Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/31**

Paper 3 Specialist Options: Theory **October/November 2020**

1 hour 30 minutes

3715832178

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

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

INFORMATION

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

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Psychology and abnormality

Answer **all** questions.

1 **(a)** Outline **one** biochemical treatment for impulse control disorders and non-substance addictive disorder. [2]

(b) Describe the feeling-state theory (Miller, 2010) as a cognitive cause of impulse control disorders and non-substance addictive disorder. [4]

(c) Explain **one** similarity and **one** difference between cognitive explanations and behavioural explanations of impulse control disorders/non-substance addictive disorder. [6]

2 **(a)** Describe explanations of schizophrenia and delusional disorder. [8]

(b) Evaluate explanations of schizophrenia and delusional disorder, including a discussion of the individual versus situational debate. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Explain what is meant by a 'competitor-focused' sales technique. [2]

(b) Describe **two** findings from the study by Kardes et al. (2007) on the disrupt-then-reframe technique to sell a product. [4]

(c) Discuss **two** advantages of field experiments, using examples from the study by Kardes et al. [6]

4 **(a)** Describe what psychologists have discovered about intuitive thinking and its imperfections in consumer decision-making (thinking fast and thinking slow, choice blindness, advertising and false memory). [8]

(b) Evaluate what psychologists have discovered about intuitive thinking and its imperfections in consumer decision-making (thinking fast and thinking slow, choice blindness, advertising and false memory), including a discussion of reliability. [10]

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Psychology and health

Answer **all** questions.

5 **(a)** Explain what is meant by 'unrealistic optimism' (Weinstein, 1980) in relation to individual factors in changing health beliefs. [2]

(b) Describe the procedure used in the study by Janis and Feshbach (1953) on fear arousal. [4]

(c) Discuss **two** ethical issues in relation to the study by Janis and Feshbach. [6]

6 **(a)** Describe what psychologists have learned about types of non-adherence and reasons why patients do not adhere to medical advice. [8]

(b) Evaluate what psychologists have learned about types of non-adherence and reasons why patients do not adhere to medical advice, including a discussion of generalisability. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Identify **two** 'followership' types (Kelley, 1988). [2]

(b) Describe the Leadership Practices Inventory (LPI) devised by Kouzes and Posner (1987). [4]

(c) Explain **one** strength and **one** weakness of the Leadership Practices Inventory. [6]

8 **(a)** Describe what psychologists have discovered about temporal conditions of work environments. [8]

(b) Evaluate what psychologists have discovered about temporal conditions of work environments, including a discussion of demand characteristics. [10]

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

Question number

Answers for paper 9990/31

Psychology and abnormality

1(a) One biochemical treatment is the use of opioid antagonists such as naltrexone. These drugs block the opioid receptors in the brain, so the brain cannot receive opioids and the person no longer gets the pleasurable "high" from the behaviour (e.g. gambling or stealing), which reduces the urge to repeat it.

1(b) Miller's feeling-state theory is based on state-dependent memory. An impulse control disorder forms when intense positive feelings become linked to a particular activity or object, creating a state-dependent memory called a feeling-state. The feeling-state is made up of all the sensations, emotions, thoughts and memories experienced with that activity, including physical arousal such as the release of adrenaline. For example, in pyromania the excitement felt when setting a fire becomes fixed to fire-setting. Later, when a triggering event, object or activity is experienced, the person is reminded of the feeling-state and this creates a compulsion to perform the behaviour again to re-experience the feeling.

1(c) One similarity is that both explanations say the disorder forms through experience. In feeling-state theory, the feeling-state cannot develop unless the person has actually experienced the object or activity together with intense positive feelings. Similarly, behaviourism says the behaviour is learned through experience, for example gambling is positively reinforced by a win. Both also involve the sensation of reward, a pleasurable rise in mood or euphoria, which makes the behaviour more

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likely to be repeated, and both give insight that can lead to treatment.

One difference is that feeling-state theory takes into account the person's beliefs, both negative and positive, and the thoughts and memories in the feeling-state, whereas behaviourism ignores beliefs and only considers the observable stimulus and the reinforcement that follows it. As a result, feeling-state theory explains more disorders, because behaviourism struggles to explain disorders where the behaviour does not appear rewarding to the individual, such as kleptomania when the stolen items are of no use or value to them.

2(a) The genetic explanation says schizophrenia is inherited. Gottesman and Shields (1972) reviewed adoption, sibling and twin studies. Adoption studies found an increased incidence of schizophrenia in adopted children whose biological parent had schizophrenia, and biological siblings of people with schizophrenia showed a much higher rate of the disorder. All twin studies found higher concordance for monozygotic (MZ) than dizygotic (DZ) twins; in their own study the rate was 58% for MZ twins and 12% for DZ twins, suggesting a large genetic input.

The biochemical explanation is the dopamine hypothesis: symptoms are caused by an excess of dopamine in the mid-brain and a reduction in the prefrontal cortex. High activity at D2 receptors in subcortical and limbic areas is linked to positive symptoms such as hallucinations, while negative and cognitive symptoms are linked to D1 receptor activity in the prefrontal cortex.

The cognitive explanation (Frith, 1992) says symptoms are due to faulty thinking. The patient's central monitoring system fails to recognise that thoughts, such as their inner voice, are self-generated, so they believe the thoughts come from an external source, which is experienced as hearing voices. Delusions may then be a way of explaining these hallucinations. Cognitive impairment could explain poverty of speech and disorganised thinking, and a less developed theory of mind makes it hard to understand others' actions, so the person may develop delusions to make

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sense of other people's behaviour.

2(b) All three explanations are individual explanations because they locate the cause inside the person, in their genes, their neurotransmitters or their thinking. However, MZ twins share 100% of their genes, yet the concordance rate in Gottesman and Shields was 58%, not 100%. This means situational factors, such as stress or family environment, must also play a part. The cognitive explanation can also be partly situational, as the type of self-talk a person has may be influenced by upbringing and culture. So a diathesis-stress view, combining individual and situational factors, is more complete.

The explanations are supported by evidence. Twin and adoption studies consistently show a genetic link, and antipsychotic drugs that block dopamine receptors reduce positive symptoms, supporting the dopamine hypothesis. However, this evidence is correlational: higher dopamine could be an effect of the disorder rather than its cause, and the drugs do not help every patient, especially with negative symptoms.

The biological explanations are reductionist, reducing a complex disorder to genes or one neurotransmitter, and deterministic, implying the person has no control over developing schizophrenia. The cognitive explanation is more holistic as it explains the content of symptoms, such as why voices seem external, but it describes faulty thinking rather than explaining where it comes from.

In terms of nature versus nurture, the genetic and biochemical explanations take the nature side while the cognitive one allows some role for nurture. The explanations are useful in everyday life, as the dopamine hypothesis led to antipsychotic medication and the cognitive explanation supports CBT. Overall, each explains part of the disorder, and the strongest account combines biological vulnerability with situational triggers.

Psychology and consumer behaviour

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3(a)	A competitor-focused sales technique focuses on the competition rather than on the product itself or the customer's needs. The salesperson emphasises why their product or store is better than a competitor's, for example a better price, better features, guarantees or after-sales service.
3(b)	In the first field experiment, selling boxes of candy in a supermarket, 54% of participants bought candy overall. In the disrupt-then-reframe condition ("the price is now 100 eurocents ... that's 1 euro. It's a bargain") 65% bought candy, compared with only 44% in the reframe-only condition ("the price is now 1 euro. It's a bargain"). In the second field experiment, students on a university campus were asked to join a student group. Overall 22% agreed, but 30% joined in the disrupt-then-reframe condition (300 eurocents ... that's 3 euros) compared with 13% in the reframe-only condition. This shows the technique works for less tangible things like membership as well as goods.
3(c)	One advantage of a field experiment is that it has higher ecological validity than a laboratory experiment. In the first two experiments by Kardes et al. the participants were genuine customers in a natural setting: shoppers in a supermarket being offered candy, and students on a university campus being asked to join a group. They were making real decisions with their own money, so their behaviour is likely to reflect how people really respond to sales techniques, and the results can be applied to real selling situations. A second advantage is that the researcher still has control over the independent variable, so cause and effect can be established while demand characteristics are reduced. Kardes et al. manipulated the wording of the sales pitch (disrupt-then-reframe or reframe-only) while keeping the product and price the

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same, so the rise from 44% to 65% buying candy can be attributed to the disruption. Because participants were an opportunity sample of genuine customers who did not know they were in a study, they could not guess the aim and change their behaviour, and with an independent measures design they could not become bored or learn about the study, which increases validity.

4(a) Shleifer (2012) describes Kahneman's two systems of thinking. System 1, thinking fast, is emotional, automatic, unconscious and effortless, so questions are answered quickly; it is used for everyday purchases such as milk and bread. System 2, thinking slow, is calculating, conscious, slow, controlled and effortful but lazy, and is used when buying expensive items such as a car or a house. Intuitive System 1 thinking can lead to errors in consumer decisions.

Choice blindness was shown by Hall et al. (2010) in a supermarket in Sweden with 180 customers. Participants tasted pairs of jams or smelled pairs of teas, chose the one they preferred and rated them on a 1 to 10 scale. They were then secretly given the one they had not preferred to sample again as if it were their choice. Most participants did not detect the swap, accepting the alternative as their first choice and explaining why they liked it.

Braun-LaTour et al. (2004) studied advertising and false memory. In study 1, 66 undergraduates saw either a truthful advert (shaking hands with Mickey Mouse at Disneyland) or a false one (shaking hands with Bugs Bunny, who is not a Disney character). They rated attitude, affect and likelihood of visiting Disneyland and reported memories of past visits. More participants in the false advert group remembered the handshake as a true memory, so post-event information in adverts influences memory. In study 2, 100 participants received information verbally, pictorially or both, and the pictorial group recalled the most false information.

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4(b)	The research is high in reliability. Despite being a field experiment, Hall et al. used a highly standardised procedure, with the same jars, the same tasting order and the same rating scale for every participant. Braun-LaTour et al. also used standardised adverts and questionnaires in all their experiments, and produced consistent results in the laboratory. Because the procedures are carefully designed they are easy to replicate to check whether the findings are consistent. However, Shleifer's article is a review of theory rather than a single study, so its reliability depends on the many studies it draws on. The research uses the experimental method, so there is control over variables and cause and effect can be established, e.g. the false advert caused false memories. However, the laboratory setting in Braun-LaTour lowers ecological validity, as viewing an advert in a study is not like seeing it at home. Hall et al. has higher ecological validity as it took place with real shoppers in a supermarket. Sampling limits generalisations. Braun-LaTour used American undergraduates, who may be more familiar with Disney adverts than other people, and Hall et al. sampled shoppers in one Swedish supermarket, so results may not apply to other cultures or to more expensive, System 2 purchases. There are ethical issues: both studies used deception, as participants did not know the products were swapped or that the advert was false, although they were debriefed. Self-report rating scales may also be affected by social desirability. The research is useful, as it shows advertisers that consumers can be influenced without awareness, which can also help consumers protect themselves. Overall, the research is reliable and useful but should be generalised with care.
	Psychology and health
5(a)	Unrealistic optimism is an error of judgement in which a person perceives other people to be at greater risk of illness and harm than themselves. They see

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	themselves as invulnerable to disease, so they are less likely to change unhealthy behaviour such as smoking.
5(b)	Janis and Feshbach used an independent groups design experiment with 200 high school students (mean age about 15). Each group of 50 was given a 15-minute lecture on dental hygiene. Group 1 (high fear) was given a lecture with slides showing diseased mouths and explanation of consequences including cancer. Group 2 (moderate fear) had a similar lecture with less disturbing pictures. Group 3 (minimal fear) heard about teeth and cavities without pictures or consequences. The control group had a lecture about the structure of the human eye. A questionnaire was given one week before the lecture, immediately after it and one week later to measure emotional reactions and how far students conformed to the dental hygiene advice.
5(c)	One ethical issue is protection from harm. Students in the high and moderate fear arousal conditions saw pictures of diseased mouths and heard explanations of serious illnesses such as cancer, which may have caused distress and anxiety. The high fear group may have been so affected that they became less likely to visit the dentist, which could harm their health. A full debrief would be needed to reassure them, but this is not clearly reported. A second ethical issue is informed consent. The participants were only about 15 years old and it is not clear whether they gave consent themselves or whether consent was given by parents or the school. If they were not told in advance what they would see, this also raises deception, especially as the high fear lecture linked poor hygiene to conditions with other causes. In addition, because the study was run as a school lecture, students may not have felt they had the right to withdraw. However, the study can be defended as their names were kept confidential and the lecture gave useful health advice.

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6(a) Types of non-adherence include not wanting to make a lifestyle change (e.g. diet), not following short-term advice such as a regime of pill-taking, not taking preventative measures (e.g. using condoms) and failing to attend further appointments. Problems include no improvement in health, becoming ill with a different health problem, financial costs when missed appointments cannot be used by others, wasted money on drugs, and danger from untaken drugs left within a child's reach.

Rational non-adherence means the patient makes a reasoned decision after a cost-benefit analysis, deciding it is too costly to adhere. Bulpitt (1994) argued that people focus on risks but rarely consider benefits. He looked at drug treatment for hypertension: risks included diabetes, gout and dry mouth, but these were either not serious or occurred at low rates, while benefits included a 40% reduction in strokes and a 44% reduction in coronary events. Patients rationally choose not to take medication because of the risks while ignoring the benefits.

The health belief model (Becker and Rosenstock) predicts that people make health decisions rationally. Whether they act depends on perceived vulnerability to and severity of the health problem, which together give perceived threat, plus self-efficacy, the perceived benefits of and barriers to the behaviour, modifying factors such as culture and education, and cues to action such as pain or a media campaign. Together these predict the likelihood of taking the recommended health action.

6(b) There are problems with generalisability. Theories such as the health belief model are based on a Western view of medicine and ignore the role of tradition and spirituality in other cultures, where alternative medicines may be used. Trust in practitioners and their status also varies between cultures. Access differs too: some countries have free health services, while in others insurance is needed and care

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may be far away, so reasons for non-adherence may differ. Bulpitt's work may have gender bias, as he looked at how impotence may affect non-adherence. However, the health belief model includes many factors, including modifying factors like culture, which makes it more generalisable.

The research considers individual and situational reasons. The health belief model and rational non-adherence focus on the individual's beliefs and decisions, but situational factors such as cost, appointment times and the practitioner's communication also affect adherence, so focusing on the individual may wrongly blame the patient.

The research is useful. Bulpitt shows that practitioners should explain the benefits of treatment as well as the risks, which could improve adherence and is cost effective, reducing wasted drugs and missed appointments. However, measuring non-adherence is difficult: self-reports may be affected by social desirability, while objective measures such as pill counts are more valid but do not show why patients do not adhere.

The model also assumes people are rational, yet much non-adherence is unintentional, such as simply forgetting. Overall, the research explains many reasons for non-adherence, but it needs testing in a wider range of cultures and health systems before it can be generalised.

Psychology and organisations

7(a) Alienated followers

Effective followers (star followers)

7(b) The LPI measures leadership in five distinct areas, each made up of 6 item statements, so 30 items in total. The areas are Model the Way (e.g. follows through on promises), Inspire a Shared Vision (e.g. talks about future trends),

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	Challenge the Process (e.g. seeks out challenging opportunities), Enable Others to Act (e.g. supports decisions people make on their own) and Encourage the Heart (e.g. gives team members appreciation). The leader completes the inventory and so do a number of observers, colleagues from various parts of the organisation. Each item is answered on a 10-point scale from 1 (almost never) to 10 (almost always), each number having a descriptor such as "seldom" or "fairly often". An average score for each item is calculated, so the leader can see how they score in each area and how far they agree with the observers.
7(c)	One strength is that the LPI gives a detailed and comprehensive assessment. It has 30 items covering five areas of leadership, and it is completed by the leader and by observers such as peers and managers. This means the leader can compare their self-assessment with how others see them, and can identify exactly where they need to develop, for example if they score low on "Encourage the Heart". Because the 10-point scale produces quantitative data, scores can be statistically analysed and compared over time. One weakness is the possibility of socially desirable responses. The leader chooses the observers, so they may pick colleagues who like them, and observers may give higher ratings to a manager to avoid upsetting them, especially if they fear the consequences. Also, some items may not be relevant to some observers, who may not know how to respond to an item that is not part of their working relationship. This reduces the validity of the scores, and as there is no qualitative data the reasons behind a score are not known.
8(a)	Shiftwork is when a worker does not do the same work pattern each week, e.g. 6am to 2pm one week and 2pm to 10pm the next. Rapid rotation means frequent shift changes, such as a metropolitan rota (2 day shifts, 2 twilight shifts, 2 night

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shifts, 2 days off) or the more complex continental rota. Slow rotation is when shifts change infrequently, e.g. twilight shifts for 3 weeks, 3 days off, then nights for 3 weeks. Pheasant (1991) argues slow rotation is better because it takes time for the body to adjust to a new shift pattern, so there is less disruption to circadian rhythms.

Knutsson (2003) reviewed articles on shiftwork and health. Little or no correlation was found with mortality. Gastrointestinal disease, including peptic ulcers, was significantly more common in shiftworkers, and studies in a variety of countries found a significant relationship with cardiovascular disease. Women working nights, such as nurses and flight attendants, had an increased risk of breast cancer, although exposure to carcinogens could not be controlled. Evidence for diabetes was lacking, though BMI was higher, and shiftwork was linked to premature birth, low birth weight and miscarriage.

Gold et al. (1992) surveyed 635 female nurses in Massachusetts. Compared with nurses working only day or evening shifts, rotators had more sleep disruption and nodded off more at work. They had twice the odds of nodding off while driving to or from work and twice the odds of an accident or error related to sleepiness, so applying circadian principles to schedules could improve safety for nurses and patients.

8(b)

Demand characteristics are quite high in Gold et al. because self-reports were used to find out hours of sleep, nodding off at work and errors. Nurses may have guessed the aim and exaggerated problems with rotating shifts, or under-reported errors to avoid looking incompetent. In contrast, demand characteristics are low in Knutsson, as it is a review article based on the incidence of illnesses such as ulcers and cardiovascular disease, which cannot be faked, so it is more valid.

Much of the research is correlational. Knutsson found links between shiftwork and illness, but cannot say shiftwork causes them, as other factors such as diet,

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smoking or carcinogens in the workplace may be responsible. Sampling also limits generalisation: Gold et al. studied only female nurses in one US state, so the findings may not apply to male workers or other jobs, although Knutsson includes many occupations and countries.

The research could be seen as reductionist and deterministic, reducing health problems to disrupted circadian rhythms and suggesting shiftworkers will become ill. Individual differences matter: some people are "night owls" who adapt to shifts well, so situational and individual factors interact. Nature also interacts with nurture, as the biological clock is reset by environmental cues like light.

The research is useful. Pheasant's ideas on slow rotation and Gold's findings can be applied to design schedules that reduce accidents, protecting workers, patients and the public, and reducing costs for employers. Overall, the evidence that shiftwork harms health and safety is strong, but self-report studies should be checked with objective measures.

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PSYCHOLOGY **9990/32**

Paper 3 Specialist Options: Theory **October/November 2020**

1 hour 30 minutes

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You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

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

INFORMATION

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

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Psychology and abnormality

Answer **all** questions.

1 **(a)** Outline **two** characteristics of schizophrenia. [2]

(b) Describe token economy (Paul and Lentz, 1977) as a treatment for schizophrenia and delusional disorder. [4]

(c) Discuss the ethics of using token economies as a treatment for schizophrenia and delusional disorder. [6]

2 **(a)** Describe explanations of obsessive-compulsive disorder (OCD). [8]

(b) Evaluate explanations of obsessive-compulsive disorder (OCD), including a discussion of determinism. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Identify **two** common menu design mistakes, as outlined by Pavesic (2005). [2]

(b) Describe **two** findings of the study by Gil et al. (2009) on shopper movement patterns. [4]

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

4 **(a)** Describe what psychologists have discovered about choice heuristics in consumer decision-making (availability/representativeness, anchoring and purchase quantity decisions, pre-cognitive decisions). [8]

(b) Evaluate what psychologists have discovered about choice heuristics in consumer decision-making (availability/representativeness, anchoring and purchase quantity decisions, pre-cognitive decisions), including a discussion of ecological validity. [10]

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Psychology and health

Answer **all** questions.

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

(b) Describe the UAB pain behaviour scale as a measure of pain. [4]

(c) Explain **two** strengths of the UAB pain behaviour scale. [6]

6 **(a)** Describe what psychologists have discovered about practitioner and patient interpersonal skills (non-verbal communications and verbal communications). [8]

(b) Evaluate what psychologists have discovered about practitioner and patient interpersonal skills (non-verbal communications and verbal communications), including a discussion of quantitative and qualitative data. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Explain what is meant by a 'continental rota' in shiftwork. [2]

(b) Outline **two** types of bullying at work from the study by Einarsen (1999). [4]

(c) Explain **two** weaknesses of the study by Einarsen (1999). [6]

8 **(a)** Describe what psychologists have discovered about group decision-making in organisations. [8]

(b) Evaluate what psychologists have discovered about group decision-making in organisations, including a discussion of generalisations. [10]

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Question number

Answers for paper 9990/32

Psychology and abnormality

1(a) Positive symptoms: hallucinations, e.g. hearing voices that are not there.

Negative symptoms: flattened affect, e.g. showing little or no emotion.

1(b) A token economy is based on operant conditioning. Patients with schizophrenia, usually in institutional care, are rewarded with tokens (secondary reinforcers) for desirable behaviours such as making their beds, taking medication, self-care, engaging socially and attending therapy sessions. The tokens can be exchanged for luxury items such as sweets, cigarettes, clothing or TV time (primary reinforcers). In some cases tokens can be removed for undesirable behaviours such as angry outbursts. Paul and Lentz found that this social learning programme was more effective than milieu therapy or routine hospital care.

1(c) One ethical problem is informed consent. Patients with schizophrenia are vulnerable and, especially in institutional care, may not be capable of understanding what the programme involves, so they may not be able to give fully informed consent. Linked to this, they may be unable to withdraw from the scheme without losing privileges, so they are effectively coerced into taking part, and basic items they would normally have may be turned into rewards.

A second issue is psychological harm. Patients may feel they are being judged negatively, or punished by losing tokens, merely for showing symptoms of a disorder over which they have little control. This could lower self-esteem and is a

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form of control by staff.

However, the token economy can be ethical. Patients can be briefed and made fully aware of why they are engaging in the programme and how it will help them, and no deception is involved. It also benefits patients by teaching self-care and social skills, helping them to live more independently, so the benefits may outweigh the costs if it is run carefully.

2(a) Biomedical explanations: genetically, genes such as PTPRD, SLITRK3 and DRD4 (related to dopamine uptake) have been found to have a possible role in OCD. Biochemically, oxytocin dysfunction may increase worries and fear of certain situations with the belief that survival could be threatened. Neurologically, abnormalities in brain structure and function are involved: the basal ganglia are linked to obsessive thinking, and the orbitofrontal cortex and anterior cingulate gyrus check warning messages about threats. If the basal ganglia no longer receive the "done" message, the patient keeps getting signals to perform survival-type activities, such as hand-washing, even when they have already been done.

The cognitive and behavioural explanation: the cognitive part is obsessive thinking based on faulty reasoning, e.g. "the toilet is covered in harmful germs that could kill me", which increases stress and anxiety, and stressful situations make the thoughts worse. The behavioural part is that this leads to compulsive behaviour, such as washing, which reduces the anxiety for a time. Removal of something unpleasant is negative reinforcement, so the compulsion is strengthened.

The psychodynamic explanation says OCD arises from the anal stage of psychosexual development. Conflict between parent and child over toilet training may lead the child to become fixated, anally retentive or anally expulsive. Compulsive cleaning or other rituals may soothe this early trauma. OCD could also come from conflict between the id and the superego, with obsessive cleaning acting as an ego defence mechanism.

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2(b)

To an extent all explanations of OCD are deterministic. The biomedical explanation shows biological determinism, as we have no free will over our genes, oxytocin levels or brain structure. The psychodynamic explanation shows psychic determinism, as OCD is caused by unconscious conflicts from early childhood which the person cannot control. The cognitive and behavioural explanation is environmental determinism, as the compulsion is shaped by reinforcement, but it is less deterministic because people can learn to change their thinking, as in CBT. Determinism can be useful, as it allows causes to be found, but may make patients feel they cannot recover.

In terms of nature and nurture, the biomedical explanation is on the nature side, while the cognitive, behavioural and psychodynamic explanations focus on nurture and experience. As OCD is not fully explained by genes, a combination of the two is likely.

The biomedical explanation is scientific, as genes and brain activity can be measured objectively, e.g. using brain scans. The psychodynamic explanation is unscientific because unconscious conflicts cannot be observed or tested, so it cannot be falsified. The cognitive and behavioural explanation is reductionist, focusing only on thoughts and reinforcement, and the biomedical one reduces OCD to biology, ignoring the patient's thoughts.

The explanations are useful. The cognitive and behavioural explanation has led to effective treatments such as CBT and exposure and response prevention, and the biomedical explanation supports drug treatments. The psychodynamic explanation has fewer practical applications. Overall, the cognitive and behavioural explanation is the most useful and least deterministic, but combining it with biomedical factors gives the fullest picture.

Psychology and consumer behaviour

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3(a)	The menu is hard to read because of the font or colour choices, especially in low light. Prices are over-emphasised.
3(b)	One finding was that there were four distinct spatial patterns of movement around the store: the short trip, the round trip, the central trip and the wave trip, with wave and round trips being the most common. A second finding was that, combining movement patterns with the other data, five types of shopper could be identified. The explorer was almost always female, doing a regular main shop and covering a lot of the store. The tourist did a regular top-up shop but still covered a lot of floor space. The native was the most common type, with a shorter duration than the explorer. The specialist, with more males, covered only particular areas, and the raider, also more often male and almost always alone, covered a large area in a short time.
3(c)	One strength is that the study used an objective measure of movement. The shoppers' paths were tracked remotely and electronically, so there was no need for a researcher to follow them around the store, which would have changed their behaviour. The data on routes and duration does not depend on interpretation, which increases validity. It also had a large sample of 480 shoppers in a real store, giving high ecological validity, as they were doing shopping they had already planned. One weakness is that the study is reductionist. It assumes that all shoppers fit into one of the five types, such as explorer or raider, all of the time. However, a person may be an explorer one day, doing a main shop, and a raider the next when in a hurry, or combine two types in one trip. Reducing complex shopping behaviour to a few categories means the findings may not capture individual differences, and

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	as the study was done in only one UK store, mostly with female shoppers, it is hard to generalise to other shops and cultures.
4(a)	A heuristic is a mental shortcut that helps us make quick decisions. The availability heuristic is based on how easily things come to mind: if your car of one brand keeps breaking down, you judge the brand unfavourably even without statistics, because your experience is more available. The representativeness heuristic means choosing by comparing with the best-known example: a new smartphone is judged as good quality the more it resembles the market leader, which is why companies copy the leader's packaging. Wansink et al. (1998) investigated what makes people buy a certain number of units. In a field experiment in 86 shops, 13 products were sold as single units ("50c each") or multiple units ("6 for $3"); multiple-unit pricing increased sales by 32%. In 3 supermarkets in Iowa, Campbell's soup was discounted by about 12% with purchase limits of none, 4 or 12; the average bought was 3.3, 3.7 and 7 cans respectively, so the limit acted as an anchor. In lab experiments with undergraduates, selling anchors such as "grab 6 for studying" and expansion anchors such as "buy for all your friends" increased purchase intentions. Knutson et al. (2007) scanned 26 participants with fMRI while they decided whether to buy products with $20: product shown for 4s, then product and price for 4s, then 4s to choose. Product preference correlated with nucleus accumbens activation, the medial prefrontal cortex was activated when the price seemed suitable and deactivated when it seemed too high, and excessive prices activated the insula, while buying was linked to its deactivation. Purchasing decisions could be predicted from brain activity before the choice.
4(b)	Ecological validity varies. Wansink et al.'s field experiments have high ecological validity, as they used real customers making real purchases in shops and

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supermarkets. Their laboratory experiments are lower, as students only stated purchase intentions and may not have bought the products in real life. Knutson et al. is lowest: participants lay in an artificial fMRI scanner and pressed buttons, although they were shown genuine products and did spend real money, decisions are not made like this in a shop.

Wansink's lab studies relied on self-reports of purchase intentions, which may be affected by social desirability and do not always match behaviour. Knutson used objective brain scans, which are more scientific, although activity in an area does not explain why a decision was made, so it is reductionist.

The research has practical applications. Retailers can use multiple-unit pricing and purchase limits to increase sales, which is useful for businesses, and consumers can learn to recognise anchors. However, this raises ethical issues, as it could be used to manipulate people into buying more than they need.

The research suggests situational explanations, as the anchor or price in the environment drives the choice, but Knutson shows individual differences in brain activity, so both play a part. Samples are limited too, e.g. Knutson's 26 participants and American students and shoppers. Overall, the field studies are the most ecologically valid, while the lab and fMRI studies give control but should be generalised with caution.

Psychology and health

5(a) Acute pain is intense pain with a sudden onset, usually sharp, that lasts until healing begins (less than about 6 months), e.g. from a broken bone, appendicitis, surgery or childbirth.

5(b) The University of Alabama at Birmingham (UAB) Pain Behaviour Scale is a measure of pain based on a clinician observing the patient. There are 10 items:

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	verbal complaints, non-verbal complaints (e.g. groans), down-time (time spent lying down because of pain), facial grimaces, standing posture, mobility, body language (e.g. rubbing the site of pain), use of supportive equipment, stationary movement (shifting) and medication. Each item is scored 0, 0.5 or 1 based on the clinician's observation, and the scores are added; the higher the total, the more marked the pain.
5(c)	One strength is that the scale is reasonably objective and reliable. The clinician observes set behaviours, such as grimacing or use of supportive equipment, and gives each a score of 0, 0.5 or 1, rather than relying on the patient's own description. Although the clinician uses some judgement, using it regularly allows them to standardise their ratings, and reliability can easily be checked by two clinicians rating the same patient. It is also less likely that the patient can be deceptive about their pain, increasing validity. A second strength is that it is quick and easy to administer and understand. It has only 10 items with three simple scores, so it can be completed during a ward round without needing the patient to read or fill in a questionnaire, which is useful for patients who are very ill or have difficulty communicating. Because it can be repeated consistently, the progression of pain can be monitored over time to make sure the patient receives the best pain management.
6(a)	Non-verbal communication was studied by McKinstry and Wang (1991). Patients looked at photographs of a male doctor in five styles of dress and a female doctor in three, from formal suit and tie or white coat to denim jeans or casual clothes. They rated on a 0 to 5 scale how happy they would be to see each doctor the first time, rated confidence in the doctor's ability, and answered closed questions about doctors' dress. 28% said they would be unhappy to consult one of the doctors, usually an informally dressed one, and 41% said they would have more

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confidence in a doctor based on appearance. The male doctor in a suit and tie and the female doctor in a white coat were most preferred.

Verbal communication was studied by McKinlay (1975), who interviewed lower class women, users and under-users of maternity services in Aberdeen, about words used by practitioners, scored independently. Under-users had the lowest understanding, though only for two words, and the women often understood the words better than the practitioners had expected.

Ley (1988) found that patients' forgetting of practitioner advice is linked to the order, amount, nature and perceived importance of information, and to patient factors such as age, anxiety and medical knowledge. He proposed that practitioners should use simple language, give key information first, give specific advice in categories (diagnosis, treatment, prognosis), repeat key points and summarise at the end.

6(b) The research mainly collected quantitative data. McKinstry and Wang gathered a large amount from 475 participants using rating scales and closed questions, which could be analysed by social class and age and is easy to compare. However, quantitative data lacks depth, so it does not explain why patients preferred a suit or white coat. They did gather a little qualitative data by asking which clothes patients would object to. McKinlay's self-report data also appears mostly quantitative, scoring understanding of words, which is objective but loses the detail of what women thought the words meant. Arguably, both turned qualitative answers into numbers, combining the benefits of both types.

Generalisability is limited. McKinlay studied only lower class women in Aberdeen using maternity services, so findings may not apply to men or other cultures, and preferences for doctors' dress may differ between cultures and have changed since 1991.

There are issues with validity. McKinstry and Wang used photographs rather than

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real consultations, so patients may react differently to a real doctor, and self-reports may involve socially desirable answers. However, using the same photographs for everyone makes the study standardised and reliable.

The research has practical applications. Ley's suggestions can improve recall of advice and so adherence, McKinlay shows practitioners should not underestimate patients, and McKinstry and Wang suggest doctors dress formally to increase confidence. Overall, the research is useful, but more qualitative data would explain patients' views more fully.

Psychology and organisations

7(a) A continental rota is a type of rapid rotation shift pattern, more complex than the metropolitan rota, where the worker changes shift every few days, e.g. 2 day shifts, 3 twilight shifts, 2 night shifts, then 2 days off, 3 day shifts, 2 twilight shifts and so on over a four-week cycle that then repeats.

7(b) Work-related bullying: making the person's work difficult, for example by constantly changing their work tasks, giving them impossible deadlines or withholding information they need.

Personal attacks: attacks on the person or their private life, for example ridicule, insulting remarks, gossip and rumours, or being yelled at and humiliated in public.

7(c) One weakness is that the study relies on self-reports. Einarsen's review is based on studies in which employees reported their own experiences of bullying in questionnaires and interviews. These are prone to demand characteristics and social desirability: victims may exaggerate or under-report bullying, for example because of embarrassment or fear of the bully, and people may define bullying differently. This reduces the validity of the findings about how common each type of bullying

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is.

A second weakness is that it is a review article, so the data is second hand. Einarsen did not collect the data himself, so he could not control how it was gathered, and the original studies may have used different definitions, samples and methods, making them hard to compare. Also, although the review is comprehensive, it describes the types and causes of bullying but does not offer clear solutions for organisations to stop it, which reduces its practical usefulness.

8(a) Wedley and Field (1984) looked at the pre-planning stage of decision-making, the decisions taken before beginning to find a solution. These include the type of leadership needed, whether others should be involved, how information will be gathered, who to contact and how to generate alternatives. Once the process has begun it is difficult to stop and may lead to poor decisions, so pre-planning gives more flexibility.

Groupthink (Janis, 1971) is when the desire for harmony in a group and a lack of critical evaluation results in an irrational decision that individuals would not have made alone, as in the Bay of Pigs invasion. There are 8 symptoms: illusion of invulnerability, illusion of morality, shared negative stereotypes, collective rationalisation, self-censorship, illusion of unanimity, direct pressure to conform and self-appointed "mindguards". Strategies to avoid it include promoting open enquiry, using subgroups given the same task, leaders admitting mistakes so members feel free to criticise, and holding second-chance meetings.

Forsyth (2006) described cognitive limitations and errors in group decisions, which can occur before, during and after meetings. There are three "sins": sins of commission (misusing information), sins of omission (overlooking information) and sins of imprecision (using inappropriate heuristics). Confirmation bias, seeking information that confirms rather than contradicts beliefs, also causes errors.

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8(b)

There are problems with generalisations. Wedley and Field offer suggestions to improve decision-making, but these cannot apply in all situations: decisions can be short or long term, affect everybody or one person, and be important or trivial, so it does not make sense to pre-plan every decision in the same way. Janis based groupthink on American political decisions like the Bay of Pigs, so it may not apply to all cultures or all organisations, such as collectivist cultures where agreement is valued, which limits its usefulness.

The research is reductionist. Groupthink reduces complex group decisions to a list of symptoms, ignoring factors such as time pressure or the information available. Forsyth's "sins" also simplify the many ways in which decisions go wrong.

The methods have low ecological validity in places. Janis used case studies of historical decisions, which were analysed after the event, so they are open to interpretation and hindsight bias, and lab studies of groupthink use artificial tasks that lack real consequences.

The research considers both individual and situational factors: groupthink is mainly situational, caused by group cohesion and pressure, while Forsyth's cognitive errors and confirmation bias are individual. The research has practical applications, as organisations can use subgroups and second-chance meetings to avoid groupthink, and pre-planning to improve decisions. Overall, the research is useful, but its ideas should be adapted to the type of decision and organisation rather than generalised to all.

Cambridge Assessment International Education

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PSYCHOLOGY **9990/33**

Paper 3 Specialist Options: Theory **October/November 2020**

1 hour 30 minutes

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You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

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

INFORMATION

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

This document has **4** pages. Blank pages are indicated.

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Psychology and abnormality

Answer **all** questions.

1 **(a)** Outline **one** biochemical treatment for impulse control disorders and non-substance addictive disorder. [2]

(b) Describe the feeling-state theory (Miller, 2010) as a cognitive cause of impulse control disorders and non-substance addictive disorder. [4]

(c) Explain **one** similarity and **one** difference between cognitive explanations and behavioural explanations of impulse control disorders/non-substance addictive disorder. [6]

2 **(a)** Describe explanations of schizophrenia and delusional disorder. [8]

(b) Evaluate explanations of schizophrenia and delusional disorder, including a discussion of the individual versus situational debate. [10]

Psychology and consumer behaviour

Answer **all** questions.

3 **(a)** Explain what is meant by a 'competitor-focused' sales technique. [2]

(b) Describe **two** findings from the study by Kardes et al. (2007) on the disrupt-then-reframe technique to sell a product. [4]

(c) Discuss **two** advantages of field experiments, using examples from the study by Kardes et al. [6]

4 **(a)** Describe what psychologists have discovered about intuitive thinking and its imperfections in consumer decision-making (thinking fast and thinking slow, choice blindness, advertising and false memory). [8]

(b) Evaluate what psychologists have discovered about intuitive thinking and its imperfections in consumer decision-making (thinking fast and thinking slow, choice blindness, advertising and false memory), including a discussion of reliability. [10]

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Psychology and health

Answer **all** questions.

5 **(a)** Explain what is meant by 'unrealistic optimism' (Weinstein, 1980) in relation to individual factors in changing health beliefs. [2]

(b) Describe the procedure used in the study by Janis and Feshbach (1953) on fear arousal. [4]

(c) Discuss **two** ethical issues in relation to the study by Janis and Feshbach. [6]

6 **(a)** Describe what psychologists have learned about types of non-adherence and reasons why patients do not adhere to medical advice. [8]

(b) Evaluate what psychologists have learned about types of non-adherence and reasons why patients do not adhere to medical advice, including a discussion of generalisability. [10]

Psychology and organisations

Answer **all** questions.

7 **(a)** Identify **two** 'followership' types (Kelley, 1988). [2]

(b) Describe the Leadership Practices Inventory (LPI) devised by Kouzes and Posner (1987). [4]

(c) Explain **one** strength and **one** weakness of the Leadership Practices Inventory. [6]

8 **(a)** Describe what psychologists have discovered about temporal conditions of work environments. [8]

(b) Evaluate what psychologists have discovered about temporal conditions of work environments, including a discussion of demand characteristics. [10]

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

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Answers for paper 9990/33

Psychology and abnormality

1(a) One biochemical treatment is the use of opioid antagonists such as naltrexone. These drugs block the opioid receptors in the brain, so the brain cannot receive opioids and the person no longer gets the pleasurable "high" from the behaviour (e.g. gambling or stealing), which reduces the urge to repeat it.

1(b) Miller's feeling-state theory is based on state-dependent memory. An impulse control disorder forms when intense positive feelings become linked to a particular activity or object, creating a state-dependent memory called a feeling-state. The feeling-state is made up of all the sensations, emotions, thoughts and memories experienced with that activity, including physical arousal such as the release of adrenaline. For example, in pyromania the excitement felt when setting a fire becomes fixed to fire-setting. Later, when a triggering event, object or activity is experienced, the person is reminded of the feeling-state and this creates a compulsion to perform the behaviour again to re-experience the feeling.

1(c) One similarity is that both explanations say the disorder forms through experience. In feeling-state theory, the feeling-state cannot develop unless the person has actually experienced the object or activity together with intense positive feelings. Similarly, behaviourism says the behaviour is learned through experience, for example gambling is positively reinforced by a win. Both also involve the sensation of reward, a pleasurable rise in mood or euphoria, which makes the behaviour more

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likely to be repeated, and both give insight that can lead to treatment.

One difference is that feeling-state theory takes into account the person's beliefs, both negative and positive, and the thoughts and memories in the feeling-state, whereas behaviourism ignores beliefs and only considers the observable stimulus and the reinforcement that follows it. As a result, feeling-state theory explains more disorders, because behaviourism struggles to explain disorders where the behaviour does not appear rewarding to the individual, such as kleptomania when the stolen items are of no use or value to them.

2(a) The genetic explanation says schizophrenia is inherited. Gottesman and Shields (1972) reviewed adoption, sibling and twin studies. Adoption studies found an increased incidence of schizophrenia in adopted children whose biological parent had schizophrenia, and biological siblings of people with schizophrenia showed a much higher rate of the disorder. All twin studies found higher concordance for monozygotic (MZ) than dizygotic (DZ) twins; in their own study the rate was 58% for MZ twins and 12% for DZ twins, suggesting a large genetic input.

The biochemical explanation is the dopamine hypothesis: symptoms are caused by an excess of dopamine in the mid-brain and a reduction in the prefrontal cortex. High activity at D2 receptors in subcortical and limbic areas is linked to positive symptoms such as hallucinations, while negative and cognitive symptoms are linked to D1 receptor activity in the prefrontal cortex.

The cognitive explanation (Frith, 1992) says symptoms are due to faulty thinking. The patient's central monitoring system fails to recognise that thoughts, such as their inner voice, are self-generated, so they believe the thoughts come from an external source, which is experienced as hearing voices. Delusions may then be a way of explaining these hallucinations. Cognitive impairment could explain poverty of speech and disorganised thinking, and a less developed theory of mind makes it hard to understand others' actions, so the person may develop delusions to make

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sense of other people's behaviour.

2(b) All three explanations are individual explanations because they locate the cause inside the person, in their genes, their neurotransmitters or their thinking. However, MZ twins share 100% of their genes, yet the concordance rate in Gottesman and Shields was 58%, not 100%. This means situational factors, such as stress or family environment, must also play a part. The cognitive explanation can also be partly situational, as the type of self-talk a person has may be influenced by upbringing and culture. So a diathesis-stress view, combining individual and situational factors, is more complete.

The explanations are supported by evidence. Twin and adoption studies consistently show a genetic link, and antipsychotic drugs that block dopamine receptors reduce positive symptoms, supporting the dopamine hypothesis. However, this evidence is correlational: higher dopamine could be an effect of the disorder rather than its cause, and the drugs do not help every patient, especially with negative symptoms.

The biological explanations are reductionist, reducing a complex disorder to genes or one neurotransmitter, and deterministic, implying the person has no control over developing schizophrenia. The cognitive explanation is more holistic as it explains the content of symptoms, such as why voices seem external, but it describes faulty thinking rather than explaining where it comes from.

In terms of nature versus nurture, the genetic and biochemical explanations take the nature side while the cognitive one allows some role for nurture. The explanations are useful in everyday life, as the dopamine hypothesis led to antipsychotic medication and the cognitive explanation supports CBT. Overall, each explains part of the disorder, and the strongest account combines biological vulnerability with situational triggers.

Psychology and consumer behaviour

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3(a)	A competitor-focused sales technique focuses on the competition rather than on the product itself or the customer's needs. The salesperson emphasises why their product or store is better than a competitor's, for example a better price, better features, guarantees or after-sales service.
3(b)	In the first field experiment, selling boxes of candy in a supermarket, 54% of participants bought candy overall. In the disrupt-then-reframe condition ("the price is now 100 eurocents ... that's 1 euro. It's a bargain") 65% bought candy, compared with only 44% in the reframe-only condition ("the price is now 1 euro. It's a bargain"). In the second field experiment, students on a university campus were asked to join a student group. Overall 22% agreed, but 30% joined in the disrupt-then-reframe condition (300 eurocents ... that's 3 euros) compared with 13% in the reframe-only condition. This shows the technique works for less tangible things like membership as well as goods.
3(c)	One advantage of a field experiment is that it has higher ecological validity than a laboratory experiment. In the first two experiments by Kardes et al. the participants were genuine customers in a natural setting: shoppers in a supermarket being offered candy, and students on a university campus being asked to join a group. They were making real decisions with their own money, so their behaviour is likely to reflect how people really respond to sales techniques, and the results can be applied to real selling situations. A second advantage is that the researcher still has control over the independent variable, so cause and effect can be established while demand characteristics are reduced. Kardes et al. manipulated the wording of the sales pitch (disrupt-then-reframe or reframe-only) while keeping the product and price the

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same, so the rise from 44% to 65% buying candy can be attributed to the disruption. Because participants were an opportunity sample of genuine customers who did not know they were in a study, they could not guess the aim and change their behaviour, and with an independent measures design they could not become bored or learn about the study, which increases validity.

4(a) Shleifer (2012) describes Kahneman's two systems of thinking. System 1, thinking fast, is emotional, automatic, unconscious and effortless, so questions are answered quickly; it is used for everyday purchases such as milk and bread. System 2, thinking slow, is calculating, conscious, slow, controlled and effortful but lazy, and is used when buying expensive items such as a car or a house. Intuitive System 1 thinking can lead to errors in consumer decisions.

Choice blindness was shown by Hall et al. (2010) in a supermarket in Sweden with 180 customers. Participants tasted pairs of jams or smelled pairs of teas, chose the one they preferred and rated them on a 1 to 10 scale. They were then secretly given the one they had not preferred to sample again as if it were their choice. Most participants did not detect the swap, accepting the alternative as their first choice and explaining why they liked it.

Braun-LaTour et al. (2004) studied advertising and false memory. In study 1, 66 undergraduates saw either a truthful advert (shaking hands with Mickey Mouse at Disneyland) or a false one (shaking hands with Bugs Bunny, who is not a Disney character). They rated attitude, affect and likelihood of visiting Disneyland and reported memories of past visits. More participants in the false advert group remembered the handshake as a true memory, so post-event information in adverts influences memory. In study 2, 100 participants received information verbally, pictorially or both, and the pictorial group recalled the most false information.

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4(b)	The research is high in reliability. Despite being a field experiment, Hall et al. used a highly standardised procedure, with the same jars, the same tasting order and the same rating scale for every participant. Braun-LaTour et al. also used standardised adverts and questionnaires in all their experiments, and produced consistent results in the laboratory. Because the procedures are carefully designed they are easy to replicate to check whether the findings are consistent. However, Shleifer's article is a review of theory rather than a single study, so its reliability depends on the many studies it draws on. The research uses the experimental method, so there is control over variables and cause and effect can be established, e.g. the false advert caused false memories. However, the laboratory setting in Braun-LaTour lowers ecological validity, as viewing an advert in a study is not like seeing it at home. Hall et al. has higher ecological validity as it took place with real shoppers in a supermarket. Sampling limits generalisations. Braun-LaTour used American undergraduates, who may be more familiar with Disney adverts than other people, and Hall et al. sampled shoppers in one Swedish supermarket, so results may not apply to other cultures or to more expensive, System 2 purchases. There are ethical issues: both studies used deception, as participants did not know the products were swapped or that the advert was false, although they were debriefed. Self-report rating scales may also be affected by social desirability. The research is useful, as it shows advertisers that consumers can be influenced without awareness, which can also help consumers protect themselves. Overall, the research is reliable and useful but should be generalised with care.
	Psychology and health
5(a)	Unrealistic optimism is an error of judgement in which a person perceives other people to be at greater risk of illness and harm than themselves. They see

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	themselves as invulnerable to disease, so they are less likely to change unhealthy behaviour such as smoking.
5(b)	Janis and Feshbach used an independent groups design experiment with 200 high school students (mean age about 15). Each group of 50 was given a 15-minute lecture on dental hygiene. Group 1 (high fear) was given a lecture with slides showing diseased mouths and explanation of consequences including cancer. Group 2 (moderate fear) had a similar lecture with less disturbing pictures. Group 3 (minimal fear) heard about teeth and cavities without pictures or consequences. The control group had a lecture about the structure of the human eye. A questionnaire was given one week before the lecture, immediately after it and one week later to measure emotional reactions and how far students conformed to the dental hygiene advice.
5(c)	One ethical issue is protection from harm. Students in the high and moderate fear arousal conditions saw pictures of diseased mouths and heard explanations of serious illnesses such as cancer, which may have caused distress and anxiety. The high fear group may have been so affected that they became less likely to visit the dentist, which could harm their health. A full debrief would be needed to reassure them, but this is not clearly reported. A second ethical issue is informed consent. The participants were only about 15 years old and it is not clear whether they gave consent themselves or whether consent was given by parents or the school. If they were not told in advance what they would see, this also raises deception, especially as the high fear lecture linked poor hygiene to conditions with other causes. In addition, because the study was run as a school lecture, students may not have felt they had the right to withdraw. However, the study can be defended as their names were kept confidential and the lecture gave useful health advice.

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6(a)	Types of non-adherence include not wanting to make a lifestyle change (e.g. diet), not following short-term advice such as a regime of pill-taking, not taking preventative measures (e.g. using condoms) and failing to attend further appointments. Problems include no improvement in health, becoming ill with a different health problem, financial costs when missed appointments cannot be used by others, wasted money on drugs, and danger from untaken drugs left within a child's reach. Rational non-adherence means the patient makes a reasoned decision after a cost-benefit analysis, deciding it is too costly to adhere. Bulpitt (1994) argued that people focus on risks but rarely consider benefits. He looked at drug treatment for hypertension: risks included diabetes, gout and dry mouth, but these were either not serious or occurred at low rates, while benefits included a 40% reduction in strokes and a 44% reduction in coronary events. Patients rationally choose not to take medication because of the risks while ignoring the benefits. The health belief model (Becker and Rosenstock) predicts that people make health decisions rationally. Whether they act depends on perceived vulnerability to and severity of the health problem, which together give perceived threat, plus self-efficacy, the perceived benefits of and barriers to the behaviour, modifying factors such as culture and education, and cues to action such as pain or a media campaign. Together these predict the likelihood of taking the recommended health action.
6(b)	There are problems with generalisability. Theories such as the health belief model are based on a Western view of medicine and ignore the role of tradition and spirituality in other cultures, where alternative medicines may be used. Trust in practitioners and their status also varies between cultures. Access differs too: some countries have free health services, while in others insurance is needed and care

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may be far away, so reasons for non-adherence may differ. Bulpitt's work may have gender bias, as he looked at how impotence may affect non-adherence. However, the health belief model includes many factors, including modifying factors like culture, which makes it more generalisable.

The research considers individual and situational reasons. The health belief model and rational non-adherence focus on the individual's beliefs and decisions, but situational factors such as cost, appointment times and the practitioner's communication also affect adherence, so focusing on the individual may wrongly blame the patient.

The research is useful. Bulpitt shows that practitioners should explain the benefits of treatment as well as the risks, which could improve adherence and is cost effective, reducing wasted drugs and missed appointments. However, measuring non-adherence is difficult: self-reports may be affected by social desirability, while objective measures such as pill counts are more valid but do not show why patients do not adhere.

The model also assumes people are rational, yet much non-adherence is unintentional, such as simply forgetting. Overall, the research explains many reasons for non-adherence, but it needs testing in a wider range of cultures and health systems before it can be generalised.

Psychology and organisations

7(a) Alienated followers

Effective followers (star followers)

7(b) The LPI measures leadership in five distinct areas, each made up of 6 item statements, so 30 items in total. The areas are Model the Way (e.g. follows through on promises), Inspire a Shared Vision (e.g. talks about future trends),

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	Challenge the Process (e.g. seeks out challenging opportunities), Enable Others to Act (e.g. supports decisions people make on their own) and Encourage the Heart (e.g. gives team members appreciation). The leader completes the inventory and so do a number of observers, colleagues from various parts of the organisation. Each item is answered on a 10-point scale from 1 (almost never) to 10 (almost always), each number having a descriptor such as "seldom" or "fairly often". An average score for each item is calculated, so the leader can see how they score in each area and how far they agree with the observers.
7(c)	One strength is that the LPI gives a detailed and comprehensive assessment. It has 30 items covering five areas of leadership, and it is completed by the leader and by observers such as peers and managers. This means the leader can compare their self-assessment with how others see them, and can identify exactly where they need to develop, for example if they score low on "Encourage the Heart". Because the 10-point scale produces quantitative data, scores can be statistically analysed and compared over time. One weakness is the possibility of socially desirable responses. The leader chooses the observers, so they may pick colleagues who like them, and observers may give higher ratings to a manager to avoid upsetting them, especially if they fear the consequences. Also, some items may not be relevant to some observers, who may not know how to respond to an item that is not part of their working relationship. This reduces the validity of the scores, and as there is no qualitative data the reasons behind a score are not known.
8(a)	Shiftwork is when a worker does not do the same work pattern each week, e.g. 6am to 2pm one week and 2pm to 10pm the next. Rapid rotation means frequent shift changes, such as a metropolitan rota (2 day shifts, 2 twilight shifts, 2 night

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shifts, 2 days off) or the more complex continental rota. Slow rotation is when shifts change infrequently, e.g. twilight shifts for 3 weeks, 3 days off, then nights for 3 weeks. Pheasant (1991) argues slow rotation is better because it takes time for the body to adjust to a new shift pattern, so there is less disruption to circadian rhythms.

Knutsson (2003) reviewed articles on shiftwork and health. Little or no correlation was found with mortality. Gastrointestinal disease, including peptic ulcers, was significantly more common in shiftworkers, and studies in a variety of countries found a significant relationship with cardiovascular disease. Women working nights, such as nurses and flight attendants, had an increased risk of breast cancer, although exposure to carcinogens could not be controlled. Evidence for diabetes was lacking, though BMI was higher, and shiftwork was linked to premature birth, low birth weight and miscarriage.

Gold et al. (1992) surveyed 635 female nurses in Massachusetts. Compared with nurses working only day or evening shifts, rotators had more sleep disruption and nodded off more at work. They had twice the odds of nodding off while driving to or from work and twice the odds of an accident or error related to sleepiness, so applying circadian principles to schedules could improve safety for nurses and patients.

8(b)

Demand characteristics are quite high in Gold et al. because self-reports were used to find out hours of sleep, nodding off at work and errors. Nurses may have guessed the aim and exaggerated problems with rotating shifts, or under-reported errors to avoid looking incompetent. In contrast, demand characteristics are low in Knutsson, as it is a review article based on the incidence of illnesses such as ulcers and cardiovascular disease, which cannot be faked, so it is more valid.

Much of the research is correlational. Knutsson found links between shiftwork and illness, but cannot say shiftwork causes them, as other factors such as diet,

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smoking or carcinogens in the workplace may be responsible. Sampling also limits generalisation: Gold et al. studied only female nurses in one US state, so the findings may not apply to male workers or other jobs, although Knutsson includes many occupations and countries.

The research could be seen as reductionist and deterministic, reducing health problems to disrupted circadian rhythms and suggesting shiftworkers will become ill. Individual differences matter: some people are "night owls" who adapt to shifts well, so situational and individual factors interact. Nature also interacts with nurture, as the biological clock is reset by environmental cues like light.

The research is useful. Pheasant's ideas on slow rotation and Gold's findings can be applied to design schedules that reduce accidents, protecting workers, patients and the public, and reducing costs for employers. Overall, the evidence that shiftwork harms health and safety is strong, but self-report studies should be checked with objective measures.