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1 Social psychology – Answers

Suggested answers to Challenge questions (p.11)

1. When Maslach first met 'John Wayne' she described him as 'pleasant, polite and friendly – a nice guy'. When she saw him again doing 'the count' in the prison he had transformed himself. He was talking differently, with a Southern accent, yelling and cursing at the prisoners and going out of his way to be rude and belligerent. Maslach was very surprised at such a remarkable transformation in 'John Wayne' simply due to his change of role to a prison guard in the study.
2. Zimbardo arranged for the prisoners to be hooded and chained so as not to break the total (realistic prison) environment they had created (internal validity) and therefore make it like a real prison (external validity).
3. There may have been pre-existing differences in empathy, sympathy and humanity between Zimbardo and Maslach that were largely independent of gender. Evidence suggests that there *are* sex differences in the capacity for these traits (for example, Christov-Moore *et al.*, 2014) and so gender may be a significant factor here, although we can't extrapolate these findings to the specific researchers in this study. (Further reading: *Neuroscience Biobehavioural Review*, 2014 Oct; 46(4), pp.604627. Pub online 16.9.2014. doi: 10.1016/j.neurobiorev.2014.09.001.) Also, Zimbardo and Maslach had clearly different roles themselves in the study and this may have influenced their very different reactions to the prisoners.
4. Practical real-world applications of this study may help us better understand the causes and consequences of real-world conflicts, humankind's potential for inhumanity and also less dramatic instances of inhuman treatment (such as bullying). Zimbardo's book *The Lucifer Effect* (2007) details how even the most kind and gentle individual may become hostile and aggressive when placed in certain social situations and given social roles.

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Suggested answers to Knowledge recap questions (p.12)

	Answers
1	In 1971, in the basement of the Psychology department at Stanford University.
2	Planned for two weeks but Maslach ended it after just six days.
3	The sample consisted of 21 American middle-class undergraduate men who volunteered to take part.
4	Protection from psychological distress, invasion of privacy.
5	Dissent means not complying with roles or following orders, whereas disobedience is actively refusing a command and behaving in the opposite way to the command.
6	Prisoners were not treated with dignity or respect. They were referred to by their prisoner number (for example, Prisoner 416) by the prison guards, rather than their name.
7	The psychological syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment.

Suggested answers to exam-style practice questions (p.13)

- One type of conformity is compliance, which is where people go along with others in public to 'fit in', but still privately disagree with the views. Another type of conformity is internalisation, which is where we agree both publicly and privately with the views of the group and they become part of our own beliefs.

The candidate has identified two key terms (2 AO1 marks) and has given a brief elaboration of each (2 AO1 marks).

- Obedience refers to following an order from a legitimate authority figure, who has the power to punish if the order is not followed. An example of obedience would be when a police officer in uniform tells pedestrians to move away from a crime scene and they follow this action.

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The candidate has given a definition (legitimate authority figure and power to punish) (2 AO1 marks). They have also been able to apply their knowledge to everyday life by giving an appropriate example (1 AO2 mark).

3. The situational and dispositional explanations disagree on what causes our behaviour, whether this is due to internal or external factors. The situational explanation would argue our behaviour is caused by factors that surround us – this could be the people we interact with and the social environment we are in, and how they change our behaviour. In contrast, the dispositional explanation would argue our behaviour is caused by factors inside us, such as our personality traits and biological characteristics (our brain, genes and biochemistry).

The candidate has made a clear comparison point (internal vs external). They have then gone on to elaborate each side of the argument with clear explanation (3 AO1 marks). If more marks were available, they could elaborate further by providing examples from psychological approaches and research that supports each argument.

4. One real-life application of social psychology would be understanding the effects of imprisonment. One effect of imprisonment is known as 'pathological prisoner syndrome', which is where prisoners lose their identity through the dehumanising procedures found in prisons, meaning that they go along with the demands of the prison guards without question. For example, in Haney *et al.*'s (1973) Stanford Prison experiment, we see the prisoners following abusive orders without question, such as regular roll-call counting and push-ups throughout the day. Due to research in social psychology, we have come to understand how behaviour is caused by people and by the social environment we are in, which can explain the interaction between prisoners and guards and the effects of imprisonment.

The candidate has followed a structured paragraph style to clearly outline their argument. This follows a PEEL format (Point, Explain, Example and Link). They give a clear point, which is elaborated on further, correctly using key terms. Then to support their argument they provide evidence and examples from key research (AO2). Lastly, they link their answer back to the question (4 AO1 marks).

5. Essay plan:

AO1 (5 marks)	AO3 (3 marks)
Stanford Prison experiment: • Background • Aim • Method • Results • Conclusion	Breaks ethical guidelines (protection from harm). Can't replicate the study (reliability).

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The candidate has demonstrated clear understanding of all aspects of the piece of psychological research and has told the story of the study using BAMRC: Background, Aim, Method, Results and Conclusion. They have done this in a relatively concise way and not spent too long on just describing the study. They have gone into more detail on the method (procedure – what did they do?) and results (findings – what did they find?) as required (this question carries 5 AO1 marks).

They have chosen one criticism and have elaborated on this using PEEL: Point, Explain, Example, Link. They have evaluated the study in terms of Ethical considerations, but could have also used criticisms from Methodology, Data collected and Sample (MEDS) (3 AO3 marks).

2 Cognitive psychology: memory – Answers

Suggested answers to Challenge questions (p.19)

1. Eyewitness testimony (EWT) involves somebody who has seen certain people, places or events, recalling their experience in a formal setting, for example, a court of law or police interview. It usually involves providing evidence to a professional based on memory recall of a specific event.
2. In the context of a court setting, a victim's testimony is usually trusted more than other kinds of evidence (such as a bystander's account of an incident) because it is usually quite specific and detailed, conveyed with a great deal of confidence and accompanied by emotional weight/impact. Also, the victim is perceived by others to be at the centre of the event and so more attention is paid to the source of the evidence (the victim) and the consequences for the victim.
3. The implications of these findings are that, even if it is unreliable, any identification made by an eyewitness seems to be meaningful. It seems to be given as much weight as if it were genuinely useful. Jurors and professionals involved in making judgements about eyewitness testimony need to be extremely mindful about this finding.
4. The post-information effect is where eyewitness evidence can distort testimony, even unconsciously, when witnesses talk to each other about their experiences of an event. Witnesses are therefore advised not to discuss specific events prior to giving evidence in court as it may contaminate their testimony.
5. Double-blind line-ups mean that neither the line-up administrator (the person in charge of organising the line-up) nor the witness knows whom the suspect is so that neither can give feedback that may contaminate the identification process. Positive feedback to witnesses has been shown to improve confidence, produce faster identification times and even provoke clearer views (inaccurate memories) of the original event (Laney, 2008).

Answers to multiple-choice questions (p.21)

1. d witness recall of people, places and events
2. c 'smashed'
3. a no eyewitness identification
4. d EWT can be intimidating for witnesses.
5. b Questions that participants had not discussed with another participant.

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Suggested answers to exam-style practice questions (p.22)

1. Reconstructive memory refers to how recall of events is not like rewinding and playing back a film, but can be influenced by cognitive processes such as expectations and past experiences and the contents of our schemata.

The candidate has given an elaborated response that includes key terms (2 AO1 marks).

2. Assimilation is where new information is added to an existing schema with similar or the same information. Accommodation is where the information cannot be added to an existing schema as it does not fit in with the information, so a new schema is created. Both are ways of adapting and changing our schemata (units of memory), yet one causes the schema to remain the same and the other causes a new schema to be formed.

The candidate has provided two definitions (2 AO1 marks) and a comparison point of them being different (1 AO3 mark).

3. The sample in Experiment 1 was a volunteer sample from Washington in the USA with a mix of males and females. It consisted of 45 students split across five conditions. In Experiment 2, different students were used, with a total of 150 students split across three conditions.

The candidate has given multiple details from total size, gender, location, and sampling technique. The candidate would be awarded marks for each feature of the sample, with more detail being given and so more marks awarded. They have also mentioned both experiments to gain full marks (3 AO1 marks) – they may have been capped at a lower band for failure to do this (some exam boards may not use this cap, but it is good practice to include the full sample details).

4. One real life application of cognitive psychology would be understanding the effects of leading questions on eyewitness testimony (EWT). This is where the standard police interview technique may make use of short, closed questions that interrupt the witness and could cause their memory to become distorted by the verbs used in the question. The cognitive interview (CI) technique improves recall in EWT and includes different perspectives, narrative reordering, in-depth reporting and context reinstatement. For example, context reinstatement is where the witness would imagine the location of the event to help cue further recall, and has been shown to be the most effective part of the CI technique. This technique has had a beneficial impact on real life as it has improved the memory accuracy of eyewitnesses as it removes questioning styles that could lead to memory distortion.

The candidate has followed a structured paragraph style to clearly outline their argument. This follows a PEEL format (Point, Explain, Example and Link). They give a clear point, which is elaborated on further with key terms. They give examples of cognitive interview techniques and mention which is the most effective. Lastly, they link their answer back to the question (4 AO1 marks).

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5. Essay plan:

AO1 (6 marks)	AO3 (10 marks)
Stage model of memory (computer analogy) Describe duration and capacity of each store: • sensory register • short-term memory • long-term memory. Describe how information passes between the stores.	– Stage model is too reductionist (e.g. not enough detail on sensory register and long-term memory stores). – Not all memories are repeated to enter into short-term memory (e.g. flashbulb memories). + Evidence to support capacity of short-term memory (e.g. Miller).

The candidate gives enough breadth covering the multiple stores in the multi-store model of memory, and enough depth to describe how information passes between the stores (6 AO1 marks).

They have provided three evaluative points and created a balance of strengths and weaknesses. They have included a debate in their evaluation (reductionism), which will be well executed with their example. They have given a direct criticism of the theory with the problem with rehearsal as a form of transferring memories, when discussing flashbulb memories. Lastly, they use evidence to support the theory and an opportunity to bring in research methods knowledge too. There is a lot of evidence to support and refute, so they could possibly use another piece of evidence as a counter within this paragraph to show higher-order thinking. Thorough and effective evaluation (10 AO3 marks).

3 Developmental psychology: attachment – Answers

Suggested answers to Knowledge recap questions (p.29)

	Answers
1	Michael Rutter
2	A longitudinal study
3	Possible consequences include: • a lack of brain development or neurological problems • dwarfism/short stature • delayed motor and speech functions • seizures and facial distortions • hyperactivity, balance and coordination problems./
4	The Denver Developmental Scale, the McCarthy Scale and the Wechsler Intelligence Scale for Children.
5	Before the child reaches six months old.
6	60% of the sample
7	Bucharest, Romania (Early Intervention Project), USA (St. Petersburg Orphanage Research) and Canada (Romanian adoptees).

Answers to Multiple-choice questions (p.30)

- 1 c 0–42 months
- 2 d roughly equal numbers of girls and boys
- 3 d autistic-like tendencies and ADHD symptoms
- 4 b heterogenous outcomes with respect to IQ
- 5 a the power of the normal family to transform children’s lives

Suggested answers to Challenge questions (p.30)

- 1 In a natural experiment the independent variable changes/varies naturally and so this is more natural/realistic than, for example, a laboratory experiment, where the IV is deliberately

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manipulated by the experimenter. As a result, this natural experiment is considered to have higher mundane realism (it is more true to life) and ecological validity (the transferability of findings to wider settings) than a laboratory experiment.

- 2 Such comparison groups provide a 'baseline control' group, which enables more meaningful comparisons than if there had been no other group to compare findings with. The more detailed the matching that is possible (except for the IV that differs between the two groups), the more confident we can be that our findings can be attributed to the IV and not to extraneous or confounding factors.
- 3 Physical features: skin lesions; respiratory and intestinal infections; smaller head circumference (a proxy measure of brain development). Cognitive factors: low IQ scores; restricted language development.
- 4 A prospective study is when a group is studied moving forwards at different ages and stages in their development. A retrospective study is when a group is studied by looking back at their childhood to try to predict factors that led to their present condition. Prospective studies do not suffer from the obvious problems of recall (memory problems) and other sources of bias (for example, mothers distorting recollections of their children). Prospective studies, however, do suffer from participant attrition (dropping out) over time. This means the sample at the end of the study may be smaller and less typical than the original sample as participants may move away or even die, making the final or resultant sub-sample a biased sample.
- 5 Early adoption appeared to improve the outcomes of these children and neurobiological changes were associated with psychosocial deprivation. In other words, a critical period of brain development during the early years of life may have resulted in lasting neurobiological changes (brain damage). In contrast, small head circumference was only a mediating variable of the effects of early deprivation on psychological function. Possible reasons for this are that head circumference is only an indirect/proxy measure of intelligence. Similarly, weight at entry to the study is only an indirect measure of sub-nutrition, which may only indirectly affect a child's emotional development and IQ scores.

Suggested answers to exam-style practice questions (p.31)

- 1 One effect of institutionalisation is deprivation dwarfism. This is where physical growth is stunted, not necessarily due to malnourishment, but through lack of emotional support due to attachment missing. Another effect is disinhibited attachment, where the individual does not treat a stranger any different to an attachment figure and will often come across as overly friendly.

The candidate has given an elaborated response that includes key terms (2 AO1 marks).

- 2 Privation is where a child never has the opportunity to form an attachment within the critical period, whereas in deprivation an attachment has been formed within this time period but this

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attachment may be disrupted, such as through hospitalisation or the mother leaving within the critical period.

The candidate has provided two definitions (2 AO1 marks) and a comparison point of them being different (1 AO3 mark).

- 3 A problem with Ainsworth and Bell's research is that the sample was culturally biased. Specifically, this study consisted of 56 middle-class parents from America and their infants. Therefore, this means the findings on attachment types from this study may not be generalisable to how infants from different class backgrounds or non-Western cultures demonstrate their types of attachment.

The candidate has used a key term in their initial evaluative point (1 AO3 mark). They have then expanded on this through contextualisation from the study, giving direct examples of the sample used (1 AO3 mark). Lastly, they explain why this is a problem and fully detail why the results cannot be generalised (1 AO3 mark).

- 4 Nature refers to behaviour that is biologically pre-programmed; in terms of developmental psychology this helps explain how attachment may be an inherited instinctive characteristic that aids our survival. It could also help explain developmental stages as these are often based on our biological age. Nurture refers to behaviour that is influenced by the environment and by others around us. In reference to developmental psychology, we may have an insensitive mother who is more difficult to bond with or we may be raised in an orphanage, which may affect our ability to form an attachment. Alternatively, our mother could leave after forming an attachment, in other words maternal deprivation.

The candidate has defined nature (1 AO1 mark) and then applied back to both attachment and developmental theories (1 AO2 marks), demonstrating their point. This is repeated with nurture with a definition (1 AO1 mark) and an example applied to attachment (1 AO2 mark).

- 5 Essay plan:

AO1 (6 marks)	AO3 (10 marks)
Monotropy: One single strong bond Primary care giver: Usually the mother Critical period: Up to 2.5 years Sensitivity: Mother's ability to bond Internal working model: All future attachments Continuity hypothesis: Secure attached will have healthy adult relationships	+ Research to support: e.g. animal studies by Lorenz/Harlow or self-report studies such as Hazan and Shaver. – Multiple attachments: e.g. not one attachment with mother, but multiple can be formed, such as father, grandparents, etc. – Critical period has been criticised: e.g. some argue should be referred to as a sensitive period instead or an optimum time; attachments can occur after this time.

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The candidate has provided six key terms from Bowlby's theory and defined each key term to fulfil the descriptive content (6 AO1 marks).

They have provided three evaluative points, with a balance of positive and negative, to fulfil the discuss requirement. They have used evidence to support and this could be countered to show higher-order thinking, such as that the use of animal studies is not generalisable to humans, or they could focus on the ethics of such research. They have used a specific criticism focused on the concept of monotropy from Bowlby's theory and suggested it is more likely for there to be multiple attachments. Lastly, they have given another specific criticism of the critical period part of the theory, to suggest this should be seen as a sensitive period instead. This last criticism could be elaborated on to include an issue, debate or approach, such as being too reductionist (simplistic), especially with a critical period cut-off of a strict 2.5 years where this could be more flexible (holistic) (10 AO3 marks).

4 Psychopathology – Answers

Suggested answers to Challenge questions (p.37)

- 1 In industrialised nations, comparatively more funding is targeted at 'medical' conditions such as cancer and heart disease. In contrast, in the developing world, there are comparatively more limited resources for treatments in general and so schizophrenia treatments may be comparatively more prioritised. In addition, prognosis for recovery may be more favourable in developing countries as there may also be cultural factors involved (such as lifestyle factors).
- 2 A dimensional approach may get around the problems of circularity by offering different disease processes for each disease dimension. In other words, each different type of schizophrenia may show a different profile of positive symptoms, negative symptoms and cognitive disorganisation. More recent studies have converged on a five-dimensional model, which adds the two further dimensions of depressive and manic symptoms.
- 3 Problems here involve the assumptions of each definition of abnormality. Deviation from statistical norms sees schizophrenia purely in terms of its statistical infrequency; FFA views schizophrenia as a failure to function adequately; DSN views schizophrenia as a deviation from social norms; and DIMH sees schizophrenia as deviating from ideal mental health. Therefore, schizophrenia may be a problem for each definition in different ways and for different reasons.
- 4 Heritability estimates are only partial correlation coefficients, that is they are an estimate of genes and disease in a particular population, controlling for variation in the environment. This means that they should not be seen as indices (measures) of causality. An interactionist explanation further confounds this statistical technique because it asks *how* (not how much) or *in what ways* nature interacts with nurture rather than a more simple how much nature and how much nurture.
- 5 Not necessarily! There are very few, very rare genetic abnormalities involving large sequences of DNA that in turn are associated with a substantial increased risk of psychosis. Even those that are found are associated with a wide range of common disorders and not just schizophrenia *per se* (for example, similar gene sequences could also be involved in learning disabilities). So an

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environmental explanation of schizophrenia is not the only logical explanation of low gene predictions for schizophrenia.

Suggested answers to Knowledge recap questions (p.38)

	Answers
1	Positive symptoms are experiences that are in addition to or excess of the usual range of experiences (for example, hallucinations and delusions). Negative symptoms indicate a diminution or absence of usual experiences (for example, apathy, loss of emotion, withdrawal from family and friends, aphasia).
2	3% of the population
3	The disease is 'hidden' or 'latent' and must therefore be inferred indirectly by the correlation between symptoms.
4	Two further dimensions are now added, including depressive and manic symptoms, therefore allowing for additional patients with schizoaffective disorder and bipolar disorder. A psychosis is now considered as a multi-dimensional condition.
5	A heritability coefficient is a number ranging from 0% to 100%. This is an estimate of the extent to which a diagnosis is due to genetic factors.
6	Heritability coefficients are only partial correlation coefficients and therefore cannot be used as indices (measures) of the causes of schizophrenia.
7	Migrant experiences (especially living in places with a high number of migrants), childhood trauma (for example, neglect, physical and sexual abuse).

Answers to Multiple-choice questions (p.39)

- 1 d bipolar disorder
- 2 b better outcomes than in industrialised nations, and this is the opposite for serious medical conditions (for example, cancer, heart disease)
- 3 d Schneider

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- 4 b when one symptom leads to another
- 5 a there are probably thousands of common genetic variants that confer a tiny increased risk of psychosis (for example, schizophrenia)
- 6 a genetic factors are nowhere near as important in psychotic disorders as first thought

Suggested answers to exam-style practice questions (p.40)

- 1 One biological treatment is drug therapy, such as anti-psychotics. These work by reducing the amount of dopamine, a neurotransmitter in the brain, to reduce positive symptoms of schizophrenia.

The candidate has given an elaborated response that includes one biological treatment and brief elaboration on how this works. A common error here is to bring in a psychological treatment – this would not be creditworthy (2 AO1 marks).

- 2 Positive symptoms in schizophrenia are any symptoms that are in addition to or excess of the usual range of experiences, such as hallucinations and delusions. Negative symptoms indicate a diminution or absence of usual experiences, such as lack of motivation and withdrawing from friends and family. Therefore, one is in excess and one is in deficit compared to a regular person.

The candidate has provided two definitions (2 AO1 marks) and a comparison point of them being different (1 AO3 mark).

- 3 A strength of Rosenhan's study is that he used field participant observations, which are more likely to obtain natural behaviour. This is because the participants usually do not know they are being observed. The study took place in the participants' actual environment, giving higher ecological validity. This can be seen as the pseudopatients observed how staff would walk by and ignore the patients and how patients felt all their behaviour was being judged by the staff as part of their disorder, for example, being described as oral acquisitive for lining up 30 minutes before food was due.

The candidate has used a key term in their initial evaluative point (1 AO3 mark). They have then expanded on this through elaboration of why that is important, linking to validity (1 AO3 mark). They have then given direct examples of this from the study to provide context (1 AO2 mark).

- 4 In the Middle Ages, mental ill-health was seen as the result of evil spirits consuming the patient. These would be released through trepanning, where a hole would be dug into the skull to release the spirits. Following this came Bethlem and other insane asylums, which were large hospitals that supported the medical model, the idea that there was a physical cause for disorders. However, these asylums were later closed down due to their barbaric treatment methods. Now we view mental health in a more holistic way, acknowledging the biological as well as the psychological explanations and treatments. One such practice is community care,

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where we give service users individualised and personalised care in their own homes and encourage their own independence and responsibility for improvement.

The candidate has included historical information from the Middle Ages (1 AO1 mark) and insane asylums (1 AO1 mark). They then discuss the more holistic approach used today (1 AO1 mark) and explain community care practices (1 AO1 mark).

5 Essay plan:

AO1 (5 marks)	AO3 (5 marks)
Medical: - Looks at biology; brain, genes and chemistry. - For example, dopamine hypothesis in schizophrenia. Psychological: - Looks at environment; family (psychodynamic) and internal mental processes (cognitive). - For example, schizophrenogenic mother in schizophrenia.	+ Medical is more scientific as it uses objective methods (brain scans and DNA tests). – Medical is too reductionist and ignores the environment: Diathesis–stress and interactionist approach would be better. – Psychological is less scientific as uses subjective methods: Psychodynamic and case studies. + Psychological is holistic: Looks at range of complex explanations, getting lots of depth as to what causes disorder.

The candidate has explained the medical model, focusing on the dopamine hypothesis, and the alternative model (psychological), focusing on the schizophrenogenic mother. Both of these explanations have named one of the three specific mental disorders from the specification, schizophrenia, and have given examples linking to this (5 AO1 marks).

The candidate has used synoptic links in their comparisons, such as whether psychology is a science, and given reasons for each explanation (medical is scientific as objective; psychological is unscientific as subjective). They have also brought in the reductionism–holism debate as a comparison, which again is elaborated by linking both explanations (medical is reductionist; psychological is holistic). A PEEEE (Point, Explain from biological, Example from biological, Explain from psychological, Example from psychological) structure would be recommended here for each difference to gain the full marks (5 AO3 marks).

5 Psychological approaches – Answers

Suggested answers to Challenge questions (p.47)

- 1 Suggested answers for symbolic learning may involve: learning rules for turn-taking in conversation; prosocial gestures such as giving way to another car at a junction (based on social and cultural norms); learning to play chess.
- 2 Bandura's more experimental approach was to manipulate an independent variable (IV) and measure its effect on the dependent variable (DV) while also controlling for extraneous variables. This allowed him to study the effects of television violence on real-life violence by demonstrating a direct cause–effect relationship between viewing aggression and then demonstrating learned aggression. Bandura also used a control condition that had no exposure to aggressive modelling, which is another desirable feature of successful laboratory experiments. Most of the previous research used correlational analyses that were unable to show a direct causal link between variables.
- 3 Bandura claims that he controlled for possible demand characteristics, but criticisms still remain that if you set up an artificial laboratory situation and include materials such as an inflatable Bobo doll and also the tools to allow children to express their aggression (such as a mallet), then the expectation might be that these factors may encourage children to be aggressive! In other words, children may exhibit strange or novel behaviours when placed in strange environments.
- 4 Bandura demonstrated that some children further improvised on the novel modelled aggression. For example, one of the girls pummelled Bobo with a doll as well as with the mallet. Aggressive modelling also activated new and creative non-modelled forms of aggression (it incited assaults with dart guns and fights among toy animals). This suggests that children don't simply *passively* copy specific actions of the model, they also *actively* develop new and creative variations in their patterns of aggression based on the underlying rules. The exact nature of the rules underlying these new/novel behaviours are still unknown.
- 5 Brushing your teeth:
 - Attentional process: You must pay attention to the model (usually a parent) showing you how to brush your teeth correctly.
 - Representational processes: You develop a set of rules as to how to brush your teeth. For example, the toothpaste goes on to the toothbrush before you start to brush.
 - Translational processes: Symbols used in brushing your teeth are converted into meaningful and purposeful actions.
 - Motivational processes: You must be motivated to want to brush your teeth, otherwise you may not learn this skill.
 - Another factor that may also be included here is feedback/knowledge of how well we are doing in brushing our teeth (parents rewarding us verbally for doing a great job!).

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Suggested answers to Knowledge recap questions (p.48)

	Answers
1	Classical conditioning is where a previously neutral stimulus becomes paired with a conditioned stimulus that elicits a new behaviour (CR). In operant conditioning a voluntary behaviour gets either reinforced or punished, which in turn affects whether that behaviour is repeated. Social learning theory (Bandura) is more concerned with operant conditioning.
2	Learning by doing requires the shaping of actions of each individual through repeated consequences, whereas a television programme can transmit new ways of thinking and behaving to vast populations.
3	The catharsis hypothesis suggested that witnessing aggression would reduce aggression in the viewer by draining aggressive impulses. Bandura found that, in fact, the opposite occurred (aggression increased).
4	The more we watch television, the more we actually believe the social reality that is portrayed (for example, through soaps or dramas). Therefore, the difference between fantasy and our reality becomes blurred.
5	Sudan: The benefits of family planning, education opportunities for daughters and the injustice of forced marriage. Mali: The exposure of cruel childhood practices by child traffickers. Honduras: Community-inspired mobilisation to protect water resources and other conservation projects.
6	Viewers see models similar to themselves persevere and overcome challenges and this builds self-efficacy (self-belief) in their <i>own</i> competence that they also can overcome problems in their own lives.
7	Respect for human dignity; equality of opportunities; support of human aspirations.

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Answers to Multiple-choice questions (p.49)

- 1 c both classical and operant conditioning
- 2 a Social modelling
- 3 d transmit new ways of thinking and behaving to vast populations in widely dispersed countries
- 4 c largely descriptive and correlational
- 5 a aggressive modelling not only shaped a novel style of aggression but also activated new and creative non-modelled forms of aggression
- 6 b instructional effects, desensitisation effects, desensitisation/habitual effects and social construction of reality

Suggested answers to exam-style practice questions (p.50)

- 1 One assumption of behaviourism is that all behaviour is learnt from the environment, this is through classical (association) and operant (reinforcement and punishment) conditioning and through social learning theories (observation and imitation of role models).

The candidate has given an elaborated response that includes one assumption (learnt from the environment), and brief elaboration on how this works by bringing in three theories (2 AO1 marks).

- 2 Classical conditioning, proposed by Pavlov, suggests that we learn behaviour through association of two stimuli at the same time (the unconditioned stimulus and the neutral/conditioned stimulus), which leads to the conditioned response. Operant conditioning, proposed by Skinner, suggests we learn behaviour through reinforcement (rewards) and punishment; these either encourage or discourage behaviour. Therefore, they both believe we learn from the environment but emphasise different roles in this process.

The candidate has provided two definitions (2 AO1 marks) and a comparison point of them both being similar (1 AO3 mark).

- 3 One weakness of Bandura's study is that there are ethical issues with researching children and protection from harm may have been broken. For example, children aged 3–6 years old were tested alone in Room 1 where they observed an adult model behave aggressively towards a Bobo doll; they then imitated these acts in Room 3. They were never untaught this aggressive behaviour. Therefore, this study has lasting ethical issues that would make the study difficult to replicate, lowering external reliability.

The candidate has used a key term in their initial evaluative point (1 AO3 mark). They have then expanded on this through elaboration of why that is important, linking to reliability (1 AO3 mark). They have then given direct examples of this from the study to provide context (1 AO2 mark).

- 4 One application of behaviourism is the ability to change behaviour. This could be through therapy or a training programme. It would use the effects of modelling good and desired

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behaviour, using role models that the target population could identify with as they are similar to the target population in some way. For example, in the article they show how TV programmes in developing countries around the world can educate and encourage a reduction in unplanned childbearing through using vicarious motivators (rewarding others). Therefore, by using social learning theory techniques we can change behaviour to have a positive outcome using observational learning.

The candidate has provided one application, which they have explained using key terms and linked back to theory. They have also given an example to show how this could work (taken from the article) (4 AO1 marks).

- 5 Need to outline the behaviourist approach for 6 AO1 marks, which would involve a brief description of classical and operant conditioning and the assumptions of behaviourism.

The AO3 marks will be awarded for making comparison points (with explanations and examples) with the psychodynamic approach. The acronym MAID will help you consider ways in which the approaches may be similar or different.

Note that it says 'behaviourist approach' in the question, which in AQA includes only conditioning. Social learning theory and the behaviourist approach form the learning theories on the AQA specification.

In OCR, both behaviourist and psychodynamic are referred to as perspectives; this means the same as approaches but is alternative wording. You are most likely to be asked to compare approaches in Unit 2, and possibly in Unit 3 in how they apply to mental health. The same principles in this plan for AQA apply to OCR.

Essay plan:

AO1 (6 marks)	AO3 (10 marks)
Refer to nurture and <i>tabula rasa</i> Classical conditioning Pavlov's research Operant conditioning Skinner's research	Methods: Experiments and observations (scientific) vs case studies and self-report (unscientific). Assumptions: Focus on external environmental observable behaviour vs focus on internal unconscious conflicts. Issues: Both have ethical considerations and use of children. Debates: Both deterministic, either environmental or psychic. Behaviourism more reductionist than psychodynamic. Behaviourism only nurture, whereas psychodynamic is nature and nurture.

The candidate has referred to the assumptions of behaviourism and has described both types of conditioning and supported these with research (6 AO1 marks). There are four potential

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comparative points in the plan (MAID); two or three of these could be selected and elaborated with explanations and examples from each approach (10 AO3 marks).

For example, they could make an initial point that behaviourism is scientific whereas psychodynamic is unscientific. Then explain why, such as because behaviourism uses scientific principles and independent variable manipulation and observes behaviour, unlike psychodynamic which relies on small sample case studies that measure unfalsifiable concepts like the unconscious. Then provide examples from research to support: Pavlov's or Skinner's research vs Freud's research (likely to be Little Hans). Where each approach sits on debates is typically the easiest way to compare them.

6 Biopsychology – Answers

Suggested answers to Challenge questions (p.56)

- 1 A paradigm shift (Kuhn) occurs when there is a fundamental change in approach or underlying assumptions in theory, in this case a change in the way that language is thought to be processed in the brain. More specifically, the belief that language is localised to just one or two key areas (Broca, Wernicke) is clearly challenged by most of the world's leading neuroscientists, in favour of a much more complex model involving multiple areas of the brain and a dynamic two-way flow of information between each area and on a number of different levels.
- 2 The validity of the classic model of language was challenged by recent developments of more powerful neuroimaging tools such as functional magnetic resonance imaging (fMRI and DW-MRI). The key flaws were the difficulty in defining the major components of language, problems with defining exact boundaries between these components (for example, where does one sulci ('ridge') in the brain end and another begin?) and also the recent discovery that there is more than one pathway to language (possibly many pathways operating at different stages and levels of analysis).
- 3 Holism takes the view that the brain, in effect, functions as a whole 'single organ'. This would mean that damage to one area of the brain can easily be accommodated ('repaired') by the rest of the brain. In contrast, the 'localisationists' argue that the brain has localised functional 'units' that are discrete from one another, and that damage to one or more of these functional units could lead to the loss of the specific function served by that brain area.
- 4 By 'parallel' system of language, the authors mean that cognitive analysis of language operates at a number of different levels (for example, structural analysis, semantic analysis) at roughly the same time. By 'distributed', they mean that these processes and functions occur all over the brain and are not just localised in specific brain regions.
- 5 Tremblay and Dick's dual-stream model proposes that there are two inter-related and parallel processes involved in language. The dorsal stream is concerned with speech perception and syntactic processing (such as the structure of sentences). In contrast, the regions of the ventral stream collaborate interactively with this process but are more focused on processing the meaning of language (semantics). This is clearly very different from simple localisation since it moves away from one area of the brain performing one function and then another section of the brain performing a separate function.
- 6 Plasticity (the changeability of the brain in response to trauma or injury) can be seen in other brain regions. For example, areas of the visual cortex have been shown to repair following traumatic injury, and neuro-rehabilitation (for example, following a stroke or other vascular event) can lead to demonstrable improvements in cognitive functioning. The case study of Gabby Giffords, an American politician who survived a shot in the head from point-blank range, shows how the brain can recover (within limits) and also raises further fascinating issues of developing cognitive reserve prior to trauma and the subsequent benefits of this (time spent in

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education was correlated with chances of a disability-free recovery (DFR): Schneider *et al.*, 2014).

Suggested answers to Knowledge recap questions (p.57–8)

	Answers
1	The neurobiology of language is an area of study concerned with identifying the regions of the brain involved in language, together with the flow of information that goes on between them.
2	Diffusion-weighted MRI tracks the movement of water in different directions and between different brain regions involved in language to give neuroscientists a better understanding of the fibre pathways and brain regions in both hemispheres that support language.
3	The basal ganglia, thalamus and cerebellum.
4	Perceptual analysis involves analysis only of the 'surface structure' of language (e.g. the physical sounds of language at a sensory level), whereas language comprehension goes deeper in analysing the meaning (the so called 'deep structure') of language.
5	One strength of this model is that it shows the greater complexity and dynamic nature of language compared to the earlier localisation model (e.g. Broca, Wernicke). One weakness is the lack of testability and therefore this model is easily refutable as it is presently so abstract and complex in nature.
6	The authors state that this research will lead to the development of new and more effective interventions to treat language disorders, such as aphasia, resulting from brain disease.
7	Helping us better understand language disorders (e.g. stuttering). Helping us better understand how language involves various cognitive processes, e.g. perception, thinking, memory.

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Answers to Multiple-choice questions (p.58)

- 1 d the Broca-Wernicke model, Wernicke-Geschwind or classic model
- 2 c Flourens
- 3 c the frontal and temporal lobes respectively
- 4 c neither region has a clear anatomical definition
- 5 a the perception and comprehension of language

Suggested answers to exam-style practice questions (p.59)

- 1 One assumption of the biological approach, also known as the study of biopsychology, is that all behaviour, thoughts and emotions have a physical basis, such as the brain, genes, biochemistry or evolutionary inheritance.

The candidate has given a response that includes one assumption (physical basis) and brief elaboration on how this works through bringing in further biological processes (2 AO1 marks).

- 2 Broca's area refers to the left frontal lobe and it has been demonstrated to be responsible for speech production. Wernicke's area refers to the left temporal lobe and is responsible for speech comprehension. Their functions are also different as Broca handles the motor skills of articulating speech and Wernicke deals with the cognitive sensory process of understanding the meaning of what is being said.

The candidate has provided two definitions (2 AO1 marks) and an explanation of how they are different (1 AO3 mark).

- 3 One strength of Sperry's study is that he had high control of extraneous variables. For example, he used specialised equipment to ensure each participant would only see the information presented for one-tenth of a second in each visual field, one at a time. Therefore, the only change in the participants was whether or not they had a split-brain (IV), meaning any differences found in the results must be due to the IV and not any extraneous variables, so increasing the validity.

The candidate has used a key term in their initial point (1 AO3 mark). They have then expanded on this through elaboration of why that is important, linking to validity (1 AO3 mark). They have then given direct examples of this from the study to provide context (1 AO2 mark).

- 4 One way of measuring the brain is by using post-mortem examinations. These take place after the patient has died and examine the brain for structural damage or abnormalities. Any damage or abnormalities may then correlate to their living behaviour or any disorder/disease they may have had, such as a language disorder, to understand the brain localisation and responsibility for language. One criticism of post-mortem examinations is whether causation can be established, as the abnormal behaviour, disorder or disease they might have shown in their life may not be the result of specific damage in the brain; there could be many other extraneous variables such

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as another illness that may be responsible. In the case of a language disorder, this may not solely be the result of damage to the Broca or Wernicke brain areas, there could be some other factor or illness that caused the initial language disorder.

The candidate has fulfilled the outline part of the question by naming one way of measuring the brain that is on the specification and then describing how it works with accurate detail (2 AO1 marks). It is worth noting that other ways of measuring the brain that are not listed on the specification, such as PET/CAT scans or lesion studies could still be credited marks here. Then the candidate has given an elaborated criticism focusing on the issue of causation; they explain this and add context of language disorders as an example (2 AO3 marks). They have also used specialist terminology appropriately throughout their answer, which is particularly important in biopsychology and biological approach content.

5 Essay plan:

AO1 (6 marks)	AO3 (6 marks)
Knowledge/understanding: - Reductionism/holism definition Biological: - Biological is reductionist as it studies aspects of genetics, biochemistry and brain, but not all aspects of complex behaviour. - Localisation: One region explains one function of behaviour, e.g. Broca/Wernicke. - Evidence: Tan (left frontal lobe and speech production) One other approach (cognitive): - Cognitive looks at thoughts and way we process information, acknowledging complexity of human behaviour. - Schema theory: acknowledges that our memories can change and adapt due to our experiences (nurture) and become more complex as we age (nature). - Evidence from Loftus and Palmer (1974) (see page 16): Our schemata fill in the gap of our memories, so the verb used in Experiment 2 can cause the creation of a false memory of seeing broken glass.	Assessment/conclusion/arguments Biological: – Ignores complexities of human behaviour; anti-localisationists suggest multiple regions explain complex behaviour like language. – Neuroplasticity and functional recovery show role of environment (nurture) as well as nature. + Reductionism is more scientific, can establish cause and effect, use of experiments (Sperry). One other approach (cognitive): – Can be difficult to measure complex behaviour in a scientific way, so often behaviour is narrowed down when it is operationalised. + Holism more useful (application) and more appropriate for humans. Conclusion: Psychology needs to be reductionist to be classed as a science.

The candidate has described the biological approach and explained why it is considered reductionist, using an example too. This is a traditional PEE paragraph used for elaboration, where they have a 'point' to refer to the question and include a key term or definition (here they define the approach),

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then 'explain' where they elaborate on why it is reductionist and 'example' where they provide evidence from a study that supports their point. They have used this same structure for the second approach and have chosen cognitive, as it's more complex and has elements of nature and nurture (6 AO1 marks).

They have then evaluated the strengths and weaknesses of being reductionist or holistic and linked these back to the approaches. They have completed this in a less elaborated way, using PE, making their 'point' and adding elaboration through the 'explain'. Arguably, there are too many evaluative points here for the marks available, so the candidate will need to select their strongest arguments. It is worth noting that two or three evaluative points here will be plenty, as they will be elaborated on to show well-developed evaluation and it is important to include competing arguments of strengths and weaknesses. The candidate has also reached a conclusion, leading to a balanced judgement being presented to gain full marks (6 AO3 marks).

7 Research methods – Answers

Suggested answers to Knowledge recap questions (p.65)

	Answers
1	Misinformation is the deliberate attempt to persuade or deceive people based on inaccurate or irrelevant information masquerading as science – usually but not necessarily to achieve a wider/utilitarian goal. Evidence is objective data that has not been treated, manipulated or biased in any way.
2	Random allocation to conditions (for example, experimental vs control). Precise manipulation of IV and measurement of DV. Control of all other extraneous variables. Also double-blind to ensure no experimenter or participant effects.
3	To persuade you to buy their products by suggesting there is objective proof of benefit or advantage. To influence public opinion.
4	It must be testable and therefore refutable.
5	Randomised allocation to conditions reduces possible bias. The use of double-blind reduces experimenter effects. The use of a control group ensures a baseline comparison of results.
6	Only 7% of respondents
7	Assessment of new educational methods/techniques. Assessment of the impact of government policies.

Answers to Multiple-choice questions (p.66)

- 1 b compare claims with data
- 2 a misinformation masquerades as science
- 3 c would like for something to be true
- 4 d listening to Mozart makes us more intelligent
- 5 a we should not be using it

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Suggested answers to Challenge questions (p.66)

1

Science	Pseudoscience
Accurate evidence	Misinformation
Published data	Private beliefs
Objective	Subjective
Empirical	Masquerading as science

- 2 We may all, to a certain extent, be gullible to the effects of pseudoscience because we might want to believe something to be true or may be curious about the information we read or hear. There may also be individual differences in the extent to which we can be 'misled' by pseudoscience depending on, for example, the extent of our education or training in the features of science and the scientific method. An academic scientist may well be more sceptical in reading papers or interpreting data than someone who has not received this training (the so called 'lay person').
- 3 Della Sala should also use a randomised double-blind technique (randomly allocate participants to the 'Mozart', 'Sex Pistols' and 'control/no music' conditions) to avoid bias and also to make sure that neither the participants nor the scientists know the true purpose of the study to avoid possible participant and experimenter effects and also to reduce demand characteristics.
- 4 Answers may vary. For example, that eating carrots enables being able to see in the dark.
- 5 It could be argued that a lack of evidence is not in and of itself sufficient not to do/try something different. It also depends on the risks and consequences of implementing a change in an educational or clinical setting, for example. If the possible benefits of implementing a new technique outweigh the possible risks, then the likely 'damage' caused may be marginal and it may be worth implementation. If the risks of implementation are relatively high, however, then this should be avoided until there is sufficient evidence to justify its use. Many scientific developments were 'accidental' in nature (for example, the invention of the microwave and the discovery of X-rays and penicillin to name just a few!) and may never have occurred without trial and error, creativity or risks. The author is making the key point here that we should be wary of so called 'fads' or new ways of doing things in science, education, and so on, without a solid

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research base behind them – we should also be aware, however, as Plato once argued, that ‘science is nothing but perception’. In other words, science itself has its own limitations.

Suggested answers to exam-style practice questions (p.67)

- 1 A paradigm is a set of unified, shared assumptions and methods in science. A shift is where there is a scientific revolution, a change in the evidence that once supported one way of thinking that then creates a new dominant way of thinking.

The candidate has given an elaborated response that defines each term in turn (2 AO1 marks).

- 2 Reliability refers to consistency – this can be within the study such as using control and standardisation, but also consistency outside of the study referring to how the results can be replicated and find similar results again. Validity refers to accuracy – this can be within the study (such as whether the study measures what it claims to) or outside the study (such as whether the results hold true in alternative situations or with different samples). Therefore, reliability measures replicability and validity measures truth.

The candidate has provided two definitions with detailed explanation, including internal and external types of reliability and validity (2 AO1 marks) and a comparison point of them being different (1 AO3 mark).

- 3 One strength of Freud’s study is that we can see changes over time, as he used longitudinal methodologies. For example, we see how Little Hans at the beginning of the study is fearful of horses. Later in the study we see he resolves the Oedipus complex. This is a strength as we capture more detailed data and arguably is the only valid way to measure childhood development, by remaining with the same child and seeing how they progress through the psychosexual stages.

The candidate has used a key term in their initial evaluative point (1 AO3 mark). They have then expanded on this through elaboration of why that is important in terms of validity (1 AO3 mark). They have also given direct examples of this from the study to provide context (1 AO2 mark).

- 4 One reason for psychology being a science is because it uses experiments, where there is an IV and we measure the effect on the DV while controlling extraneous variables. For example, in Loftus and Palmer’s study they manipulated the verb used in the leading question (‘How fast were the cars going when they...?’) and quantifiably measured the effect of this in speed estimates given in mph.

One reason for psychology not being a science is because it is unfalsifiable. We are unable to prove some psychological concepts wrong (or right). For example, in Freud’s study he interprets Little Hans’ fear of horses to be actually a fear of his father as he is going through the Oedipus complex.

The candidate has provided one reason for and one reason against psychology being a science (2 AO1 marks). They have also given contextualised examples from two studies to support their reasons and provided elaboration of their reasons (2 AO2 marks).

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5 Essay plan:

AO2 (10 marks)	AO3 (15 marks)
Characteristics of scientific principles: • Wundt's first laboratory • Kuhn's paradigms • Popper's falsification • examples of scientific work (e.g. brain scanning). Details of scientific studies/approaches (biological, behaviourist or cognitive). Details of unscientific studies/approaches (psychodynamic and use of case studies; humanistic and free will).	Consider both of sides of the argument: • + Benefits of psychology being considered a science: reputation; application (such as mental health treatment); usefulness; use of scientific methods. • - Costs of psychology being considered a science: psychodynamic and humanistic approaches; lack of single paradigm; negative effects (such as ethical implications and sacrificing realism); characteristics of science not being adhered (such as replicability).

The candidate shows knowledge and understanding that is applied to the quote given. They achieve this through demonstrating their understanding of the scientific principles and whether psychology is or isn't a science. They bring in Kuhn and Popper to discuss what it means to be a science, and then support this with evidence from different psychological approaches. They contrast a biological approach with the psychodynamic approach in terms of whether psychology is a science (10 AO2 marks).

They also include a discussion of whether it is advantageous to be scientific. This includes PEE or PEEL paragraphs, making their initial point (it is good to be scientific as it has more practical applications to real life). They then explain and elaborate on why this is good using evidence to support (for example, drug treatments using placebos). Lastly, they bring their answer back to the discussion invited in the question using a PEEL paragraph and bringing in analysis, synoptic content or a counter (such as greater external validity due to real-life application).

There needs to be breadth and depth, whereby there is a balance of both advantages and disadvantages. Please note the question includes plurality – advantages and disadvantages – so two of each would be recommended, and includes depth through a PEE elaboration (15 AO3 marks).

8 Issues and debates: nature vs nurture – Answers

Answers to Multiple-choice questions (p.74)

- 1 c nativists
- 2 d empiricists
- 3 a heritable changes in gene expression
- 4 c Sea bass

Suggested answers to Challenge questions (p.75)

- 1 This quote means that the traditional nature–nurture debate, where scientists ask ‘How much nature and how much nurture?’ (for example, ‘80% nature vs 20% nurture’) is no longer relevant. Instead, scientists now ask more sophisticated questions, such as ‘In what ways do nature and nurture interact together and how does “lived experience” change or alter our genes, which may, in turn, shape the genes we pass on to our offspring (our progeny)?’ Lamarck, for example, argued that the giraffes that stretched their long necks to reach higher berries in turn produced offspring with slightly longer necks. Similarly, we all have genes that can ‘switch on’ (gene activation) and ‘switch off’ (gene silencing) other genes in response to environmental or lived experience. The nature–nurture debate has been applied to such diverse areas as intelligence, personality, aggression, gender, schizophrenia and depression, to name just a few.
- 2 Empiricism takes the nurture side of the debate and is at odds with nativism, which takes the nature side of the debate. Empiricists reject the notion of inherited characteristics, genes and so on being biologically hard-wired into the brain at birth.
- 3 See diagram on page 71.
- 4 Correlations do not imply causation. In this context, we cannot conclude that genes are causally related to IQ score; there may be other factors responsible for higher IQ levels after the war (such as socio-economic factors and increased quality of life).
- 5 This is a valid argument since the sample was already ‘biased’ at the start of the study in terms of being purposely selected to be ‘at risk’ to criminality and so this could have been innate before the study commenced. You might use a random sample from both ‘at risk’ and ‘control’ (no risk) individuals so that each participant had an equal chance of being selected (thus reducing bias and allowing a control group (‘baseline’) comparison).
- 6 As the author states, transgenerational epigenetics in humans is a divisive issue. Studies and effects are small and results lack replication. Epigenetic changes in non-sex cells (such as the brain’s neurons) may not be directly linked to the sex cells (the egg or sperm) that are involved in reproduction and passed on to the next generation. In addition, humans are more complex

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than lower animals in terms of their behaviour and so epigenetic mechanisms (for example, aggression and mental disorders) may also be influenced by wider social and cultural factors.

Suggested answers to exam-style practice questions (p.76)

- 1 The interactionist approach refers to the interplay between nature and nurture. Nature refers to characteristics we are born with and focuses on biology, whereas nurture refers to the characteristics we develop after conception and focuses on the environment. An interactionist would acknowledge the role they both have to play and that they come together in creating our thoughts, emotions and behaviours.

The candidate has explained interactionism and also included a definition of both nature and nurture (2 AO1 marks).

- 2 Plasticity refers to how the brain can change and be shaped by our environment and experiences. In terms of the brain, this refers to how our neurons undergo synaptic pruning to cut back neuronal connections that we no longer need. We mould our brains to adapt to the environment so that the synaptic connections we use on a regular basis are stronger and work faster, for example, learning to drive creates more density of connections in the hippocampus responsible for spatial memory.

The candidate has provided a definition in the first sentence, then they have gone on to elaborate upon their explanation. Lastly, they have provided a clear example that is also linked to the region of the brain (3 AO1 marks).

- 3 One strength of Maguire *et al.*'s (2000) study is the use of blind researchers, who do not know which participants belong in which condition. For example, in the study, brain scans from London taxi drivers (experimental condition) and controls were analysed, and researchers would count pixels of grey matter for the anterior and posterior hippocampi. Yet the blind researchers did not know if each scan they analysed belonged to a taxi driver or a control. This helped to increase the validity of the study as it removed the opportunity for any researcher bias in the results.

The candidate has used a PEE approach. Their point includes a key term ('blind researchers'), which is then defined. Their point is supported with evidence in context from the study that is specific to Maguire *et al.*'s study and links to their original point. Lastly, the candidate has explained why this is important and how it affected validity using a further key term, 'researcher bias'. A fully elaborated strength of Maguire *et al.*'s study (3 AO3 marks).

- 4 One psychological approach that supports both nature and nurture is the psychodynamic approach. Freud suggested we are all born with an id (pleasure principle) and libido (pleasure energy), which affect our later adult personality. This supports the idea of having innate characteristics (libido) and personality traits (id) from birth. However, Freud also acknowledges the importance of child development, parental experiences and our environmental upbringing, suggesting nurture plays a role too. This can be seen in his psychosexual stages of personality, where each child goes through five stages and in which the interactions with their parents, especially in the phallic stage (Oedipus/Electra complexes), can shape their adulthood and any

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fixations in their unconscious. Freud also suggested the superego (morality principle) part of our personality is the internalisation of our parents.

The candidate begins by naming a suitable approach and then details specific parts of Freudian theory that have a basis in nature. They then explain and link this back to nature, using the key words 'innate' and 'birth' to support their nature argument. The second part of their answer addresses the nurture element in the question. They begin with an explanation of nurture using the key words 'experiences' and 'environmental upbringing'. They then support this with evidence from Freud's psychosexual stages to add context to their point. They add a bonus piece of context to link back to the tripartite model of personality too (4 AO1 marks).

5 Essay plan:

AO1 (3 marks)	AO2 (3 marks)	AO3 (9 marks)
Nature definition Nurture definition Biological assumptions Behaviourism assumptions Interactionist definition Psychodynamic assumptions	Casey's study (nature) Bandura's study (nurture) Freud's study (interactionist)	Nature: + Stable/predetermined - Not taking responsibility for actions Nurture: + Shape/change environment - Ignore inherited characteristics Interactionist: + Holistic - Hard to establish cause and effect Conclusion

The candidate has included key term definitions of the debate, referencing the question (3 AO1 marks). They then give a range of approaches and studies that support nature, nurture and interactionist and structure a paragraph on each one of these (3 AO2 marks). The paragraphs include point, explain, example and then evaluation (some of which is in context). They give a range of evaluation points, providing a balanced argument (breadth) and some of these are elaborated further (depth). Lastly, the candidate draws a reasonable conclusion that is likely to bring in the usefulness debate, that an interactionist approach is more holistic and applicable to real life (9 AO3 marks).

It is worth noting that the exam board will mark holistically the quality of the candidate's answer rather than meeting assessment objective calculations; from here it will be placed into a band: basic,

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limited, reasonable and good. Yet the emphasis of the question is on 'discuss' and so evaluation and conclusion (AO3) is more heavily weighted at A-level.

9 Options: forensic and criminal – Answers

Answers to Multiple-choice questions (p.82–3)

- 1 d people with schizophrenia
- 2 a dysfunction in the prefrontal cortex
- 3 c Prefrontal cortex
- 4 a the use of such information to detain individuals who are deemed to be dangerous but who have not committed crimes
- 5 d the amygdala, angular gyrus, insula and anterior cingulate

Suggested answers to Challenge questions (p.83)

- 1 Raine believes that there is, at least in part, biological evidence for a murderer's behaviour. This is based on poorer functioning in the prefrontal cortex in murderers. The counterargument to this is that this view ignores the social, cultural and psychological factors that may play a role in criminology.
- 2 The student may well suggest their own view in terms of which pieces of the puzzle are more important. The relationship between these social, cultural, psychological and biological factors is also important since it is dynamic and multi-layered. To simply look at biological dysfunction fails to consider many of the well-documented wider factors that are also known to be implicated in criminology.
- 3 Anatomical MRI scans may detect frontal lobe damage in murderers. However, the wider biological approach in general may also propose genetic abnormalities (for example, the low variant version of the MAO-S gene involved in violence and aggression), elevated testosterone levels and low levels of serotonin in criminals. Specific brain structures involved in impulsivity and violence include hyperactivity of the limbic system (for example, the amygdala) in response to negative or provocative stimuli, especially in individuals who already have aggressive tendencies (such as borderline personality disorder).
- 4 Raine's surprise at the discovery that a PET scan of his own brain resulted him in being grouped into a 'typology' similar to that of a serial killer raises many issues about the potential use of such biological data to detain individuals for the wider good of the protection of society. Its use would be counter to the utilitarian argument (expressed also in law by the Blackstone principle) is that it is better that ten guilty persons escape than that one innocent person suffers. The use of biological data would come at a price of an individual's liberty and freedom, and crucially challenges the 'innocent until proven guilty' tenet of international law. There are also wider ethical and moral issues around the use of so called 'bio-data' as a government tool for social control of individuals deemed to be a risk to the public. Who decides who is a risk to whom, and on what biological basis, are very problematic questions to address because these decisions may

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be made based on bias, such as prejudice against certain groups like the elderly or visible minorities.

- 5 Raine's recent RCT intervention study suggests that the use of omega-3 fish oil supplements in teenage children of violent offenders results in a reduction in their antisocial behaviour and aggression even six months after the end of the treatment programme. These children were given two extra portions of fish each week, containing 1 gram of omega-3 fish oil. This supports an *interactive* explanation of criminality in a way similar to the dietary intervention of using a phenylalanine-free diet for children with the rare genetic disease PKU, which left untreated attacks the brain and spinal cord (nature modified by nurture). This is also supported by recent discoveries in epigenetics, where specific chemical tags added to chromosomes can in turn switch 'on' (gene activation) and 'off' (gene silencing) the action of other genes. Possible limitations to Raine's fish oil study are the lack of cause-effect relationships (that is, he has only found an association between omega-3 fish oil and reduction in aggression) and a lack of control of possible confounding variables (the children of violent parents may *learn* to be violent themselves or may have *genes* that are positively associated with violence based on their parents' genetic profile). More research is clearly needed in this area.

Suggested answers to exam-style practice questions (p.84)

- 1 One way of measuring crime is through official statistics, such as the police records that are published through the government and the Home Office. Another way of measuring crime is through self-report, such as victim surveys, where victims volunteer and are more likely to report crime than in official statistics.

The candidate has given a response that defines each way and then explains it (2 AO1 marks).

- 2 Organised criminals are ones who plan ahead and leave no evidence at the crime scene; they have above-average intelligence and are charming, employed and educated. Disorganised criminals tend to lack communication skills, live alone and have an unstable family background. Disorganised criminals tend to leave evidence at the crime scene and do not plan ahead, unlike organised criminals.

The candidate has provided two definitions with detailed elaboration (2 AO1 marks) and a comparison point of them being different (1 AO3 mark).

- 3 One weakness of Raine *et al.*'s study is that he has a small sample of murderers. In the brain scans from California, 41 murderers were used, which he compared to a matched group of non-murderer controls. These results might not be generalisable to other murderers, so the study lacks population validity.

The candidate has used a key term in their initial evaluative point (1 AO3 mark). They have then expanded on this through elaboration of why it is important in terms of validity (1 AO3 mark). They have also given direct examples of this from the study to provide context (1 AO2 mark). Their answer is brief but covers the necessary elements of the question.

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- 4 Determinism refers to the biological explanation of criminal behaviour, as it suggests our genes and brain cause our criminal behaviour. It sees these factors as outside of our control due to biological determinism. For example, having XYY chromosomes ignores environmental factors and suggests the extra Y chromosome makes these males extra male and more violent, and so prone to committing more crime. Free will suggests our behaviour is in our control, that we can change and choose our behaviour. We see elements of free will when we look to therapeutic methods to reduce offending behaviour and see criminals turn their lives around. For instance, faulty cognitions like lower levels of moral reasoning cause criminal behaviour, and with CBT individuals can alter the way they think about their criminal behaviour.

The candidate has provided an explanation of determinism and applies it back to criminal behaviour (2 AO2 marks), and they also do this for the free will explanation with explanations linked to criminal behaviour and with an example linked to CBT (2 AO2 marks).

5 Essay plan:

AO1 (6 marks)	AO3 (10 marks)
Genetic: - Inherit a criminal gene - Mednick <i>et al.</i> (1984) Denmark adoption study - XYY disorder: 'supermales' are violent and six times more likely to be in prison. Neural: - Brain regions such as limbic system (emotion centre) and prefrontal cortex (impulsivity and immaturity) cause criminal behaviour. - Raine <i>et al.</i> (1997) NGRI murderers have asymmetrical activation and under-activation in prefrontal cortex.	– Too deterministic: Ignores that we can overcome our biology and choose whether or not to be criminals. – Sample bias in research: Danish males in Mednick; small sample of 41 murderers from California in Raine. + Reductionist, meaning we can establish cause and effect (brain localisation such as prefrontal cortex, amygdala and/or hippocampi) and so more scientific than holistic explanations.

The candidate has included both genetic and neural explanations of criminal behaviour. They have pitched the depth well to include a PEE paragraph on each explanation, such as how it explains criminal behaviour (point), example supported by research and further explanation and elaboration (6 AO1 marks).

The discussion part of the answer focuses more heavily on the disadvantages of these explanations, such as that the supporting research tends to use small or biased samples. They also criticise the theory in terms of determinism; they could counter this by discussing the benefits of determinism, such as being able to predict who is at more risk of becoming a criminal and putting interventions in place. Lastly, they use another debate, reductionism, in a positive way to argue that without being simplistic we would not be able to study what causes criminality in a scientific way and so reductionism allows us to establish cause and effect. Using elaborated paragraphs with examples and linking back to the question would secure the candidate a top-band answer (10 AO3 marks).

10 Options: relationships – Answers

Suggested answers to Challenge questions (p.90)

- 1 Virtual online relationships are different from face-to-face relationships because we have more opportunity to selectively present ourselves positively and deliberately using a wide range of media. In addition, in virtual relationships we can write about ourselves or respond at our leisure 'asynchronously' and have more time to construct what we would like to say and therefore to come across as more thoughtful and socially skilled and less socially anxious. On the other hand, virtual relationships are similar to face-to-face relationships in that they can take time to develop and are subject to the same stages of formation, maintenance and breakdown that we see in real-life relationships.
- 2 The so called 'gating mechanism' that limits the amount of self-disclosure we are willing to share online may be affected by a number of different factors. Social penetration theory would suggest that we use this gating mechanism to achieve intimacy and closeness in our relationships by revealing our thoughts and feelings to another person. In contrast, self-verification theory suggests that we want to be known and accepted just for who we are, rather than presenting our ideal self to others. So the extent to which our 'self-disclosure gate' is opened to others depends on our motivations for intimacy and closeness in our relationships with others. Wider factors that this gating mechanism may serve for the individual could include the need for protection from psychological harm, for example, by revealing too much about ourselves to others.
- 3 The suggestion that romantic relationships through the medium of social media are 'fraught with tempting alternatives and crushing competition' implies that there is a wider range of tempting alternatives and crushing competition in social media than there is in real-life relationships. This could be because the portrayal of self that is used in social media encounters is likely to be more positive than the reality of everyday life. The author further argues that we are faced with too much information about our past relationships, are agonised by the fear of missing out (FOMO) and also suffer the uncertainty caused by conflicting declarations of relationship status. Some of these issues may, however, also be apparent in real-life relationships.
- 4 We may reveal more information to strangers in anonymous relationships to unburden ourselves if we believe that future interaction with them is unlikely because they are not 'embedded in our social community' (the 'stranger on the train' effect). In other words, the perceived costs of self-disclosure in this context may be lower than, for example, if we disclose to our immediate neighbours. There may also be perceived costs involved in this, however, such as less social support following self-disclosure as the stranger may soon be travelling to the next train station without us! Interestingly, the author cites that self-disclosure in support forums (such as online bereavement counselling groups) is often much higher compared with more neutral online discussion groups, suggesting that self-disclosure is the 'risk' that individuals take in order to receive more social support, even if this is virtual rather than real.
- 5 Interestingly, research into profound self-disclosure online without reply or interaction (such as an intimate YouTube vlog) suggests this could be due to a heightened sense of self-awareness.

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This could be as result of the perceived anonymity lowering the sense of public self-awareness. In addition, focusing on their thoughts and feelings expressed in writing may also encourage higher private (rather than public) self-awareness. This could also be due to the 'stranger on the train' effect and so the risks of self-disclosure are weighed up against the benefits of unburdening ourselves through such disclosure. Of course, since self-disclosure is often an emotional as well as a cognitive encounter, such a 'rational' cost-benefit analysis may not always be so simple!

Answers to Multiple-choice questions (p.92)

- 1 d we can selectively present ourselves, can write about ourselves asynchronously and have more time to think about what we say
- 2 a controls or limits how much we self-disclose to others
- 3 c relationship goals, followed by income, followed by marital status
- 4 a an association between relationship awareness (for example, displaying a partnered relationship status on Facebook) and relationship satisfaction, commitment and closeness
- 5 c we self-disclose to others when we are unlikely to see them again

Suggested answers to exam-style practice questions (p.93)

- 1 Absence of gating refers to the removal of barriers for potential relationships, such as shyness or physical attractiveness, which could affect face-to-face (FtF) communications, but wouldn't affect computer-mediated communication (CMC).

The candidate has given a definition (removal of barriers) followed by a more elaborated response with an example and applied to two forms of communication (2 AO1 marks).

- 2 Offline relationships are known as face-to-face (FtF) and are more traditional. The people will often meet through acquaintances or work and will be slow to self-disclose and share personal information, as seen in the social penetration theory and the onion analogy. In contrast, online relationships (computer-mediated communication or CMC) are often quick to self-disclose due to the hyperpersonal model and because there is more anonymity and absence of gating. They are both similar, as in reality they both work in connection with one another for the majority of relationships.

The candidate has provided two definitions with detailed elaboration (2 AO1 marks) and a comparison point of them being similar (1 AO3 mark).

- 3 One weakness of Sprecher and Hendrick's (2004) study is that there is sampling bias due to a volunteer sample being used. Participants were 101 dating couples who heard about the study through university classes, newspapers or posters around campus. This meant that of the 202 individuals, most were university students who were white and middle/upper class, and the average length of time they had been dating at time 1 was 18.7 months. Therefore, the results

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from this study could not be generalised to other adults or the rest of the target population, and so there would be low population validity.

The candidate has used a key term in their initial evaluative point (1 AO3 mark). They have then expanded on this through elaboration of why this is important in terms of validity (1 AO3 mark). They have also given direct examples of this from the study to provide context (1 AO2 mark). Their answer is brief but covers the necessary elements of the question.

- 4 Reduced cues theory refers to the concept that there are fewer 'cues' in virtual relationships or CMCs because there is less facial expression, tone of voice and body language to refer to. This means that there will be less self-disclosure in relationships as it will feel impersonal. However, the hyperpersonal model suggests the opposite is true in virtual or CMCs. This is because there is more anonymity online and so people self-disclose quicker in relationships (like 'strangers on a train'), which can lead to boom and bust in relationships.

The candidate has provided an explanation of reduced cues and applies it back to relationships (2 AO2 marks), and they also do the same for the hyperpersonal model with explanations linked to relationships (2 AO2 marks).

- 5 Essay plan:

AO1 (6 marks)	AO3 (10 marks)
Research can include theories/studies Formation: - Altman and Taylor (1973) social penetration theory - Onion analogy - Self-disclosure needs to be reciprocated Maintenance: - Rusbult <i>et al.</i> (2011) investment model - Commitment level most important - Commitment consists of satisfaction level, comparison with alternatives and investment size (includes self-disclosure) - Sprecher and Hendrick (2004): Self-disclosure positively correlated with relationship quality	+ Face validity: Helps to explain why people stay in relationships that appear to be weighted more negatively (e.g. abusive relationships); the investment and therefore commitment play a bigger role than satisfaction. – Sample bias in research: Voluntary university students, mainly white and middle/upper class. – Temporal validity: Theories ignore that our relationships today exist online and offline, and these affect each other.

The candidate has included both the formation and maintenance parts of relationships. They have focused on theories for each and described in an elaborated way, likely by using PEE (point, example, explain). They have used psychological key terminology throughout. They have also supported their description with a study by Sprecher and Hendrick (2004) on self-disclosure (6 AO1 marks).

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They have then evaluated the research (theories/studies), by using face validity as a strength, which will be elaborated on using a PEE paragraph, with an everyday life example. They could counter this by arguing validity is diminished in research as research often relies heavily on self-reported data, where social desirability is likely with such a sensitive topic. The candidate's second evaluative point criticises the nature of samples that usually take part in research into relationships; a criticism that can be used against Sprecher and Hendrick's (2004) study. Lastly, they bring in temporal validity and could discuss this in relation to practical applications or usefulness of these theories today, as relationships are changing to include online dating, especially in their formation. They should aim to link these evaluative points directly back to the question and how relationships are formed and maintained to access the top band (10 AO3 marks).