ratings over time on a line graph. A Mann-Whitney U test compares the groups at 24 months and a

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	Wilcoxon test compares before and after.
	Ethics: informed consent, right to withdraw at any point, confidentiality, and the control group are offered SD after the study.
5(b)	Psychological evidence: SD (Wolpe, 1958) is based on classical conditioning. A phobia is a learned association between a stimulus and fear, as when Little Albert (Watson and Rayner, 1920) learned to fear a white rat. SD uses reciprocal inhibition: a person cannot be relaxed and anxious at the same time. So the patient is trained in deep muscle relaxation and breathing, then an anxiety hierarchy is built from least fearful (imagining a spider) to most fearful (in vivo contact). When relaxed at one step, the next is presented until the person is desensitised. This is why my SD group follow exactly these steps.
	Methodological evidence: a longitudinal design is used because the question is about long-term effectiveness, and a phobia may relapse after therapy ends. The relaxation-only control group shows whether the hierarchy, not just relaxation or attention, causes improvement, and random allocation removes participant variables.
	Two DVs are used: self-report gives the person's feelings, and the approach test gives objective behaviour, increasing validity. The single-blind measurer reduces researcher bias, and standardised procedures allow replication, increasing reliability.
	Offering SD to the control group afterwards ensures they are not denied effective treatment.
	Psychology and consumer behaviour
6(a)	Aim: to investigate which of McCarthy's 4 Ps (product, price, place, promotion) has most effect on consumer behaviour. Hypothesis: there will be a difference in the ratings given to the four Ps.
	Sample: 120 adult shoppers in a shopping mall, selected by stratified sampling to

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include equal numbers of males and females and three age groups (18 to 30, 31 to 50, over 50).

Method: a self-report questionnaire completed on paper in the mall, about a recent purchase of a pair of trainers. It has closed questions and some open questions.

Example closed questions, rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree): 'I bought it because of the quality and brand of the product' (product); 'I bought it because it was on special offer' (price); 'I bought it because the shop was easy to get to' (place); 'I bought it because I saw an advert for it' (promotion). There are 3 statements for each P, in a random order, and a final question asks participants to rank the four Ps from 1 (most important) to 4.

Example open question: 'Explain the main reason why you bought these trainers.'

Data and analysis: quantitative scores are totalled for each P (3 to 15), mean scores are shown on a bar chart and compared with a Friedman test. Qualitative answers are analysed by content analysis into the four Ps.

Ethics: informed consent, anonymous and confidential answers, right to withdraw, short debrief.

6(b)

Psychological evidence: McCarthy's marketing mix model proposes four concepts. Product includes the basic product and the extended product with added qualities such as packaging, brand name, service and guarantee. Price is the amount the customer pays, including discounts, special offers and sale prices. Place is the location where the product is sold, such as a retail park, shopping mall or online. Promotion is all the communications the company makes about the product, such as advertising. So I wrote three statements for each P, using these exact aspects, e.g. 'special offer' for price, so that the questionnaire measures each concept validly.

Methodological evidence: a questionnaire allows a large sample to be asked the same questions quickly, so results can be generalised. Closed Likert questions give

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quantitative data, so the four Ps can be compared statistically, and the ranking question provides a check on the ratings (internal validity). Three statements per P and random order reduce order effects and response bias, increasing reliability, which could be checked by test-retest. Open questions add qualitative detail about reasons. Stratified sampling makes the sample representative of shoppers of different ages and genders. Asking about one recent product makes answers specific and less affected by memory.

Psychology and health

7(a) Aim: to investigate age differences in Safer's three stages of delay before seeking medical treatment. Hypothesis: there will be a difference between age groups in appraisal, illness and utilisation delay.

Method: a structured interview with closed and open questions, a quasi-experiment with the natural IV of age group: 18 to 35, 36 to 59 and 60 and over (independent measures). The DVs are the number of days in each stage of delay.

Sample: 90 patients (30 in each age group) waiting to see a doctor at three GP clinics, selected by opportunity sampling, with a new symptom for this visit.

Procedure: a trained interviewer asks each patient privately in a side room: 'How many days was it from first noticing your symptom to deciding you were ill?' (appraisal delay); 'How many days from deciding you were ill to deciding to see a doctor?' (illness delay); 'How many days from deciding to see a doctor to today's appointment?' (utilisation delay). Open questions follow, e.g. 'Why did you wait before making the appointment?'

Controls: the same questions in the same order, same interviewer and setting for all patients.

Data and analysis: quantitative data are mean days per stage for each age group, shown on a bar chart and compared with a Kruskal-Wallis test; qualitative reasons

Question number

are analysed by thematic analysis.

Ethics: informed consent, confidentiality of medical details, right to withdraw, and the interview does not delay the patient's appointment.

7(b) Psychological evidence: Safer et al. (1979) interviewed 93 patients waiting to see a doctor about why they delayed seeking help and identified three stages. Appraisal delay is the number of days from the first symptom to the patient deciding they are ill. Illness delay is the days from deciding they are ill until deciding to seek medical attention. Utilisation delay is the days from deciding to seek medical attention until the actual appointment. My three main questions measure exactly these three stages. Age may matter because older people may see symptoms as part of getting older, lengthening appraisal delay, while younger people may delay because of work or study.

Methodological evidence: an interview was used, as by Safer, because the interviewer can explain questions and the patient can explain reasons, and patients waiting in a clinic have a recent, real experience of delay, so recall is better. Closed questions give quantitative days that can be compared, and open questions give qualitative reasons for delay, giving more valid explanations. Age is a natural IV so independent measures are needed. A standardised script and one interviewer reduce interviewer bias and increase reliability. Opportunity sampling in clinics is practical, and using three clinics makes the sample more representative.

Psychology and organisations

8(a) Aim: to investigate whether office design affects workers' concentration.

Hypothesis: workers will concentrate better (make fewer errors) in a private office than in an open-plan office.

Method: a field experiment in a large company that has both an open-plan office

Question number	
	and private (cellular) offices. The IV is office design: open-plan or private.
	Repeated measures design: each worker works for one day in each office, counterbalanced (half do open-plan first).
	Sample: 30 office workers from the company, selected by random sampling from the staff list.
	DV: concentration, measured by a standard proofreading task: a 2-page document with 40 planted errors, completed in 15 minutes at 11am on each day. The score is the number of errors found. Workers also rate 'How well could you concentrate today?' from 1 (not at all) to 10 (completely).
	Controls: two equivalent versions of the document with the same number and type of errors; same time of day, same day of the week, same desk and computer type; standardised instructions.
	Data and analysis: quantitative scores; mean errors found in each office shown on a bar chart and compared with a Wilcoxon signed-ranks test.
	Ethics: informed consent, scores kept confidential from managers, right to withdraw, debrief.
8(b)	Psychological evidence: Oldham and Brass (1979) studied employees of a newspaper company who moved from a conventional office into an open-plan office. They took a number of measures before and after the move and found decreases in work satisfaction, interpersonal satisfaction and internal work motivation. In interviews, employees described the new office as a 'fishbowl', 'cage' or 'warehouse', reflecting an inability to concentrate, develop close friendships and complete their work. My study tests this directly by measuring concentration in open-plan and private offices.
	Methodological evidence: a field experiment in a real company gives high ecological validity, as the workers are in their real offices, while an IV, DV and controls allow cause and effect to be established. Repeated measures removes participant

Question number

variables such as ability, and counterbalancing and two equivalent documents control order effects such as practice. The proofreading score is an objective, quantitative operationalisation of concentration, and the self-rating adds the workers' own experience, as Oldham and Brass used interviews. Random sampling makes the sample representative of the staff. Keeping scores from managers protects workers from harm.

Section C

Psychology and abnormality

9 Psychometric measures are standardised questionnaires that give a score for a disorder. The GAD-7 (Spitzer et al., 2006) has 7 items about the last two weeks, such as 'worrying too much about different things', each scored from 0 (not at all) to 3 (nearly every day), giving a total of 0 to 21; scores of 5, 10 and 15 indicate mild, moderate and severe anxiety. The BIPI (blood-injection phobia inventory) asks about cognitive, physiological and behavioural responses to situations such as having an injection.

I disagree with the statement, because these measures give therapists very useful information. They indicate the severity of a disorder, which helps a therapist decide on treatment, e.g. medication for a severe GAD-7 score. The BIPI highlights specific features, showing whether a patient's problem is mainly physiological (e.g. fainting) or cognitive, so therapy can target it. Because they give quantitative data, scores can be compared with others with the same disorder and with the patient's own earlier scores, so progress during therapy can be measured objectively. They are quick, standardised and reliable, which removes the subjectivity of the therapist's judgement.

However, there are arguments for the statement. Talking to a therapist in a

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clinical interview may reveal more than any test, such as the causes of the worry and how it affects the person's life, which a 7-item score cannot. Rating scales may not represent what the person really thinks: they may choose a middle or neutral option. People may not be honest, e.g. underplaying symptoms because of social desirability or stigma. Also, psychometric measures assume that people with a disorder are similar, so they are nomothetic and less individualistic, and they are reductionist, reducing a complex experience to one number. The scale has fixed questions, so unusual symptoms may be missed.

In conclusion, I largely disagree. Measures such as the GAD-7 provide useful information on severity and progress that therapists need, but they are not sufficient alone; they are most useful when combined with a clinical interview that explains the meaning behind the score.

Psychology and consumer behaviour

10 Guéguen et al. (2007) conducted a field experiment at a stall in an open air market in a town in France, comparing days when music was played at the stall with days when no music was played. Music had a positive effect on shoppers' behaviour at the stall, such as more purchases.

There are reasons to agree. Large numbers of people shop at open air markets all over the world, and playing music is a common way of relaxing, entertaining and attracting customers everywhere, so the same effect would be expected. As a field experiment, the IV (music) was manipulated and other variables controlled, so the cause of the increase is known, and the study can be replicated at other stalls. Other evidence also shows music increases sales: North et al. (2003) found that classical music in a restaurant increased spending, Milliman (1982) found slow tempo music in a supermarket increased sales, and North et al. (1999) found French music increased sales of French wine. As it took place in a real market, it

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also has high ecological validity.

However, there are stronger reasons to disagree, as the word 'all' is too extreme. The location of the study, a town in France, might not generalise to other countries and cultures. The type of music, which was joyful and lively, might be specific to that place and not liked elsewhere. The music was chosen for its appropriateness for the sale of toys and trinkets, so it may not generalise to stalls selling other items, such as fish or vegetables; North et al. (1999) showed the effect depends on the fit between music and product. The stall was one stall, so individual factors such as the seller and the goods may have mattered. Other variables in open air markets, such as weather, noise from other stalls and crowding, differ between markets, and some shoppers dislike music, so individual differences mean the effect will vary.

In conclusion, I disagree. The finding that music can increase spending is supported by other studies, but one study at one stall cannot be generalised to all stalls, because the effect depends on the type of music, the products sold, the culture and the shoppers; it would need replicating at different markets first.

Psychology and health

11 Practitioner style is how a doctor interacts with a patient. Byrne and Long (1976) analysed around 2,500 recorded consultations and identified a doctor-centred style, where the doctor asks closed questions and makes the decisions, and a patient-centred style, where the doctor listens, asks open questions and involves the patient. Dress is non-verbal communication: McKinstry and Wang (1991) showed patients photos of doctors in different clothes and found a preference for formally dressed doctors, such as a suit or white coat, especially among older patients.

There are some reasons to agree. McKinstry and Wang showed that dress affects

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patients' confidence in the doctor, and if the doctor is dressed appropriately, patients will trust what is said, so style may matter less. Many patients simply want to present their symptoms, get a diagnosis and treatment and leave, so a chatty style is unimportant. If the patient understands the medical terminology, they understand their illness and treatment whatever the style.

However, there are stronger reasons to disagree. Savage and Armstrong (1990) found that patients at a London practice who received a directing (doctor-centred) style were more satisfied than those who received a sharing style, especially those with a physical illness, which shows that style is very relevant to satisfaction. Some patients prefer a patient-centred approach and others a doctor-centred one, so matching style to the patient matters more than dress. Verbal communication also matters: McKinlay (1975) found doctors used terms patients did not understand, and Ley (1988) showed that patients understand and remember little of what doctors say, so a patient-centred style that checks understanding is crucial for adherence. A doctor's knowledge, skills and the way they interact matter far more than clothes, and McKinstry and Wang's patients only judged photos, so the study lacks ecological validity.

In conclusion, I disagree. Dress may affect a first impression, but practitioner style affects satisfaction, understanding and therefore adherence, so it is far from irrelevant; the best practitioner adapts their style to the patient and dresses appropriately.

Psychology and organisations

12 Operator-machine systems involve a human operator receiving information from a machine through displays and acting on it using controls. Errors can come from the system, such as poorly designed displays or controls, or from human error. Riggio (1990) outlines four types of human error: errors of omission (failing to do

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something), commission (doing something wrong), sequence errors (doing things in the wrong order) and timing errors (too fast or too slow).

There are some reasons to agree. Some accidents are clearly system errors. At Three Mile Island (1979) the control room was so poorly designed that the system was unmanageable: important warning lights were hidden or confusing, so operators could not understand what was happening. Machines can have lights that are too dim, buzzers that are too quiet and controls that are not user-friendly, so even a careful operator will make mistakes. If a design leads to substitution errors (pressing the wrong control) or breaks motion stereotypes, it could be argued that the system, not the person, is at fault.

However, there are strong reasons to disagree with 'all'. Many accidents are due to human error caused by tiredness and fatigue, alcohol or drugs, or an accident-prone personality. More errors happen during the night 'graveyard' shift, because humans are vulnerable when their circadian rhythms are disrupted, e.g. Gold et al. (1992) found that nurses working rotating shifts reported more accidents and errors than nurses on day shifts. Fox et al. (1987) reduced accidents in open-cast mines using a token economy that rewarded safe behaviour, which shows that human behaviour, not just the system, causes accidents. Most accidents are a combination of both: the operator-machine system never works flawlessly, and a fault becomes an accident when a tired or poorly trained human fails to respond. Blaming only the system is reductionist and situational, ignoring individual factors.

In conclusion, I disagree. System errors cause some accidents, but most result from an interaction of human and system errors, so the best way to reduce accidents is to design user-friendly systems and also reduce human error through training, safe shift patterns and rewards for safe behaviour.

Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/42**

Paper 4 Specialist Options: Application **October/November 2023**

1 hour 30 minutes

4923156810

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.
    - Section A: answer **two** questions.
    - Section B: answer **one** question.
    - Section C: answer **one** question.
- 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 **8** pages. Any blank pages are indicated.

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Section A

You must answer **two** questions from this section.
Answer all the parts for the two questions you choose.

Psychology and abnormality

1 Generalised anxiety is a disorder that can be caused by a wide range of situations or events, rather than one specific event. Whereas for phobias, it is possible to have a specific phobia, such as an animal phobia. Generalised anxiety can be measured using the GAD-7.

(a) Outline **two** characteristics of generalised anxiety, other than it being caused by a wide range of situations or events, rather than one specific event. [2]

(b) Explain how the GAD-7 measures generalised anxiety. [4]

(c) Outline **two** case studies that investigated a child with an animal phobia. [4]

(d) Discuss the strengths and weaknesses of using psychometric tests, such as the GAD-7, to measure generalised anxiety. You should include a conclusion in your answer. [5]

Psychology and consumer behaviour

2 Eye-tracking is the technique of using scientific equipment to measure eye movements. Atalay et al. (2012) investigated the central gaze cascade effect using both laboratory and 'offline'/real-life contexts. They used eye-tracking to study whether the shelf position of an item affected whether it was chosen by participants.

(a) Explain what is meant by the term 'central gaze cascade effect' in this study. [2]

(b) Suggest **two** strengths of using eye-tracking to gather data in this study. [4]

(c) **(i)** Explain how Study 2 was conducted in an 'offline'/real-life context. [2]

(ii) Explain **one** finding from Study 2. [2]

(d) Discuss the strengths and weaknesses of using laboratory experiments to gather data on consumer product choice. You should include a conclusion in your answer. [5]

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Psychology and health

3 It is possible that doctors use medical terminology that patients do not understand. McKinlay (1975) conducted a study into the words which the doctors used in a maternity hospital. Thirteen words that could be misunderstood were used in the study. Patients, categorised as 'utiliser' and 'under-utiliser', were interviewed and their qualitative answers were recorded.

(a) Explain how the participants' knowledge of these thirteen words was assessed in the interview. [2]

(b) Outline **two** findings from this study. [4]

(c) **(i)** Explain **one** strength of gathering qualitative data in this study. [2]

(ii) Suggest how the reliability of the data in this study could be assessed. [2]

(d) Discuss the strengths and weaknesses of using face-to-face interviews to gather data about patient medical knowledge. You should include a conclusion in your answer. [5]

Psychology and organisations

4 Sabotage quotes from workers:

Ron: 'When I worked in a car factory, I would put a banana in a door panel. The new car would smell for weeks.'

John: 'When at work in a factory, I would force a wire basket into the machinery. It gave us a 20-minute break while it was fixed.'

Giacalone and Rosenfeld (1987) conducted a study using a questionnaire with a 7-point scale. They classified sabotage into different methods/forms (actions workers used to sabotage) and different reasons (why workers sabotaged).

(a) Identify **two** reasons for sabotage as identified by Giacalone and Rosenfeld. [2]

(b) Suggest **two** reasons why the findings of this study **cannot** be generalised. [4]

(c) Suggest **two** ways in which sabotage could be investigated, other than by questionnaire. [4]

(d) Discuss the strengths and weaknesses of using closed questions to gather data from workers about sabotage in their organisation. You should include a conclusion in your answer. [5]

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Section B

You must answer **one** question from this section.

Psychology and abnormality

5 **(a)** Design a study using a questionnaire to investigate the frequency of characteristics of addiction in a group of individuals diagnosed with a gambling disorder. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

Psychology and consumer behaviour

6 Menu 'eye magnets' include the font size and font colour of the menu items.

(a) Design an experiment to investigate which eye magnet leads to the **most** increased orders. [10]

(b) Explain the psychological and methodological evidence on which your experiment is based. [8]

Psychology and health

7 Lau et al. (1990) studied beliefs about health change in adolescents using questionnaires.

(a) Design a longitudinal study using an interview to investigate beliefs about health change in adults. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

Psychology and organisations

8 **(a)** Design a study using a questionnaire to investigate which 'hygiene' and 'motivator' factors (Herzberg, 1959) are **most** likely to cause job satisfaction/job dissatisfaction. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

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Section C

You must answer **one** question from this section.

Psychology and abnormality

9 *'A case study of a person with an impulse control disorder, such as kleptomania, will reveal more about the characteristics of the disorder than any other method.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and consumer behaviour

10 *'If space between restaurant tables is too small it will always cause overload, arousal and behaviour constraint in customers.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and health

11 *'Disclosure of information to a computer will one day remove the need for diagnosis by a doctor.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and organisations

12 *'Scouller's levels of leadership theory is reductionist, as are all leadership theories.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

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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 9990/42

Section A

Psychology and abnormality

1(a) Excessive, uncontrollable and often irrational worry that is present on most days and interferes with daily functioning.

Physical symptoms such as muscle tension and trembling, sweating and an increased heart rate.

1(b) The GAD-7 is a self-report scale with 7 items (problems), such as 'worrying too much about different things' and 'feeling nervous, anxious or on edge'. The person says how often they have been bothered by each problem over the last two weeks on a 4-point scale from 0 (not at all) to 3 (nearly every day). The scores are added to give a total out of a maximum of 21, and scores of 5, 10 and 15 are the cut-offs for mild, moderate and severe anxiety.

1(c) Little Albert (Watson and Rayner, 1920): an 11-month-old baby was classically conditioned to fear a white rat. The rat (neutral stimulus) was paired with a loud noise made by striking a steel bar (unconditioned stimulus) until the rat alone produced fear, which generalised to similar things such as a rabbit and a fur coat.

Little Hans (Freud, 1909): a 5-year-old boy with a phobia of horses. Freud explained it through the Oedipus complex: Hans feared his father would castrate him for desiring his mother, and this fear was displaced onto horses, whose black

Question number	
	blinkers and muzzles reminded him of his father's glasses and moustache.
1(d)	A strength is that a psychometric test such as the GAD-7 produces quantitative data, a score out of 21, which allows comparison between one person and another and of the same person before and after treatment. A second strength is that the subjectivity of a clinical interview is removed, as every person answers the same standardised questions, and they can complete it quickly in their own time. A weakness is that it is still self-report, so a person may not answer truthfully about their anxiety; they may give socially desirable answers, e.g. scoring 0 on worrying because they do not want to seem weak. A second weakness is that the person may not understand the terminology or the scale, and the 7 fixed items do not show why the person is anxious, so the score gives no explanation of their situation. In conclusion, psychometric tests such as the GAD-7 are useful as a quick screening tool to measure severity, but because they rely on honest self-report, a diagnosis should be confirmed by a clinical interview.
	Psychology and consumer behaviour
2(a)	The central gaze cascade effect is progressively increasing visual attention to the central option in an array as the decision continues, so the central item is more likely to be chosen. In this study, participants looking at a 3 × 3 matrix of brands (such as vitamins) looked more at the central brand and chose it more often.
2(b)	First, the data recorded are objective: where a person looks, and for how long, is clear and unambiguous, e.g. the exact number of fixations on the central brand in the matrix is fact, not a participant's opinion.

Question number	
	Second, the scientific eye-tracking equipment is reliable: it records every participant's eye movements in exactly the same way, so the gaze on central and side brands can be measured consistently and compared across all participants.
2(c)(i)	Tangible products were used, positioned as they might be in a retail context: three fictitious brands of energy drink (Cebion, Niran and Viba) were placed on a horizontal shelf with filler products from other categories, and participants were asked to carefully review and choose one drink.
2(c)(ii)	The centrally located item within the product category was chosen more often, irrespective of which energy drink brand it was, which shows the preference for the central option is not an artefact of screen-based presentation.
2(d)	A strength is that a laboratory experiment has an IV (e.g. shelf position), a DV and controls, so cause and effect between product position and choice can be established. A second strength is that extraneous situational variables, such as lighting and other shoppers, can be controlled, and the DV can be operationalised precisely with scientific equipment such as an eye tracker, so accurate data on product choice is gathered. A weakness is that participants know they are in a study and may respond to demand characteristics, e.g. choosing more carefully than usual, and they may feel uncomfortable wearing equipment. A second weakness is that most consumer behaviour takes place in the real world, in busy stores with time pressure and real money, so choices made in a laboratory may lack ecological validity. In conclusion, laboratory experiments are best for finding precise causes of product choice, as Atalay et al. did, but findings should be tested in real-life settings, as

Question number	
	they did in Study 2, before being applied to stores.
	Psychology and health
3(a)	Interviews were face-to-face in the participant's home. Each word was first sounded out and then used in the context of a sentence, and the participant was asked what they thought it meant; their answers were recorded verbatim on a standard form.
3(b)	First, there was a consistently higher level of word comprehension among the utilisers than the under-utilisers, as rated blind and independently by two physicians. Second, the doctors consistently and markedly underestimated the level of word comprehension of their patients, including the lower working-class respondents, e.g. for words such as 'umbilical'.
3(c)(i)	The study is about the meaning of words, so qualitative data let each woman explain in detail, in her own words, what she understands by a word such as 'umbilical', showing her real level of understanding.
3(c)(ii)	Several judges could independently rate each participant's description of what a word such as 'umbilical' means as correct, adequate or inadequate, and their ratings could be correlated to check inter-rater reliability.
3(d)	A strength is that a face-to-face interview may make participants feel more comfortable, especially in their own home, so they are willing to explain what they know about their medical condition. A second strength is that a structured interview means that the same questions,

Question number

such as the same medical words, can be asked of all participants, so their knowledge can be compared.

A weakness is that a face-to-face interview may make some participants feel less comfortable, and they may give brief answers because they do not want to show their ignorance of medical terms.

A second weakness is that interviews take too much time, as each must be done individually, so only a small sample of patients can be included, reducing generalisability.

In conclusion, face-to-face interviews are the best way to find out what patients really understand, but the interviewer must reassure them that it is not a test of them, as McKinlay did, so that they do not hide their lack of knowledge.

Psychology and organisations

4(a) Revenge: the foreman or company deserved it.

Release of frustrations: e.g. just for fun or a laugh, as no one was hurt by the action.

4(b) First, the sample size was relatively small for a factory: there were only 38 workers, so their reasons may not represent all workers.

Second, they were all from one factory in one country: an electrical factory in the north-eastern United States, so the findings may not apply to other types of organisation, such as offices, or to workers in other cultures.

4(c) First, a semi-structured interview with workers, in private and anonymous, where they are allowed to expand on any of their sabotage experiences and explain why they did it, like Ron's banana in a door panel.

Second, a covert participant observation, where a researcher works on the

Question number	
	production line as a worker, so that actual sabotage behaviours, such as forcing objects into machinery to get a break, can be observed and recorded as they happen.
4(d)	A strength is that closed questions provide quantitative data, so statistics can be applied to compare different forms and reasons for sabotage, e.g. mean ratings of 'revenge' versus 'fun'. A second strength is that answers are fixed, so they are quick to complete and analyse, and a 7-point scale still provides a range of possible answers to show how strongly a worker agrees. A weakness is that workers can give false answers, e.g. denying sabotage because they fear being punished, and on a 7-point scale they can simply opt for the neutral mid-point. A second weakness is that workers who are willing to talk about why they sabotaged cannot do so with fixed-choice questions, so the reasons behind behaviour like John's are lost. In conclusion, closed questions are useful for comparing the frequency of reasons for sabotage across many workers, but because sabotage is sensitive, they should be anonymous and include some open questions so that workers can explain their reasons.
	Section B
	Psychology and abnormality
5(a)	Aim: to investigate how frequently individuals diagnosed with a gambling disorder experience each of Griffiths' six characteristics of addiction. Sample: 60 adults diagnosed with gambling disorder (DSM-5), recruited by

Question number	
	volunteer sampling through notices at three gambling treatment clinics and Gamblers Anonymous groups. Method: a self-report questionnaire completed privately on paper at the clinic, with 3 closed questions for each characteristic (18 in total, in a random order) and 2 open questions. Rating scale: each item is answered 'How often in the last month...?' on a 5-point scale: 0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often. Example questions: salience: 'How often did you think about gambling when doing other things?'; mood modification: 'How often did gambling give you a buzz or a high?'; tolerance: 'How often did you need to bet more to get the same excitement?'; withdrawal: 'How often did you feel irritable when you could not gamble?'; conflict: 'How often did gambling cause arguments with your family?'; relapse: 'How often did you go back to gambling after deciding to stop?'. Open question: 'Describe how gambling affects your daily life.' Data and analysis: each characteristic is scored 0 to 12; mean scores are shown on a bar chart to show which characteristic is most frequent. Open answers are analysed by thematic analysis. Ethics: informed consent, anonymity (no names), right to withdraw, and contact details of support services in case answering causes distress.
5(b)	Psychological evidence: Griffiths (2005) outlines six characteristics of addiction. Salience is when the activity becomes the most important in the person's life and dominates their thinking, feelings (cravings) and behaviour. Mood modification is the subjective experience, such as a 'buzz' or 'high'. Tolerance is when increasing amounts of the activity are needed to achieve the former effects. Withdrawal symptoms are unpleasant feelings or physical effects when the activity is stopped or reduced. Conflict is between the addict and those around them (interpersonal) or within themselves (intrapsychic). Relapse is the tendency to revert to earlier

Question number

patterns of the activity. I wrote three questions on each, using these definitions, so the questionnaire validly measures all six.

Methodological evidence: a questionnaire allows a large sample to be asked identical questions, and being private and anonymous it reduces social desirability on embarrassing topics such as conflict with family. The frequency scale gives quantitative data, matching the aim of measuring frequency, so characteristics can be compared and ranked. Three items per characteristic and a random order increase reliability, which can be checked by split-half or test-retest. Open questions add qualitative detail, increasing validity. Using people already diagnosed means all participants genuinely have the disorder. Support details protect vulnerable participants from harm.

Psychology and consumer behaviour

6(a) Aim: to investigate which menu eye magnet, larger font size or coloured font, leads to the greatest increase in orders of a menu item. Hypothesis: there will be a difference in the number of orders of a target dish between the three menu conditions.

Method: a field experiment in a restaurant. The IV is the eye magnet used for one target dish (a pasta dish): (1) normal menu (control: same black 11-point font as other dishes); (2) larger font (16-point bold); (3) coloured font (red).

Independent measures, as different diners see each menu.

Procedure: each menu version is used for two weeks, in a counterbalanced order, over six weeks. Waiters give out menus as normal and diners order as usual.

DV: the percentage of diners who order the target dish, taken from the till records.

Controls: the dish has the same position on the page, price, description and recipe in all conditions; only lunch and dinner on weekdays are counted; no specials are offered on the dish.

Question number	
	Sample: all diners over the six weeks (an opportunity sample), about 600 per condition.
	Data and analysis: quantitative percentages for each condition, shown on a bar chart and compared with a chi-squared test.
	Ethics: diners cannot give consent, but no harm is caused as menus look normal and no personal data are recorded; the restaurant manager gives permission.
6(b)	Psychological evidence: Pavesic (2005) outlines common menu mistakes that make a menu hard to read, such as poor font size and font style, crowded pages with too many items, and printing on dark paper with dark ink. These factors can be turned around and used as eye magnets: anything on a menu that attracts attention, such as a larger font, a coloured font, a box or a picture. If an item draws the eye, it is more likely to be read and chosen. Research on eye movement patterns, e.g. Yang (2012), has also shown that diners scan menus in particular patterns, so I kept the dish in the same position to isolate the effect of the magnet.
	Methodological evidence: a field experiment in a real restaurant gives high ecological validity, because real diners spend real money. The control menu allows any increase to be measured. Keeping position, price and description the same controls extraneous variables, so the change in orders is caused by the eye magnet. Counterbalancing the order controls for time effects such as weather or season. Till records give objective quantitative data with no researcher bias, and a large sample makes results reliable. Independent measures is needed because each diner sees only one menu.
	Psychology and health
7(a)	Aim: to investigate how beliefs about health change in adults over time and who

Question number	
	influences them. Method: a longitudinal study using semi-structured interviews, conducted at the start and then every 12 months for 4 years, in a quiet room at a community centre. Sample: 60 adults aged 25 to 40 who have just moved to a new city for work, a time when health habits may change, recruited by volunteer sampling through employers. Example questions: closed: 'How important is regular exercise for your health?' (1 = not important, 7 = very important); 'How many days a week do you exercise?'; 'How many portions of fruit and vegetables do you eat each day?'. Open: 'Who has most influenced your health beliefs recently?'; 'Have your beliefs about drinking alcohol changed in the last year? Why?'. The same core questions are asked at every interview, with follow-up questions where needed. Procedure: one trained interviewer per participant, audio-recorded and transcribed; parents' and partners' health beliefs are also measured with a short questionnaire at the start. Data and analysis: quantitative ratings are compared across the 5 time points (means on a line graph, Friedman test); qualitative answers are analysed by thematic analysis, e.g. 'influence of friends', 'influence of family'. Ethics: informed consent, confidentiality, right to withdraw at any time, consent renewed each year.
7(b)	Psychological evidence: Lau et al. (1990) studied beliefs about health change in adolescents using questionnaires as they moved to college. They tested three models. The lifelong openness model says people are always open to influence from others throughout life. The windows of vulnerability model says parental influence persists unless the child is exposed to other social models, such as other students. The enduring family socialisation model says health beliefs learned from the family

Question number

during childhood remain fairly stable throughout life. My study tests these models in adults, by asking who has influenced their beliefs and measuring parents' beliefs, and by choosing a life change (moving city) as a possible window of vulnerability.

Methodological evidence: a longitudinal design is needed because the aim is change over time; the same people are followed, so individual differences are controlled. Semi-structured interviews allow the same core questions each year for comparison, increasing reliability, while follow-up questions give detailed qualitative reasons, increasing validity, which questionnaires like Lau et al.'s could not. Rating scales give quantitative data to compare time points. Attrition is a risk in longitudinal studies, so a sample of 60 allows for drop-outs. Renewing consent each year respects the right to withdraw.

Psychology and organisations

8(a) Aim: to investigate which hygiene and motivator factors are most likely to cause job satisfaction and job dissatisfaction.

Sample: 200 employees from 4 companies (manufacturing, retail, a bank and a hospital), selected by stratified random sampling so that each company and level of seniority is represented.

Method: an anonymous online questionnaire completed in work time.

Section 1 (closed): for each factor, workers rate two statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree), e.g. 'My salary makes me satisfied with my job' and 'My salary makes me dissatisfied with my job'. Hygiene factors: company policy, supervision, working conditions, salary, relationships with peers, job security. Motivators: achievement, recognition, responsibility, advancement, the work itself.

Section 2 (closed): rank the three factors that most affect your satisfaction.

Question number	
	Section 3 (open): 'Describe a time you felt exceptionally good about your job and why.'; 'Describe a time you felt exceptionally bad about your job and why.'
	Data and analysis: mean satisfaction and dissatisfaction scores for each factor, shown on a bar chart, comparing motivators and hygiene factors using a Wilcoxon test; open answers coded into Herzberg's factors by content analysis by two coders.
	Ethics: informed consent, anonymity so managers cannot identify answers, right to withdraw.
8(b)	Psychological evidence: Herzberg (1959) proposed a two-factor theory: the factors causing job satisfaction are separate from those causing dissatisfaction. Hygiene factors (dissatisfiers) include company policy, supervision, working conditions, salary, relationships with peers and job security; when poor they cause dissatisfaction, but when good they do not cause satisfaction. Motivators (satisfiers) include achievement, recognition, responsibility, advancement and growth and meaningful work, which cause satisfaction. Herzberg asked engineers and accountants to describe times they felt exceptionally good or bad about their jobs, which is why my open questions use this critical incident approach and my closed questions measure satisfaction and dissatisfaction separately for each factor.
	Methodological evidence: a questionnaire allows a large sample from several organisations, so findings can be generalised beyond Herzberg's engineers and accountants. Stratified sampling ensures different industries and levels are represented. Closed rating questions give quantitative data so factors can be compared statistically, and the ranking question checks the ratings. Open questions give qualitative detail. Two coders allow inter-rater reliability to be checked. Anonymity reduces social desirability, as workers may fear criticising supervisors, which increases validity.

Question number

Section C

Psychology and abnormality

9 A case study is an in-depth investigation of one person, using several methods such as interviews and observation. Kohn and Antonuccio (2002) studied Jill, a 39-year-old woman with kleptomania, an impulse control disorder in which a person cannot resist the urge to steal items they do not need. They described her stealing, the thoughts and feelings around it, such as tension before and pleasure after, and treated her with covert sensitisation.

There are reasons to agree. A case study gives in-depth, detailed qualitative data showing the specific features of the disorder, such as Jill's thoughts before stealing and why she continued, which no questionnaire could reveal, so more about the disorder can be learned. Kleptomania is rare, so a case study may be the only way to study it in detail. It is idiographic, treating the person as unique, and the general principles found, such as the urge and relief cycle, can be applied to therapy for other people. There is no reason why the details of one person should not also apply to others.

However, there are stronger reasons to disagree. Psychometric measures, such as the K-SAS (Kleptomania Symptom Assessment Scale, Grant et al.), give quantitative data so the extent of kleptomania can be compared across many people and before and after treatment. There are always individual differences, so what is true for Jill may not be true for others; a case study may not generalise to other people with kleptomania or to other impulse-control problems such as gambling disorder. A nomothetic approach studying many people is more useful for finding general characteristics, such as Griffiths' (2005) six components of addiction. Treatments such as drugs are applied to everyone and are tested in

Question number

experiments with many participants, not case studies. Case studies also depend on the researcher's interpretation and the patient's memory, so they are subjective.

In conclusion, I disagree. A case study reveals more depth about one person's experience, but it does not reveal more about the characteristics of the disorder than any other method; combining case studies with psychometric measures such as the K-SAS gives both depth and generalisability.

Psychology and consumer behaviour

10 Robson et al. (2011) investigated customers' responses to the space between restaurant tables. Theories of personal space explain why closeness may be unpleasant: overload theory says too much stimulation from people nearby is more than we can cope with; arousal theory says closeness raises arousal, which is interpreted negatively; and behaviour constraint theory says crowding limits our freedom, so we change our behaviour to adapt.

There are reasons to agree. Being too close can invade intimate personal space boundaries; Hall (1966) said intimate space, under about 45 cm, is reserved for close relationships, so strangers at the next table cause discomfort. This can cause stimulus overload, leading to escape behaviour such as leaving the restaurant or just feeling uncomfortable. It can cause behaviour constraint, such as talking quietly or not staying for coffee after a meal, so the restaurant loses money. Robson et al. found that close table spacing made customers less comfortable, particularly women and people having a private conversation.

However, there are stronger reasons to disagree with 'always'. Some people prefer close tables, because it makes the setting more intimate and lively, and people in close relationships may sit next to each other to increase intimacy. Robson et al. found that responses varied with the type of meal and gender, so table spacing does not affect everyone the same way. Although close tables may cause overload

Question number

and arousal, it can be tolerated, as other factors such as delicious food, good service or friendly company outweigh any discomfort. Arousal can also be interpreted positively, as excitement. Personal space also varies between cultures, so in some cultures closeness is normal. Many studies of table spacing use imagined scenarios, which may not show how people really feel.

In conclusion, I disagree. Small spaces between tables can cause overload, arousal and behaviour constraint, but not always, because the effect depends on the individual, their relationship, the culture and the occasion, so restaurants should vary their table spacing.

Psychology and health

11 Robinson and West (1992) compared what patients at a genitourinary (sexual health) clinic disclosed when completing a questionnaire on a computer with what they disclosed on paper and in an interview with the doctor. Patients disclosed more symptoms and more sensitive information, such as previous attendance at the clinic, to the computer.

There are some reasons to agree. People may prefer to give their symptoms to a computer because it will not judge them, especially for embarrassing problems, as Robinson and West showed, so the information collected is more complete and diagnosis may be more accurate. A computer may be good at diagnosing simple or common illnesses, such as a cold, by matching symptoms to a database. Using a computer is simple and quick and does not take up the time of a busy practitioner, so it could reduce waiting times. Computers are also not affected by tiredness or bias.

However, there are stronger reasons to disagree. Doctors have the experience to deal with ambiguous symptoms and rare illnesses that a computer may misdiagnose, and they can physically examine a patient and read non-verbal cues.

Question number

Robinson and West's patients preferred to give symptoms to a computer, but they did not make the diagnosis; people may still wish a practitioner to diagnose them and may not trust a treatment prescribed by a computer, which may reduce adherence. Patients value the relationship with the practitioner: Savage and Armstrong (1990) found patients were satisfied with a doctor's directing style, which shows that patients want a doctor to take responsibility. Also, Robinson and West's study was in one type of clinic in the UK, so it may not generalise to all illnesses or patients, such as older people who are less used to computers.

In conclusion, I disagree. Computers are useful for gathering honest information, especially on sensitive topics, and could help with simple diagnoses, but they are unlikely to remove the need for a doctor; the best system uses computer disclosure to support the doctor's diagnosis.

Psychology and organisations

12 Reductionism is explaining complex behaviour by breaking it down into simpler parts; holism is looking at the whole. Scouller (2011) proposed three levels of leadership: public leadership (the behaviours involved in influencing a group), private leadership (one-to-one leadership of individuals) and personal leadership (the leader's inner psychological development, such as self-awareness and skills).

There are reasons to agree. Scouller's model breaks leadership down into outer levels (public and private) and an inner level (personal), and each of these is broken down again into separate behaviours, so it is reductionist. Behavioural theories also break leadership down: the Ohio State studies divided leader behaviour into initiating structure and consideration, and the Michigan studies divided it into task-oriented and relationship-oriented behaviour. This reductionism is useful, because each component can be measured and trained, and studied scientifically.

However, there are strong reasons to disagree that all theories are reductionist.

Question number

Scoulller's model itself argues the three levels must work together, with personal leadership underpinning the outer levels, which is a holistic view. Heifetz (1997), in adaptive leadership, says the leader should 'get on the balcony', stepping back to look at the whole picture rather than individual components. Early universalist theories, such as the 'great man' theory, and charismatic or transformational leadership saw leadership as one whole quality of the person rather than separate behaviours. Breaking leadership into components may be done just for studying it; in reality, leadership is holistic, as a leader uses many skills together and the situation also matters.

In conclusion, I disagree. Scoulller's theory is partly reductionist in breaking leadership into levels, but it also takes a holistic view, and many other theories, such as adaptive and universalist theories, are holistic, so not all leadership theories are reductionist.

Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/43**

Paper 4 Specialist Options: Application **October/November 2023**

1 hour 30 minutes

7553712431

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.
    - Section A: answer **two** questions.
    - Section B: answer **one** question.
    - Section C: answer **one** question.
- 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 **8** pages. Any blank pages are indicated.

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Section A

You must answer **two** questions from this section.
Answer all the parts for the two questions you choose.

Psychology and abnormality

1 One explanation of bipolar disorder is that it is genetic. The study by Oruc et al. (1997) selected 42 patients with bipolar disorder. Sixteen of these patients had a first-degree relative with a history of bipolar disorder. All patients had a clinical interview and their DNA was analysed.

(a) Explain what is meant by the term 'bipolar disorder'. [2]

(b) Outline **two** findings from the study by Oruc et al. [4]

(c) Outline **one** explanation for depression, other than a biological explanation. [4]

(d) Discuss the strengths and weaknesses of using clinical interviews to gather data about the genetic explanation of depression. You should include a conclusion in your answer. [5]

Psychology and consumer behaviour

2 To investigate the topic of retail store architecture, Turley and Milliman (2000) reviewed sixty studies of atmospheric effects on shoppers. They referred to five 'atmospheric variables', including layout and design variables, and point-of-purchase and decoration variables.

(a) Explain what is meant by a 'review of studies' as conducted by Turley and Milliman. [2]

(b) **(i)** Suggest **one** 'point-of-purchase' variable. [2]

(ii) Explain how the variable you suggested in **(b)(i)** relates to **one** model of the effects of ambience. [2]

(c) Suggest **two** ways in which the effect of atmospheric variables on shoppers could be measured. [4]

(d) Discuss the strengths and weaknesses of using field experiments to investigate the effect of atmospheric variables on shoppers. You should include a conclusion in your answer. [5]

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Psychology and health

3 Many people experience chronic pain. Some people use medical techniques (biochemical) such as drugs, psychological techniques, or alternative techniques to manage (and/or control) their pain. Medical techniques can also be used to control acute pain.

(a) Explain what is meant by chronic pain, using an example. [2]

(b) Outline **two** ways in which medical techniques can be used to control acute pain. [4]

(c) Suggest **two** differences between acupuncture and stimulation therapy/TENS used to manage pain. [4]

(d) Discuss the strengths and weaknesses of using 'psychological techniques' to manage pain. You should include a conclusion in your answer. [5]

Psychology and organisations

4 Groupthink is what happens when group cohesion causes a group, such as a management team, to make a decision without any critical evaluation. Janis (1971) identifies eight 'symptoms' (features) of groupthink.

(a) Give **one** real-life example of groupthink. [2]

(b) Explain **two** 'symptoms' of groupthink as identified by Janis. [4]

(c) Suggest **two** strategies that can be used to avoid groupthink. [4]

(d) Discuss the strengths and weaknesses of using observations to assess groupthink in a management team. You should include a conclusion in your answer. [5]

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Section B

You must answer **one** question from this section.

Psychology and abnormality

5 **(a)** Design a study to investigate the long-term effectiveness of systematic desensitisation in the treatment of anxiety disorders. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

Psychology and consumer behaviour

6 McCarthy's marketing mix model includes four concepts related to advertising: product, price, place, promotion (The 4 Ps).

(a) Design a study using a questionnaire to investigate which of these four concepts has **most** effect on consumer behaviour. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

Psychology and health

7 **(a)** Design a study to investigate age differences in stages of delay, as proposed by Safer, before seeking medical treatment. [10]

(b) Explain the psychological and methodological evidence on which your study is based. [8]

Psychology and organisations

8 **(a)** Design an experiment to investigate levels of concentration in workers in different types of office design. [10]

(b) Explain the psychological and methodological evidence on which your experiment is based. [8]

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Section C

You must answer **one** question from this section.

Psychology and abnormality

9 *'Psychometric measures used to assess anxiety disorders, such as the Generalised Anxiety Disorder assessment (GAD-7), provide therapists with no useful information.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and consumer behaviour

10 *'If playing one type of music at one open air market stall increases the amount of money spent, this finding can be generalised to all open air market stalls.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and health

11 *'Practitioner style (doctor or patient-centred) is irrelevant. What is important is the way in which a practitioner is dressed.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

Psychology and organisations

12 *'All accidents at work are caused by errors in operator-machine systems (system errors); **not** by other factors, such as human error.'*

To what extent do you agree with this statement? Use examples of research you have studied to support your answer. [12]

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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 9990/43

Section A

Psychology and abnormality

1(a) Bipolar disorder, also known as manic depression, is a mood disorder characterised by extreme mood swings from one 'pole' to the other: episodes of elevated mood (mania), with high energy and excitement, alternate with periods of depression.

1(b) First, no significant associations were found between the serotonin gene polymorphisms studied and bipolar disorder in the total patient sample, so there was no overall difference between the bipolar patients and the control group. Second, polymorphisms in the serotonin receptor gene (5-HTR2c) and the serotonin transporter gene (5-HTT) were observed in the female patients, which suggests an increased genetic susceptibility to bipolar disorder in women.

1(c) The cognitive explanation (Beck, 1979) says that depression is caused by faulty, irrational thinking rather than biology. People react differently to the same unpleasant events because some have negative automatic thoughts (NATs) that pop into their mind without effort, e.g. 'I always fail'.
These thoughts form the negative cognitive triad: unrealistically negative views about the self ('I am worthless'), the world ('everyone is against me') and the future ('nothing will ever get better'). They come from negative schemas learned in childhood and are kept going by cognitive biases such as overgeneralisation (one

Question number

failure means total failure) and magnification of small problems. Because the person interprets events negatively, they feel hopeless and depression develops.

1(d) A strength is that the participant knows their own family relationships and health history, e.g. which relatives have had depression, whereas the practitioner does not, so an interview is the only way to gather this information for a genetic study.

A second strength is that the interview is flexible: the participant can explain answers fully and the practitioner can ask follow-up questions, use verbal and non-verbal skills, and add other tests such as a DNA sample.

A weakness is that the participant may not tell the truth, or may exaggerate or underplay a relative's illness, e.g. because of the stigma of mental illness in the family, so family data may be inaccurate.

A second weakness is that a clinical interview is subjective, as the practitioner interprets the answers, and participants may not know the terminology, e.g. whether an uncle was 'depressed' or had bipolar disorder, so diagnoses of relatives may be wrong.

In conclusion, clinical interviews are essential for collecting family histories, but for a genetic explanation they should be combined with objective evidence such as DNA analysis, as Oruc et al. did, because self-report alone cannot show a genetic cause.

Psychology and consumer behaviour

2(a) A review of studies collects together and analyses the findings of many previously published research studies on one topic, here atmospheric effects on shopping behaviour. Turley and Milliman constructed a comprehensive table of the empirical studies, summarising the findings of each, so that overall conclusions about the effects of atmospherics on shoppers could be drawn.

Question number	
2(b)(i)	Signs and cards at the point of purchase, such as a sign at the till showing a sale price. Signs combined with sale price information displayed at the point of purchase are effective at increasing sales.
2(b)(ii)	Mehrabian and Russell's (1974) PAD model says that the environment causes emotional states of pleasure, arousal and dominance, which lead to approach or avoidance behaviour. A bright 'sale price' sign arouses attention, gives pleasure at finding a bargain and makes the shopper feel in control (dominance) of an informed choice, so they show approach behaviour and buy the item.
2(c)	First, a covert observation in the store: an observer, or CCTV, records the number of shoppers who enter the store, how long they remain and how many items they pick up, when a variable such as music or lighting is present compared with when it is absent. Second, a questionnaire with closed questions given to shoppers as they leave: they rate on a 1 to 7 scale how pleasant, how stimulating (arousing) and how in control (dominant) they felt in the store, and how much they spent, so the PAD responses to the atmosphere can be measured.
2(d)	A strength is that a field experiment still has an IV (e.g. music versus no music), a DV (e.g. amount spent) and controls, so cause and effect between the atmospheric variable and shopping can be established. A second strength is that shoppers usually do not know they are in a study, so they behave naturally, and because shopping takes place in real stores, the findings have high ecological validity, unlike a laboratory. A weakness is that extraneous variables, such as how crowded the store is, the weather or special offers, are much harder to control than in a laboratory, so they

Question number

may affect spending instead of the IV.

A second weakness is that field experiments usually gather only quantitative data, such as sales, so they do not explain why shoppers did or did not buy. Also isolating one IV is reductionist, as many atmospheric variables act together.

In conclusion, field experiments are the most suitable method because they test atmospherics where shopping really happens, but they should be run across several stores and combined with interviews so that the effect of uncontrolled variables can be ruled out and reasons understood.

Psychology and health

3(a) Chronic pain is pain that is long lasting, continuing for months or years (usually 3 months or more), beyond the normal time for healing. An example is the pain of arthritis.

3(b) First, peripherally acting analgesics such as aspirin, paracetamol or ibuprofen, which are 'over the counter' medicines taken for a headache or toothache. They work at the site of the injury, e.g. by reducing the chemicals (prostaglandins) that make nerve endings sensitive.

Second, local anaesthetics. A mild one can be a cream rubbed onto the painful site, and a strong one is an injection into the local area, e.g. before stitching a wound or extracting a tooth. It blocks nerve signals from that area so the patient feels no pain but stays conscious.

3(c) First, acupuncture is administered by a qualified practitioner who knows exactly where to insert the needles, whereas TENS can be administered by the person themselves at home, without needing anyone with experience.

Second, acupuncture uses fine needles inserted into specific points on the body

Question number

and is used to relieve pain directly, and can even prevent pain as an alternative to an anaesthetic, whereas TENS sends mild electrical pulses through pads on the skin which distract the person from the original pain (closing the pain 'gate'), and would never be used to prevent pain during surgery.

3(d) A strength is that people control the treatment themselves: they can choose when to use a technique such as attention diversion or non-pain imagery, which gives them a sense of control over the pain.

A second strength is that psychological techniques can be used any place and any time, at no cost, and have no side effects or risk of addiction, unlike drugs such as opioids.

A weakness is that people may prefer a medical treatment given by a medically qualified person, so they may not believe a psychological technique will work and may not use it.

A second weakness is that people have to be active for the technique to work and may not be good at it. It takes time and practice to become proficient, so it is not a quick 'take a drug' solution, especially for severe pain.

In conclusion, psychological techniques are valuable for long-term chronic pain because they are safe and self-controlled, but for severe or acute pain they work best alongside medical techniques rather than replacing them.

Psychology and organisations

4(a) The Bay of Pigs invasion (1961). President Kennedy's advisers agreed to a plan to invade Cuba with a small force of Cuban exiles. No one in the cohesive group challenged the plan's obvious weaknesses, and the invasion was a disaster.

4(b) First, the illusion of invulnerability: members believe that nothing can go wrong

Question number

because the group is so strong, so they become overly optimistic and take extreme risks.

Second, the illusion of unanimity: members believe that everyone in the group agrees, so silence is taken as agreement, and members who respect each other assume they will automatically agree, so doubts are never voiced.

4(c) First, appoint a devil's advocate: one member is given the role of deliberately challenging every proposal and pointing out weaknesses, so critical evaluation always takes place.

Second, hold a second-chance meeting: after a decision is reached, the team meets again before acting so that each member can express any remaining doubts, rather than rushing to a quick solution.

4(d) A strength is that a covert observation means the team members do not know they are being observed, so they behave naturally, giving accurate information about how they behave when making a decision as a team, e.g. whether dissenters are pressured.

A second strength is that meetings can be recorded on CCTV and observed by more than one observer, so recordings can be re-run and inter-rater reliability checked using behaviour categories such as Janis's symptoms.

A weakness is that if a participant observation is conducted by a member of the team, behaviours might be missed because the observer is involved in the discussion and may be affected by groupthink.

A second weakness is that a structured observation with fixed categories may not account for new or unexpected behaviour, so some features of groupthink, such as self-censorship, which happens in people's heads, might be missed. Covert observation also raises ethical issues of consent.

In conclusion, observation is useful because groupthink is a group behaviour that

Question number

can be seen in meetings, but it should be recorded and checked by two observers and combined with interviews to detect hidden symptoms such as self-censorship.

Section B

Psychology and abnormality

5(a) Aim: to investigate the long-term effectiveness of systematic desensitisation (SD) for a specific phobia of spiders. Hypothesis: participants treated with SD will have lower fear scores than a control group 2 years after treatment.

Method: a longitudinal field experiment in a clinic. The IV is the treatment: SD or relaxation training only (control). Independent measures design with random allocation to groups.

Sample: 40 adults aged 18 to 60 diagnosed with a specific phobia of spiders using DSM-5, recruited by volunteer sampling from GP referrals.

Procedure: the SD group receive 8 weekly one-hour sessions. They learn deep muscle relaxation and breathing, build an anxiety hierarchy with the therapist (from the word 'spider' to holding a spider) and work up it while relaxed. The control group receive 8 weekly relaxation sessions only.

DVs: (1) a self-report fear rating from 0 (no fear) to 10 (extreme fear) when a spider is shown in a tank; (2) a behavioural approach test: how many of 10 marked steps towards the spider the participant takes. Both are measured before therapy, at the end, and at 6, 12 and 24 months.

Controls: the same trained therapist, hierarchy steps, spider and room for all; the person measuring the DVs does not know which group a participant is in (single blind).

Data and analysis: quantitative scores, shown as mean fear ratings over time on a line graph. A Mann-Whitney U test compares the groups at 24 months and a

Question number	
	Wilcoxon test compares before and after.
	Ethics: informed consent, right to withdraw at any point, confidentiality, and the control group are offered SD after the study.
5(b)	Psychological evidence: SD (Wolpe, 1958) is based on classical conditioning. A phobia is a learned association between a stimulus and fear, as when Little Albert (Watson and Rayner, 1920) learned to fear a white rat. SD uses reciprocal inhibition: a person cannot be relaxed and anxious at the same time. So the patient is trained in deep muscle relaxation and breathing, then an anxiety hierarchy is built from least fearful (imagining a spider) to most fearful (in vivo contact). When relaxed at one step, the next is presented until the person is desensitised. This is why my SD group follow exactly these steps.
	Methodological evidence: a longitudinal design is used because the question is about long-term effectiveness, and a phobia may relapse after therapy ends. The relaxation-only control group shows whether the hierarchy, not just relaxation or attention, causes improvement, and random allocation removes participant variables.
	Two DVs are used: self-report gives the person's feelings, and the approach test gives objective behaviour, increasing validity. The single-blind measurer reduces researcher bias, and standardised procedures allow replication, increasing reliability.
	Offering SD to the control group afterwards ensures they are not denied effective treatment.
	Psychology and consumer behaviour
6(a)	Aim: to investigate which of McCarthy's 4 Ps (product, price, place, promotion) has most effect on consumer behaviour. Hypothesis: there will be a difference in the ratings given to the four Ps.
	Sample: 120 adult shoppers in a shopping mall, selected by stratified sampling to

Question number	
	include equal numbers of males and females and three age groups (18 to 30, 31 to 50, over 50).
	Method: a self-report questionnaire completed on paper in the mall, about a recent purchase of a pair of trainers. It has closed questions and some open questions.
	Example closed questions, rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree): 'I bought it because of the quality and brand of the product' (product); 'I bought it because it was on special offer' (price); 'I bought it because the shop was easy to get to' (place); 'I bought it because I saw an advert for it' (promotion). There are 3 statements for each P, in a random order, and a final question asks participants to rank the four Ps from 1 (most important) to 4.
	Example open question: 'Explain the main reason why you bought these trainers.'
	Data and analysis: quantitative scores are totalled for each P (3 to 15), mean scores are shown on a bar chart and compared with a Friedman test. Qualitative answers are analysed by content analysis into the four Ps.
	Ethics: informed consent, anonymous and confidential answers, right to withdraw, short debrief.
6(b)	Psychological evidence: McCarthy's marketing mix model proposes four concepts.
	Product includes the basic product and the extended product with added qualities such as packaging, brand name, service and guarantee. Price is the amount the customer pays, including discounts, special offers and sale prices. Place is the location where the product is sold, such as a retail park, shopping mall or online.
	Promotion is all the communications the company makes about the product, such as advertising. So I wrote three statements for each P, using these exact aspects, e.g. 'special offer' for price, so that the questionnaire measures each concept validly.
	Methodological evidence: a questionnaire allows a large sample to be asked the same questions quickly, so results can be generalised. Closed Likert questions give

Question number	
	quantitative data, so the four Ps can be compared statistically, and the ranking question provides a check on the ratings (internal validity). Three statements per P and random order reduce order effects and response bias, increasing reliability, which could be checked by test-retest. Open questions add qualitative detail about reasons. Stratified sampling makes the sample representative of shoppers of different ages and genders. Asking about one recent product makes answers specific and less affected by memory.
	Psychology and health
7(a)	Aim: to investigate age differences in Safer's three stages of delay before seeking medical treatment. Hypothesis: there will be a difference between age groups in appraisal, illness and utilisation delay.
	Method: a structured interview with closed and open questions, a quasi-experiment with the natural IV of age group: 18 to 35, 36 to 59 and 60 and over (independent measures). The DVs are the number of days in each stage of delay.
	Sample: 90 patients (30 in each age group) waiting to see a doctor at three GP clinics, selected by opportunity sampling, with a new symptom for this visit.
	Procedure: a trained interviewer asks each patient privately in a side room: 'How many days was it from first noticing your symptom to deciding you were ill?' (appraisal delay); 'How many days from deciding you were ill to deciding to see a doctor?' (illness delay); 'How many days from deciding to see a doctor to today's appointment?' (utilisation delay). Open questions follow, e.g. 'Why did you wait before making the appointment?'
	Controls: the same questions in the same order, same interviewer and setting for all patients.
	Data and analysis: quantitative data are mean days per stage for each age group, shown on a bar chart and compared with a Kruskal-Wallis test; qualitative reasons

Question number	
	are analysed by thematic analysis.
	Ethics: informed consent, confidentiality of medical details, right to withdraw, and the interview does not delay the patient's appointment.
7(b)	Psychological evidence: Safer et al. (1979) interviewed 93 patients waiting to see a doctor about why they delayed seeking help and identified three stages. Appraisal delay is the number of days from the first symptom to the patient deciding they are ill. Illness delay is the days from deciding they are ill until deciding to seek medical attention. Utilisation delay is the days from deciding to seek medical attention until the actual appointment. My three main questions measure exactly these three stages. Age may matter because older people may see symptoms as part of getting older, lengthening appraisal delay, while younger people may delay because of work or study.
	Methodological evidence: an interview was used, as by Safer, because the interviewer can explain questions and the patient can explain reasons, and patients waiting in a clinic have a recent, real experience of delay, so recall is better. Closed questions give quantitative days that can be compared, and open questions give qualitative reasons for delay, giving more valid explanations. Age is a natural IV so independent measures are needed. A standardised script and one interviewer reduce interviewer bias and increase reliability. Opportunity sampling in clinics is practical, and using three clinics makes the sample more representative.
	Psychology and organisations
8(a)	Aim: to investigate whether office design affects workers' concentration.
	Hypothesis: workers will concentrate better (make fewer errors) in a private office than in an open-plan office.
	Method: a field experiment in a large company that has both an open-plan office

Question number	
	and private (cellular) offices. The IV is office design: open-plan or private.
	Repeated measures design: each worker works for one day in each office, counterbalanced (half do open-plan first).
	Sample: 30 office workers from the company, selected by random sampling from the staff list.
	DV: concentration, measured by a standard proofreading task: a 2-page document with 40 planted errors, completed in 15 minutes at 11am on each day. The score is the number of errors found. Workers also rate 'How well could you concentrate today?' from 1 (not at all) to 10 (completely).
	Controls: two equivalent versions of the document with the same number and type of errors; same time of day, same day of the week, same desk and computer type; standardised instructions.
	Data and analysis: quantitative scores; mean errors found in each office shown on a bar chart and compared with a Wilcoxon signed-ranks test.
	Ethics: informed consent, scores kept confidential from managers, right to withdraw, debrief.
8(b)	Psychological evidence: Oldham and Brass (1979) studied employees of a newspaper company who moved from a conventional office into an open-plan office. They took a number of measures before and after the move and found decreases in work satisfaction, interpersonal satisfaction and internal work motivation. In interviews, employees described the new office as a 'fishbowl', 'cage' or 'warehouse', reflecting an inability to concentrate, develop close friendships and complete their work. My study tests this directly by measuring concentration in open-plan and private offices.
	Methodological evidence: a field experiment in a real company gives high ecological validity, as the workers are in their real offices, while an IV, DV and controls allow cause and effect to be established. Repeated measures removes participant

Question number

variables such as ability, and counterbalancing and two equivalent documents control order effects such as practice. The proofreading score is an objective, quantitative operationalisation of concentration, and the self-rating adds the workers' own experience, as Oldham and Brass used interviews. Random sampling makes the sample representative of the staff. Keeping scores from managers protects workers from harm.

Section C

Psychology and abnormality

9 Psychometric measures are standardised questionnaires that give a score for a disorder. The GAD-7 (Spitzer et al., 2006) has 7 items about the last two weeks, such as 'worrying too much about different things', each scored from 0 (not at all) to 3 (nearly every day), giving a total of 0 to 21; scores of 5, 10 and 15 indicate mild, moderate and severe anxiety. The BIPI (blood-injection phobia inventory) asks about cognitive, physiological and behavioural responses to situations such as having an injection.

I disagree with the statement, because these measures give therapists very useful information. They indicate the severity of a disorder, which helps a therapist decide on treatment, e.g. medication for a severe GAD-7 score. The BIPI highlights specific features, showing whether a patient's problem is mainly physiological (e.g. fainting) or cognitive, so therapy can target it. Because they give quantitative data, scores can be compared with others with the same disorder and with the patient's own earlier scores, so progress during therapy can be measured objectively. They are quick, standardised and reliable, which removes the subjectivity of the therapist's judgement.

However, there are arguments for the statement. Talking to a therapist in a

Question number

clinical interview may reveal more than any test, such as the causes of the worry and how it affects the person's life, which a 7-item score cannot. Rating scales may not represent what the person really thinks: they may choose a middle or neutral option. People may not be honest, e.g. underplaying symptoms because of social desirability or stigma. Also, psychometric measures assume that people with a disorder are similar, so they are nomothetic and less individualistic, and they are reductionist, reducing a complex experience to one number. The scale has fixed questions, so unusual symptoms may be missed.

In conclusion, I largely disagree. Measures such as the GAD-7 provide useful information on severity and progress that therapists need, but they are not sufficient alone; they are most useful when combined with a clinical interview that explains the meaning behind the score.

Psychology and consumer behaviour

10 Guéguen et al. (2007) conducted a field experiment at a stall in an open air market in a town in France, comparing days when music was played at the stall with days when no music was played. Music had a positive effect on shoppers' behaviour at the stall, such as more purchases.

There are reasons to agree. Large numbers of people shop at open air markets all over the world, and playing music is a common way of relaxing, entertaining and attracting customers everywhere, so the same effect would be expected. As a field experiment, the IV (music) was manipulated and other variables controlled, so the cause of the increase is known, and the study can be replicated at other stalls. Other evidence also shows music increases sales: North et al. (2003) found that classical music in a restaurant increased spending, Milliman (1982) found slow tempo music in a supermarket increased sales, and North et al. (1999) found French music increased sales of French wine. As it took place in a real market, it

Question number

also has high ecological validity.

However, there are stronger reasons to disagree, as the word 'all' is too extreme. The location of the study, a town in France, might not generalise to other countries and cultures. The type of music, which was joyful and lively, might be specific to that place and not liked elsewhere. The music was chosen for its appropriateness for the sale of toys and trinkets, so it may not generalise to stalls selling other items, such as fish or vegetables; North et al. (1999) showed the effect depends on the fit between music and product. The stall was one stall, so individual factors such as the seller and the goods may have mattered. Other variables in open air markets, such as weather, noise from other stalls and crowding, differ between markets, and some shoppers dislike music, so individual differences mean the effect will vary.

In conclusion, I disagree. The finding that music can increase spending is supported by other studies, but one study at one stall cannot be generalised to all stalls, because the effect depends on the type of music, the products sold, the culture and the shoppers; it would need replicating at different markets first.

Psychology and health

11 Practitioner style is how a doctor interacts with a patient. Byrne and Long (1976) analysed around 2,500 recorded consultations and identified a doctor-centred style, where the doctor asks closed questions and makes the decisions, and a patient-centred style, where the doctor listens, asks open questions and involves the patient. Dress is non-verbal communication: McKinstry and Wang (1991) showed patients photos of doctors in different clothes and found a preference for formally dressed doctors, such as a suit or white coat, especially among older patients.

There are some reasons to agree. McKinstry and Wang showed that dress affects

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patients' confidence in the doctor, and if the doctor is dressed appropriately, patients will trust what is said, so style may matter less. Many patients simply want to present their symptoms, get a diagnosis and treatment and leave, so a chatty style is unimportant. If the patient understands the medical terminology, they understand their illness and treatment whatever the style.

However, there are stronger reasons to disagree. Savage and Armstrong (1990) found that patients at a London practice who received a directing (doctor-centred) style were more satisfied than those who received a sharing style, especially those with a physical illness, which shows that style is very relevant to satisfaction. Some patients prefer a patient-centred approach and others a doctor-centred one, so matching style to the patient matters more than dress. Verbal communication also matters: McKinlay (1975) found doctors used terms patients did not understand, and Ley (1988) showed that patients understand and remember little of what doctors say, so a patient-centred style that checks understanding is crucial for adherence. A doctor's knowledge, skills and the way they interact matter far more than clothes, and McKinstry and Wang's patients only judged photos, so the study lacks ecological validity.

In conclusion, I disagree. Dress may affect a first impression, but practitioner style affects satisfaction, understanding and therefore adherence, so it is far from irrelevant; the best practitioner adapts their style to the patient and dresses appropriately.

Psychology and organisations

12 Operator-machine systems involve a human operator receiving information from a machine through displays and acting on it using controls. Errors can come from the system, such as poorly designed displays or controls, or from human error. Riggio (1990) outlines four types of human error: errors of omission (failing to do

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something), commission (doing something wrong), sequence errors (doing things in the wrong order) and timing errors (too fast or too slow).

There are some reasons to agree. Some accidents are clearly system errors. At Three Mile Island (1979) the control room was so poorly designed that the system was unmanageable: important warning lights were hidden or confusing, so operators could not understand what was happening. Machines can have lights that are too dim, buzzers that are too quiet and controls that are not user-friendly, so even a careful operator will make mistakes. If a design leads to substitution errors (pressing the wrong control) or breaks motion stereotypes, it could be argued that the system, not the person, is at fault.

However, there are strong reasons to disagree with 'all'. Many accidents are due to human error caused by tiredness and fatigue, alcohol or drugs, or an accident-prone personality. More errors happen during the night 'graveyard' shift, because humans are vulnerable when their circadian rhythms are disrupted, e.g. Gold et al. (1992) found that nurses working rotating shifts reported more accidents and errors than nurses on day shifts. Fox et al. (1987) reduced accidents in open-cast mines using a token economy that rewarded safe behaviour, which shows that human behaviour, not just the system, causes accidents. Most accidents are a combination of both: the operator-machine system never works flawlessly, and a fault becomes an accident when a tired or poorly trained human fails to respond. Blaming only the system is reductionist and situational, ignoring individual factors.

In conclusion, I disagree. System errors cause some accidents, but most result from an interaction of human and system errors, so the best way to reduce accidents is to design user-friendly systems and also reduce human error through training, safe shift patterns and rewards for safe behaviour.