Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/42**

Paper 4 Specialist Options: Application **February/March 2023**

1 hour 30 minutes

9650148299

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 Depression can be treated with medical treatments and it can be managed with psychological treatments. Medical treatments include the use of electro-convulsive therapy (ECT) and chemical/drug treatments. Depression can also be treated psychologically.

(a) Outline the procedure of ECT for depression. [2]

(b) **(i)** Explain **one** chemical/drug treatment for depression. [2]

(ii) Suggest **one** weakness of this chemical/drug treatment for depression. [2]

(c) Outline **two** psychological treatments for depression. [4]

(d) Discuss the strengths and weaknesses of using ECT for the treatment of depression. You should include a conclusion in your answer. [5]

Psychology and consumer behaviour

2 A clothes company uses a pleasant odour in all their stores which is 'clean, subtle, simple and memorable'. Chebat and Michon (2003) conducted an experiment to investigate the effect of pleasant odour on shoppers, gathering data using questionnaires.

(a) Identify the conditions (levels) of the independent variable in the study by Chebat and Michon (2003). [2]

(b) **(i)** Outline **one** variable that was controlled in this study. [2]

(ii) Suggest **one** relevant variable that was **not** controlled in this study. [2]

(c) Explain how **one** model of the 'effects of ambience' can explain the findings of this study. [4]

(d) Discuss the strengths and weaknesses of using questionnaires to assess the effects of odour on shoppers. You should include a conclusion in your answer. [5]

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Psychology and health

3 Doctor: Where is your pain?
Patient: In my stomach.
Doctor: How painful is your pain?
Patient: It's really bad when it hurts.
Doctor: Can you describe how the pain feels, for example sharp or aching?
Patient: I don't know. It just feels really bad.

(a) Explain what is meant by a clinical interview. [2]

(b) Explain **two** communication skills that could be used during a clinical interview about pain. [4]

(c) Explain **two** pain measures for children, other than a clinical interview. [4]

(d) Discuss the strengths and weaknesses of using a clinical interview to measure pain. You should include a conclusion in your answer. [5]

Psychology and organisations

4 Oldham and Brass (1979) investigated workers moving from a traditional to an open plan office. They assessed worker preferences at three different times, using questionnaires and interviews. Fig. 4.1 shows three of the variables that were measured in the experimental group.

Mean scores for three variables at each time (Questionnaire using seven-point scale)

Variables	Time 1 (T1)	Time 2 (T2)	Time 3 (T3)
Work satisfaction	5.37	5.19	5.11
Interpersonal satisfaction	5.22	4.95	4.90
Internal motivation	6.05	5.89	5.86

Fig. 4.1

(a) Give **two** findings from the data shown in Fig. 4.1. [2]

(b) **(i)** Suggest **one** strength of gathering data using a seven-point scale. [2]

(ii) Suggest **one** weakness of gathering data using a seven-point scale. [2]

(c) Explain **two** problems reported in the interviews with workers about working in the open plan office. [4]

(d) Discuss the strengths and weaknesses of using interviews to assess office preference in workers. 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 an observation to investigate which are the **most** common compulsions in people with obsessive-compulsive disorder (OCD). [10]

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

Psychology and consumer behaviour

6 **(a)** Design a study to investigate the effect of different store interior layouts on customer satisfaction. [10]

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

Psychology and health

7 **(a)** Design an experiment to investigate whether acupuncture is more effective than non-pain imagery for managing acute pain. [10]

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

Psychology and organisations

8 **(a)** Design a study to investigate the extent to which the manager in a clothes factory demonstrates 'adaptive leadership'. [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 *'Cognitive treatment for obsessive-compulsive and related disorders is **not** the solution. Biomedical treatment is the only solution.'*

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 *'Different types of intuitive thinking, such as thinking fast and thinking slow, are of no value in understanding consumer decision-making.'*

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 *'Psychological techniques to manage stress are more effective than any medical technique.'*

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 *'The methodology used in the Hawthorne studies is reductionist. This is the **best** way to study organisational working conditions.'*

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

Section A: Psychology and abnormality

1(a) The patient is given a general anaesthetic and a muscle relaxant. Electrodes are placed on the head, either on both temples (bilateral) or on one side (unilateral), and a brief electric current is passed through the brain. This causes a seizure, but the patient only twitches slightly because of the relaxant. The patient then wakes and recovers; treatment is usually given two or three times a week for several weeks.

1(b)(i) Monoamine oxidase inhibitors (MAOIs). The enzyme monoamine oxidase normally breaks down noradrenaline, serotonin and dopamine. MAOIs inhibit this enzyme, so these neurotransmitters are not broken down and stay at higher levels in the synapse, which reduces the symptoms of depression.

1(b)(ii) MAOIs have serious side effects. For example, if the patient eats foods containing tyramine, such as cheese, they can suffer a dangerous rise in blood pressure (hypertension), and other side effects include dizziness, nausea and insomnia, so many patients stop taking them.

1(c) Cognitive restructuring (Beck et al., 1979): the therapist explains the therapy, then helps the patient identify unpleasant emotions, the situations in which they occur and the negative automatic thoughts linked to them. These negative thoughts are challenged and replaced with more positive, realistic thoughts, and finally the underlying dysfunctional beliefs are challenged.

Rational emotive behaviour therapy (Ellis): depression is maintained by irrational

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	beliefs. A is the activating event, B the belief held about A, and C the consequences (thoughts, feelings, behaviour). The therapist then Disputes the irrational belief (D), for example "I must be perfect", and E is the Effect, a more rational belief and improved mood.
1(d)	One strength is that ECT is a medical treatment, prescribed and carried out by doctors under anaesthetic, so it is closely supervised. A second strength is that it is effective for many patients with severe depression, and is useful where all other medications have not worked, for example when a patient is at serious risk of suicide and cannot wait weeks for drugs to take effect. One weakness is that it is still not known exactly how ECT works, so it is hard to justify passing electricity through the brain. A second weakness is side effects: patients may suffer memory loss, temporary or longer lasting, and in some cases ECT can be given without consent if the patient is judged not of sound mind. Conclusion: because of the memory risks and unclear mechanism, ECT should not be a first treatment, but it is justified as a last resort for severe depression that has not responded to drugs or therapy.
	Section A: Psychology and consumer behaviour
2(a)	Scent condition: a pleasant citrus odour was released into the shopping mall every six minutes for one week. Non-scent condition: for one week the mall's ambient atmosphere was not modified in any way.
2(b)(i)	Situational variables: all special promotions in the mall were cancelled during the two weeks of the study, so any difference in shoppers' perceptions or spending could not be due to sales or offers.

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2(b)(ii)	The weather: the temperature or rain may have differed between the two weeks, which could change how well the scent spread in the mall and the mood of shoppers, affecting their questionnaire answers.
2(c)	The pleasure-arousal-dominance (PAD) model of Mehrabian and Russell (1974) says the environment produces three emotional states: pleasure (how happy or satisfied a person feels in a place), arousal (how stimulated they feel) and dominance (how in control they feel). These emotions then lead to approach behaviour, such as staying longer and spending, or avoidance behaviour. This explains the findings because the pleasant citrus scent made the mall a more pleasant and arousing environment than in the non-scent condition. Shoppers therefore had more positive perceptions of the mall environment and the quality of its products, and showed more approach behaviour, including higher spending.
2(d)	One strength is that a questionnaire can include a wide range of relevant items, such as mood, perception of the mall and amount spent, and can be given to a large number of shoppers quickly. A second strength is that rating scales give quantitative data, so answers in the scent and non-scent conditions can be compared statistically, and with other stores. One weakness is that shoppers may not answer truthfully, especially if completed in the store, and may respond to demand characteristics if they guess the aim or answer in front of staff. A second weakness is that closed questions give only quantitative data, so they do not show why the odour affected the shopper, and shoppers may not even be aware of a subtle scent. Conclusion: questionnaires are a practical way to assess odour effects on many shoppers, but they are most valid if completed anonymously away from staff and combined with objective data such as till receipts.

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	Section A: Psychology and health
3(a)	A clinical interview is a face-to-face (or telephone or online) interview between a medical practitioner and a patient in a medical setting, using verbal and non-verbal exchange, designed to diagnose symptoms such as pain and to decide on or assess treatment.
3(b)	Verbal communication: what the doctor and patient say to each other. The doctor can ask specific questions in simple language, such as "Is the pain in your stomach sharp, burning or a dull ache?", giving options because the patient could not describe it. Non-verbal communication: the patient's behaviour that shows pain, such as a facial expression of distress, holding or rubbing their stomach, or walking bent over. The doctor can observe these to judge where the pain is and how severe it is.
3(c)	The Paediatric Pain Questionnaire (Varni and Thompson, 1976): the child chooses colours to colour boxes for "no hurt", "a little hurt", "more hurt" and "a lot of hurt", then uses those colours to colour in the parts of a body outline that hurt, showing location and intensity. The Wong-Baker faces scale: the child is shown a row of cartoon faces ranging from a smiling face (no hurt) to a crying face (hurts worst), and points to the face that is most like how they feel, so it does not need complex language.
3(d)	One strength is that only the patient knows the type and intensity of their pain, so asking them directly gives information the practitioner cannot get otherwise. A second strength is that the practitioner can ask follow-up questions and use both verbal and non-verbal skills, such as noticing the patient holding their stomach, to help diagnosis.

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	One weakness is that patients often use vague terms, like "it just feels really bad", that do not tell the doctor the type of pain. A second weakness is that an interview gives no precise measure of pain level, which a psychometric measure such as the McGill Pain Questionnaire would, and patients may lack the terminology or body knowledge to describe it, for example mistaking a heart attack for indigestion. Conclusion: a clinical interview is an essential starting point for diagnosis, but it should be combined with a standardised measure such as a rating scale or the MPQ to give a reliable measure of the pain.
	Section A: Psychology and organisations
4(a)	All three variables decreased over time and none increased, for example work satisfaction fell from 5.37 at T1 to 5.19 at T2 and 5.11 at T3. Interpersonal satisfaction fell the most, from 5.22 to 4.90 (a fall of 0.32), while internal motivation was the highest variable at every time (6.05, 5.89, 5.86).
4(b)(i)	A seven-point scale gives quantitative data, so the workers' ratings can be compared across the three times and analysed statistically, showing whether moving to the open plan office had a measurable effect.
4(b)(ii)	A seven-point scale has a neutral mid-point (4) that workers can use to opt out of deciding. If many workers chose it, little useful data about their feelings towards the open plan office would be gathered; a six-point scale would force a choice.
4(c)	Lack of privacy: workers said it was impossible to have a private conversation with co-workers or supervisors, and described the new office as a "fishbowl", "cage" or

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	"warehouse", because everyone could see and hear them.
	Inability to concentrate: workers reported too many distractions from background noise and the movement of other workers, which made it hard to concentrate and complete their jobs.
4(d)	One strength is that a structured interview asks all workers the same questions, so answers about the two offices can be compared and the study replicated. A second strength is that a semi-structured interview allows the interviewer to ask follow-up questions, so workers can explain in detail why they prefer one office, giving rich qualitative data, and interviews can be done face to face or by telephone.
	One weakness is that workers may give socially desirable answers or respond to demand characteristics, for example praising the new office because management chose it. A second weakness is that detailed answers can be difficult to record and may be misinterpreted when transcribed, and leading questions can reduce validity.
	Conclusion: interviews are valuable because they explain the reasons behind preferences, but they are most useful when anonymous and combined with rating-scale questionnaires, as Oldham and Brass did.
	Section B: Psychology and abnormality
5(a)	Aim: to investigate which compulsions are most common in people with OCD. The method is a naturalistic, non-participant, overt structured observation.
	Sample: 20 adults diagnosed with OCD by a psychiatrist using DSM-5, recruited by volunteer sampling through posters in two outpatient clinics. All are about to start treatment, so behaviour is not yet changed.
	Setting and procedure: each participant is observed in their own home, the place where most compulsions occur. With consent, video cameras are placed in the kitchen, living room and hallway (never in bathrooms or bedrooms) and record for

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three hours each evening for one week, so there is time to get used to them.

Behaviour categories: (1) checking, e.g. checking doors are locked or the cooker is off; (2) cleaning or washing, e.g. washing hands at the kitchen sink, wiping surfaces; (3) counting objects or actions aloud; (4) repeating routine activities, e.g. going up and down stairs; (5) rearranging objects for order or symmetry; (6) seeking reassurance from family members; (7) doing things in multiples, e.g. turning a light on and off three times.

Recording: event sampling, a tally each time a behaviour occurs, plus the duration of each episode.

Reliability: two trained observers code the same recordings independently and their tallies are correlated to check inter-rater reliability.

Ethics: informed consent from each participant and their household, the right to withdraw and to delete any recording, and confidentiality, with footage viewed only by the researchers.

Analysis: quantitative data, the total frequency of each compulsion across participants, are shown in a bar chart and the most common compulsions identified; brief qualitative notes describe examples.

5(b)

Psychological evidence: OCD involves obsessions, recurring intrusive thoughts, and compulsions, repetitive behaviours a person feels driven to perform to reduce the anxiety the obsession causes. Common compulsions include repeatedly checking doors, windows and appliances, excessive cleaning of the house, clothes or body, counting objects, words or actions, doing routine activities repeatedly, seeking reassurance from family or health practitioners, rearranging objects to ensure order or symmetry, and doing things in multiples. My behaviour categories are based directly on this list, and the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) checklist also groups compulsions into cleaning, checking, repeating, counting and ordering. Repeating phrases mentally is not observable, so I only counted counting

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or repeating out loud.

Methodological evidence: an observation is used because compulsions are behaviours, and people with OCD are often embarrassed, so they may under-report them in a self-report. A naturalistic home setting gives high ecological validity because compulsions are often triggered by everyday situations at home. A structured observation with clear categories produces quantitative data, so frequencies can be counted and compared. Cameras make the observers non-participant, and a week of recording allows habituation, reducing reactivity. Two observers allow inter-rater reliability to be checked. Volunteer sampling is needed because entering a home requires full consent, and avoiding bathrooms and keeping footage confidential protects privacy.

Section B: Psychology and consumer behaviour

6(a) Aim: to investigate the effect of store interior layout on customer satisfaction.

This is a laboratory experiment with an independent measures design.

IV: the store layout, three conditions: grid, free-form and racetrack (boutique). DV: customer satisfaction, measured by a questionnaire.

Materials: a mock grocery store is set up in a large university hall with the same 200 products, shelving, lighting, music and prices in all conditions; only the arrangement of displays and aisles is changed.

Sample: 90 adults who do their own grocery shopping, recruited by opportunity sampling and randomly allocated to the three layouts, 30 in each.

Procedure: each participant is given the same shopping list of 15 items and a basket and asked to shop as they normally would; the time taken is recorded. They then complete a questionnaire with 10 items rated from 1 (strongly disagree) to 7 (strongly agree), e.g. "It was easy to find the products I wanted", "Shopping here was enjoyable", "I would like to shop in this store again", giving a satisfaction

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	score out of 70, and one open question: "What did you like or dislike about the layout?"
	Controls: standardised instructions, one participant at a time, and products restocked identically.
	Ethics: informed consent, right to withdraw, anonymous data, and a debrief at the end.
	Analysis: the mean satisfaction score for each layout is calculated and compared using a bar chart; open answers are analysed into themes such as "easy to find" or "fun".
6(b)	Psychological evidence: my study is based on Vrechopoulos et al. (2004), who identified three types of store interior layout. A grid layout is a rectangular arrangement of displays with long aisles running parallel to each other, as in most supermarkets. A free-form layout arranges displays and aisles in a free-flowing, asymmetric pattern using different sizes, shapes and styles of displays. A racetrack or boutique layout is arranged in individual, semi-separate areas, each built around a theme, to create an interesting and entertaining shopping experience.
	Vrechopoulos et al. showed that layout affects how useful, easy to use and entertaining shoppers find a store, which is why my questionnaire items cover ease of finding products, enjoyment and intention to return.
	Methodological evidence: a laboratory experiment is used because the layout (IV) can be manipulated while other variables, such as products, prices, lighting and music, are controlled, so any difference in satisfaction can be attributed to the layout, establishing cause and effect. Independent measures avoids order effects, since a participant would learn where products were, and random allocation spreads participant variables. A rating scale gives quantitative data so means can be compared, while the open question gives qualitative reasons, increasing validity. A standardised shopping list and instructions make the study replicable and reliable.

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Opportunity sampling is quick, and using real shoppers improves generalisability. Informed consent, the right to withdraw and anonymity follow ethical guidelines.

Section B: Psychology and health

7(a) Aim: to investigate whether acupuncture is more effective than non-pain imagery for managing acute pain. This is a laboratory experiment with an independent measures design.

IV: the pain management technique: acupuncture or non-pain imagery. DV: pain tolerance, the number of seconds the participant keeps their hand in iced water (maximum 180 seconds), and a pain rating on a 0 to 10 visual analogue scale.

Sample: 40 healthy adults aged 18 to 40, recruited by volunteer sampling with an advert in a university, and randomly allocated to the two conditions, 20 in each. People with heart conditions, diabetes or a fear of needles are excluded.

Procedure: acute pain is created with the cold pressor test: the participant puts their hand in water at 3°C and removes it when they can no longer bear it. First everyone does a baseline trial. After 20 minutes the acupuncture group receives 20 minutes of acupuncture from a qualified acupuncturist, using the same points for everyone. The imagery group is trained for 20 minutes to imagine a pleasant scene unrelated to pain, such as lying on a warm beach, and uses it during the second trial. Both groups then repeat the cold pressor test.

Controls: the same water temperature, room, time of day and standardised instructions; the researcher timing the trial does not know the condition (single blind).

Ethics: informed consent, a clear right to withdraw by removing the hand at any time, the 180-second limit, a warm towel afterwards, confidentiality and a full debrief.

Analysis: the improvement from baseline (seconds and rating) is calculated for

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	each participant, the mean for each group compared, and a Mann-Whitney U test used ($p \leq 0.05$).
7(b)	Psychological evidence: acupuncture involves inserting very fine stainless steel needles into the skin at specific points to stimulate the body's major meridians. This is thought to increase the release of endorphins, the body's natural painkillers, which block pain, so it is a physical alternative technique. Non-pain imagery is a psychological technique in which a person tries to alleviate discomfort by creating or imagining a mental scene that is unrelated to or incompatible with the pain, such as a calm beach, so attention is directed away from the pain. Gate control theory (Melzack and Wall, 1965) suggests both could work: stimulation of the skin and messages from the brain, such as attention and emotion, can close the "gate" in the spinal cord. Because the two techniques work differently, comparing them is useful. Methodological evidence: a laboratory experiment allows the IV to be manipulated and variables controlled, so cause and effect can be established. The cold pressor test creates a standardised acute pain that is the same for everyone, safe and stops as soon as the hand is removed. Tolerance in seconds is objective quantitative data, and the rating adds the participant's own experience. Independent measures avoids order effects, as acupuncture effects could carry over; the baseline trial controls individual differences in pain tolerance. A blind researcher reduces bias. Volunteer sampling and screening are needed because pain and needles are involved, and consent, withdrawal and debriefing follow ethical guidelines.
	Section B: Psychology and organisations
8(a)	Aim: to investigate the extent to which the manager in a clothes factory

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demonstrates adaptive leadership. The method is a questionnaire given to the workers, supported by a structured observation of the manager.

Sample: all 60 workers who report to the manager, such as machinists and packers (a target population small enough to ask everyone), with the permission of the factory owner and the manager.

Questionnaire: 18 statements, three for each feature of adaptive leadership, rated from 1 (never) to 5 (always). Examples: "My manager builds on what already works well when making changes" (builds on the past); "My manager leads the factory through change, such as new styles or machines" (about change); "My manager tries out new ways of working on a small scale first" (experimentation); "My manager asks for ideas from workers with different backgrounds and skills" (diversity); "My manager is willing to rearrange how work is done" (displacing and rearranging); "My manager gives workers time to adjust to changes" (takes time). An open question asks: "Describe how your manager dealt with a recent change."

Observation: two trained observers attend six weekly team meetings and tally the same six categories each time the manager shows them.

Reliability and validity: the questionnaire is repeated after two weeks (test-retest), the observers' tallies are correlated, and the questionnaire is anonymous so workers can be honest.

Ethics: informed consent, right to withdraw, confidentiality, and the manager receives only overall results.

Analysis: a mean score out of 5 for each feature and an overall score out of 90; a high overall score shows adaptive leadership. Open answers are coded into the six features.

8(b)

Psychological evidence: my study is based on Heifetz (1997), who described adaptive leadership as helping an organisation adapt and thrive in challenging environments. He identified features of adaptation: it builds on the past rather

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than throwing it away; leadership is about change; adaptation occurs through experimentation; it relies on diversity; new adaptations significantly displace, reregulate and rearrange old ways; and adaptation takes time. A clothes factory faces constant change, such as new fashions and technology, so adaptive leadership is relevant. Each feature became a section of my questionnaire and an observation category, so the scores show how far the manager shows each feature. Methodological evidence: a questionnaire is used because the workers experience the manager's leadership every day, and it can collect data from all 60 quickly. The same statements make answers comparable, and rating scales give quantitative data so a score for each feature can be calculated. The open question gives qualitative examples, increasing validity. Anonymity reduces social desirability, since workers may fear criticising their manager. The observation is objective and checks the questionnaire, as the manager's actual behaviour is recorded; two observers allow inter-rater reliability. Test-retest checks consistency. Consent, the right to withdraw and confidentiality follow ethical guidelines and protect jobs.

Section C: Psychology and abnormality

9 Biomedical treatment for OCD mainly uses drugs, especially SSRIs such as fluoxetine, which stop serotonin being reabsorbed so more stays in the synapse. Cognitive treatments aim to change the faulty thinking that maintains OCD, such as the belief that a thought can cause harm, and are usually combined with exposure and response prevention (ERP) as cognitive-behavioural therapy.

There is some evidence to agree. Drugs are easy and quick: the patient simply swallows a pill and does nothing more. Cognitive therapies need the person to be active and involved in treatment, attending many sessions and facing their fears, which is hard work, and many people prefer to be passive. A patient with severe anxiety may be unable to engage with therapy at all. Drugs treat the symptoms,

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and it can be argued that the cause does not need to be known if the patient feels better.

However, there is strong evidence to disagree. Lovell et al. (2006) gave patients with OCD ten weekly sessions of CBT with exposure and response prevention, either face to face or by telephone. Both groups showed large reductions in Y-BOCS scores and high satisfaction, and the improvements remained at six-month follow-up, showing that cognitive-behavioural treatment is effective and can be delivered cheaply and flexibly. Lehmkuhl et al. (2008) used CBT with ERP to treat Jason, a 12-year-old boy with autism and OCD, and his symptom scores fell greatly and stayed low at follow-up, so it can even work for children with other conditions.

Cognitive therapy also deals with the cause: the person learns to change faulty thinking, so they are less likely to relapse, whereas symptoms often return when drugs are stopped. Drugs have side effects such as nausea, and some anti-anxiety drugs can lead to dependence with long-term use. Being active in therapy is also a good thing, as it gives the person control. In addition, related disorders such as body dysmorphic disorder and hoarding involve distorted beliefs, which cognitive therapy targets directly.

In conclusion, I disagree. Biomedical treatment is useful for reducing severe symptoms quickly, but it is not the only solution; cognitive-behavioural therapy has strong research support and longer-lasting effects, and for many patients a combination of the two is the most effective solution.

Section C: Psychology and consumer behaviour

10 Thinking fast and thinking slow (Shleifer, 2012, reviewing Kahneman) describes two systems of thought. System 1 is fast, automatic, intuitive and effortless, and relies on heuristics; System 2 is slow, deliberate, effortful and logical. Intuitive

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System 1 thinking leads to cognitive biases such as anchoring and framing.

There is strong evidence that these ideas are of value. They describe how the brain actually makes decisions, so they are relevant to every purchase. They explain why consumers make impulse purchases, such as a chocolate bar at the till, using System 1, and why they may later change their mind or return the item when they think slowly with System 2. They explain cognitive biases that sellers use: an anchoring price such as "was £80, now £40" makes the offer seem good, and framing a product as "95% fat free" rather than "5% fat" makes it more attractive. Understanding these biases is of great value to sellers, and also to consumers who want to protect themselves from being manipulated.

On the other hand, there are arguments for the statement. Just because the two systems exist does not mean they apply to every decision each consumer makes, and it is not always clear which system is being used. The idea is reductionist: many other factors affect decisions, such as retail atmospherics like music and odour, store layout, price and brand loyalty. Knutson et al. (2007) used fMRI and found that activity in the nucleus accumbens when a product was shown, and in the insula when an excessive price was shown, predicted whether participants would buy it. This suggests the brain may make a decision before a person can even think fast, so pre-cognitive brain processes may be what should be studied. Much of the research also uses artificial laboratory problems, so it may lack ecological validity.

In conclusion, I largely disagree with the statement. Thinking fast and slow is of real value because it explains impulse buying and the biases sellers exploit, although it is not a complete explanation and should be combined with research on atmospherics and the brain.

Section C: Psychology and health

Question number	
11	Stress can be managed medically, for example with benzodiazepines, which increase the effect of GABA to reduce anxiety, and beta-blockers, which block the effects of adrenaline and lower heart rate and blood pressure. Psychological techniques include biofeedback and imagery. There is evidence to agree. Budzynski et al. (1969) used EMG biofeedback with people suffering tension headaches: participants heard a tone that reflected the tension of their forehead muscle and learned to relax it. Their muscle tension and headache activity fell, showing that a psychological technique can reduce a stress-related physical symptom without drugs. Bridge (1988) found that women with breast cancer who were taught relaxation, or relaxation with imagery of a peaceful scene, had less mood disturbance than a control group, with the imagery group the least stressed. Psychological techniques need the person to be active and involved in their own treatment, which gives them a sense of control. There is no addiction, whereas long-term use of benzodiazepines leads to dependence and withdrawal symptoms. Once learned, techniques such as imagery can be used anywhere and at any time, and for other problems such as pain. However, there is also evidence to disagree. Drugs are quick and easy: the person simply swallows a pill and does nothing else, with no need for time-consuming training or equipment such as biofeedback machines. Drugs can relieve the symptoms of stress quickly, for example beta-blockers reduce a racing heart before a stressful event, which is useful when stress is severe. Psychological techniques depend on motivation; some people find it hard to relax or to form images, so they may not work for everyone. Much research also uses small samples, such as Bridge's cancer patients, so the findings may not generalise to all types of stress. In conclusion, I mostly agree. Psychological techniques are more effective in the long term because they have no addiction and teach lasting skills, but medical techniques are valuable for quick, short-term relief, so they are not always less effective.

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Section C: Psychology and organisations

12 The Hawthorne studies, reviewed by Wikstrom and Bendix (2000), were carried out at the Western Electric Hawthorne Works in the 1920s. In the illumination studies researchers changed one variable, the level of lighting, and measured productivity. This is reductionist because it breaks working conditions down into single variables.

There are arguments to agree. Breaking conditions down allows each factor, such as lighting, rest breaks or hours, to be isolated as the IV while other factors are controlled, so its effect can be studied in detail. Different factors are different, so they should be studied separately before moving on to consider other variables. Reductionism is the way of science: it allows cause and effect to be identified and gives quantitative data, such as output figures, that can be compared, so organisations know exactly what to change.

However, the Hawthorne studies themselves show the problems with this method. Productivity increased in both the test group and the control group, and even rose when lighting was reduced to very low levels. Lighting alone therefore could not explain the change; the workers were probably responding to the attention of the researchers and to social factors, which became known as the Hawthorne effect. By isolating one variable, the researchers failed to consider how factors interact, "not seeing the wood for the trees". The reductionist approach also assumes that a variable such as lighting affects everyone in the same way, ignoring individual differences. Later Hawthorne research used interviews with thousands of workers and observation of a work group, which took a more holistic view and revealed the importance of group norms and relationships with supervisors.

In conclusion, I partly agree that the methodology was reductionist, but I disagree that it is the best way. Isolating variables is useful for physical conditions, but working conditions are best studied holistically, combining controlled measures with

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interviews and observation of social factors.

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