

A-level PSYCHOLOGY

Paper 3 Issues and options in psychology

Time allowed: 2 hours

Materials

For this paper you must have:

- an AQA 16-page Answer Book.

You may use a calculator.

Instructions

- Use black ink or black ball-point pen.
- Write the information required on the front of your answer book. The **Paper Reference** is 7182/3.
- In **Section A**, you should answer **all** questions.
- In **Section B**, choose **one** topic. Answer **all** questions on the topic you choose.
- In **Section C**, choose **one** topic. Answer **all** questions on the topic you choose.
- In **Section D**, choose **one** topic. Answer **all** questions on the topic you choose.
- Do all rough work in your answer book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 96.
- You will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.

Section A**Issues and debates in psychology**

Answer **all** questions in this section.

0	1
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Which of the following terms best represents the view that biology and environment work together to determine behaviour?

Write the correct letter in your answer book.

[1 mark]

- A** Determinism
- B** Ethnocentrism
- C** Holism
- D** Interactionism
- E** Reductionism

Two psychology students investigated the effect of type of play area on friendly behaviours. They watched the behaviour of six-year-old children in two different play areas and recorded their observations using a set of behavioural categories. They observed 25 children in the first play area and another 25 children in a second play area.

Play Area 1 was a grass space, surrounded by trees and plants.

Play Area 2 was a paved space, surrounded by brick and concrete walls.

0	2
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What are behavioural categories? Explain why it was important to use behavioural categories in this observation.

[4 marks]

Table 1 shows the raw data for the observation.

Table 1

	The number of friendly behaviours observed in each category		
	Playing near to another child	Standing near to another child	Sitting near to another child
Play Area 1 Grass space	28	35	32
Play Area 2 Paved space	18	19	20

After the observation, the students showed their raw data table to their psychology teacher.

The teacher suggested that some of the behavioural categories in **Table 1** were not valid examples of friendly behaviour.

0 3

Suggest **two** better examples of friendly behaviours that the students could have used in their observation. Explain why these might be more valid examples of friendly behaviour than the behaviours in **Table 1**.

[4 marks]

When she looks at the results in **Table 1**, the teacher says, "I can see there is a difference in behaviour between the two conditions, but is the difference significant at the 0.05 level of significance?"

0 4

What do the students need to do with the data in **Table 1** so that they can answer their teacher's question? Explain your answer.

[4 marks]

In this study, the students used a nomothetic approach for their research.

0 5

Name the opposite approach to the nomothetic approach. Briefly outline what this opposite approach might have involved in a study of friendly behaviour.

[3 marks]

0 6

Discuss gender bias in psychological research. Refer to **one** topic you have studied in your answer.

[8 marks]

Turn over for Section B

Turn over ►

Section B**Relationships or Gender or Cognition and development**

Choose **one** topic from **Section B**. Answer **all** questions on the topic you choose.

Topic: Relationships

0	7
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Describe Duck's phase model of relationship breakdown.

[4 marks]

Anji is trying Internet dating for the first time. She is considering what information about herself to put in her online profile.

Friend A tells Anji not to be shy and that she should disclose everything.
Friend B warns Anji about the anonymity of the Internet and says people can be very critical so she should give out limited information at the start.

0	8
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Use your knowledge of self-disclosure in virtual relationships to explain the advice given by Anji's friends.

[4 marks]

0	9
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Discuss what psychological research has told us about why people develop parasocial relationships.

[16 marks]

Topic: Gender

1	0
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Describe the role of chromosomes in sex and gender.

[4 marks]

Beatrix is three years old. At her nursery, there are lots of toys to play with but Beatrix nearly always chooses to play with the dolls and the toy kitchen. When she comes home from nursery she tells her mother about other girls at nursery but hardly ever mentions any of the boys.

1	1
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Use your knowledge of gender schema theory to explain Beatrix's behaviour at nursery and at home.

[4 marks]

1	2
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Discuss what psychological research has told us about the influence of social learning on gender development.

[16 marks]

Topic: Cognition and development

1	3
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Describe what Piaget meant by equilibration.

[4 marks]

Conrad and Leonard are brothers. Conrad has autism whereas Leonard does not have autism. One day they are playing ball with their father in the garden. When their father goes inside to answer the telephone, Leonard hides the ball in a bucket. Leonard giggles and says to Conrad, "Where do you think Dad will look for the ball?".

1	4
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Use your knowledge of theory of mind and the Sally-Anne study to explain Conrad's likely response.

[4 marks]

1	5
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Discuss what psychological research has told us about children's understanding of object permanence.

[16 marks]**Turn over for Section C****Turn over ►**

Section C**Schizophrenia or Eating behaviour or Stress**

Choose **one** topic from **Section C**. Answer **all** questions on the topic you choose.

Topic: Schizophrenia

1	6
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What terms are used by psychologists to describe **A** and **B** below?

A When a person has two or more disorders at the same time.

B When two different disorders have a symptom in common.

In your answer book, write the relevant term alongside each letter.

[2 marks]

1	7
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Evaluate **one** psychological explanation for schizophrenia.

[6 marks]

Jay and Mary are clinical psychologists. They each work with patients who have schizophrenia. Both Jay and Mary treat their patients without the use of drugs. Jay explains how he involves close relatives in treatment so there is less tension. Mary describes how she helps patients to gain understanding of their own thoughts and develop effective strategies to help themselves.

1	8
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Describe and evaluate family therapy **and** cognitive behaviour therapy as treatments for schizophrenia. Refer to Jay and Mary in your answer.

[16 marks]

Topic: Eating behaviour

1	9
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What terms are used by family systems theorists to describe **A** and **B** below?

A Being free to decide how to behave, and feeling in control of one's own life.

B When a family is over-protective and distinctions between family members are blurred.

In your answer book, write the relevant term alongside each letter.

[2 marks]

2	0
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Evaluate **one** psychological explanation for anorexia nervosa.

[6 marks]

Arya and Neela each have a six-year-old child. Arya says, "I cannot understand why he will only eat sweet things like peas and biscuits. He just spits out any new food that I give him." Neela says, "We don't have that problem. We always eat together and he seems to like everything that we eat, especially roast dinners."

2	1
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Describe and evaluate **two** explanations for food preferences. Refer to Arya and Neela in your answer.

[16 marks]

Turn over for the next topic

Turn over ►

Topic: Stress

2	2
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What terms are used by psychologists to describe **A** and **B** below?

A A stage-based process of adapting to a stressor which can end with damage to the immune system.

B When a person's immune system becomes compromised so that it cannot protect the individual against disease.

In your answer book, write the relevant term alongside each letter.

[2 marks]

2	3
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Evaluate personality type as an explanation for stress.

[6 marks]

Beth and Oscar both experience stress. Beth worries a lot about her family whereas Oscar thinks about how to solve problems at work. Each of them has developed strategies for managing and coping with their stress. Oscar asks his friends for practical help, whereas Beth relies on her friends to cheer her up with positive comments.

2	4
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Discuss gender differences **and** the role of social support in coping with stress. Refer to Oscar and Beth in your answer.

[16 marks]

Section D**Aggression or Forensic psychology or Addiction**

Choose **one** topic from **Section D**. Answer **all** questions on the topic you choose.

Topic: Aggression

2	5
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Psychology students sometimes propose hypotheses that are untestable.

Which **one** of the following is essential for a testable hypothesis? Write the correct letter in your answer book.

[1 mark]

- A** The hypothesis should be written to include the word 'significant'.
- B** The hypothesis should include fully operationalised variables.
- C** The hypothesis should refer to a difference between the conditions.
- D** The hypothesis should use appropriate psychological terminology.

An expert in institutional aggression focuses on how living conditions and environment can affect prisoner aggression. He visits Sharksville prison where there has recently been a prison riot. He observes the prison accommodation, prison conditions and how decisions about daily routine at the prison are made.

2	6
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Which explanation for institutional aggression assumes that aggression is due to the institutional environment?

[1 mark]

2	7
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Referring to your answer to Question **26**, describe what the expert could recommend to reduce institutional aggression at Sharksville prison.

[4 marks]

2	8
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Outline **one** limitation of the explanation for institutional aggression you have used to answer Question **27**.

[2 marks]

2	9
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Describe and evaluate **one or more** of the following biological explanations for human aggression: neural, hormonal, genetic.

[16 marks]

Turn over ►

Topic: Forensic psychology

3 0

Psychology students sometimes propose hypotheses that are untestable.

Which **one** of the following is essential for a testable hypothesis? Write the correct letter in your answer book.

[1 mark]

- A** The hypothesis should be written to include the word 'significant'.
- B** The hypothesis should include fully operationalised variables.
- C** The hypothesis should refer to a difference between the conditions.
- D** The hypothesis should use appropriate psychological terminology.

Jack has been convicted of a burglary and attends Betterway centre for young offenders. At Betterway, case workers aim to change how offenders think about their crimes by involving victims. The case workers encourage offenders to consider the wider effects of their crimes and appreciate how they should make up for what they have done wrong.

3 1

Which way of dealing with offending involves victims?

[1 mark]

3 2

Referring to your answer to Question **31**, describe what a case worker might recommend in order for Jack to deal with his offending.

[4 marks]

3 3

Outline **one** limitation of the way of dealing with offending you have described in your answer to Question **32**.

[2 marks]

3 4

Describe and evaluate **one or more** of the following biological explanations for offending: atavistic form, genetics, neural.

[16 marks]

Topic: Addiction

3 5

Psychology students sometimes propose hypotheses that are untestable.

Which **one** of the following is essential for a testable hypothesis? Write the correct letter in your answer book.

[1 mark]

- A** The hypothesis should be written to include the word 'significant'.
- B** The hypothesis should include fully operationalised variables.
- C** The hypothesis should refer to a difference between the conditions.
- D** The hypothesis should use appropriate psychological terminology.

Warren is addicted to gambling. In the evening he plays poker on the computer. He has recently started to attend Bettsoff gambling recovery centre. At the centre, staff aim to change how people think about their addictive behaviour. They also promote coping skills and alternative ways of behaving so addicts are less likely to fall back into their gambling habit.

3 6

Which therapy for addiction relies on changing the way the person thinks about his or her addictive behaviour?

[1 mark]

3 7

Referring to your answer to Question **36**, describe what the staff at the centre might do to help Warren's gambling addiction.

[4 marks]

3 8

Outline **one** limitation of the way of reducing addiction you have described in your answer to Question **37**.

[2 marks]

3 9

Describe and evaluate **one or more** of the following explanations for nicotine addiction: brain neurochemistry, learning theory.

[16 marks]

END OF QUESTIONS

There are no questions printed on this page

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0 1

D

0 2

Behavioural categories are the specific, observable behaviours that a target behaviour (here, friendly behaviour) is broken down into, so that observers can record them, usually by tallying each time one occurs during the observation. Each category should be objectively defined (operationalised) and unambiguous, with no overlap between categories.

Using behavioural categories was important because two students were observing 50 children. Clear categories mean both students record friendly behaviour in the same way, so their tallies should be consistent and inter-observer reliability can be checked and established. Without them, each student might rely on their own subjective interpretation of what counts as 'friendly', so the data from Play Area 1 and Play Area 2 could not be compared fairly.

0 3

Two better examples would be 'sharing a toy or snack with another child' and 'holding hands with or hugging another child'.

These are more valid because they have greater face validity: they clearly involve kindness, affection or mutual enjoyment between children, so they appear to measure what they are supposed to measure, which is friendly behaviour. In contrast, the behaviours in Table 1 (playing, standing or sitting near to another child) have no obvious friendly element. A child might stand or sit near another child simply because of where the space is, or even while ignoring or arguing with them, so these categories may not be measuring friendliness, or even social behaviour, at all.

0	4
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The students need to carry out an inferential statistical test on the data, which here would be a Chi-squared test. This is because the data in Table 1 are frequencies in categories (nominal data), the students are looking for a difference between the two play areas, and the study uses an independent groups design, as different children were observed in each play area.

The test produces a calculated (observed) value of Chi-squared, which they would compare with the critical value in the table for the 0.05 level of significance, using the correct degrees of freedom: $(\text{rows} - 1) \times (\text{columns} - 1) = 2$. If the calculated value is equal to or greater than the critical value, there is less than a 5% probability that the difference is due to chance, so the difference is significant. They can then reject the null hypothesis and accept their research hypothesis.

0	5
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The opposite approach is the idiographic approach.

In a study of friendly behaviour, this might involve an in-depth case study of one individual child, for example observing that child over several weeks in different play areas and interviewing the child and their parents to gather rich qualitative data about how and why they behave in a friendly way. The aim would be to understand that child's friendly behaviour as unique to them, rather than to generalise the findings or propose general laws about friendly behaviour and play space.

0	6
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Gender bias occurs when psychological research fails to represent men and women accurately. Historically, much research was carried out by male researchers using male samples, and the findings were then generalised to women. This leads to androcentrism, where male behaviour is treated as the

norm and any female behaviour that differs is judged as abnormal or deficient. Alpha bias exaggerates differences between the sexes, often devaluing women, whereas beta bias minimises or ignores real differences, usually because women are left out of the research.

Research into the stress response shows beta bias. Cannon's fight or flight response was based mainly on male animals and men, yet it was assumed to apply to everyone. Females were often excluded because their hormonal cycles were thought to complicate the data. Taylor et al (2000) argued that females are more likely to 'tend and befriend', protecting offspring and seeking social support, possibly because oxytocin, enhanced by oestrogen, dampens the fight or flight reaction. A key gender difference was therefore overlooked.

Gender bias matters because biased findings can create or reinforce stereotypes and lead to inappropriate treatment, for example assuming that the male stress response is the 'normal' one. However, bias can be reduced: researchers can use balanced samples and be reflexive about how their own expectations shape their research, and feminist psychologists argue for studying women in their own right, for example in women-only environments. It is also important to recognise that men and women are more similar than different (universality) and that not all members of one sex behave the same, so overemphasising biological sex differences is itself a form of bias.

07

Duck (1982) proposed that relationship breakdown happens in four phases, each reached when a threshold of dissatisfaction is crossed.

In the intra-psychoic phase, one partner privately thinks about their dissatisfaction with the relationship but does not disclose it to their partner. In the dyadic phase, the problem is brought into the open: both partners discuss or confront their dissatisfaction, which may lead to repair or to breakdown. In the social phase, the breakdown becomes public: friends and family are told, may take sides, and may help to repair the relationship or speed up its end. Finally, in the grave-dressing phase, each partner comes to terms with the breakdown and constructs a narrative of events that justifies it and protects their reputation for future relationships.

08

Friend A's advice reflects the hyperpersonal model (Walther), which suggests that self-disclosure in virtual relationships happens earlier and is more intense than face-to-face, so relationships develop more quickly. If Anji discloses everything, she may get to know potential partners quickly and form an intense bond. This also fits the 'stranger on a train' effect (Bargh et al, 2002), where people feel able to reveal personal information to strangers.

However, Friend B is warning about disinhibition. The anonymity of the Internet reduces self-awareness and normal social restraints (deindividuation), so others may feel free to make critical, unkind or aggressive comments about Anji's personal disclosures. Giving limited information at first protects Anji, allowing her self-disclosure to increase gradually as trust develops.

09

Parasocial relationships (PSRs) are one-sided relationships in which an individual is devoted to a celebrity or media figure who is usually unaware of their existence. Research has suggested several reasons why people develop them.

McCutcheon et al (2002) developed the Celebrity Attitude Scale and identified three levels of PSR. At the entertainment-social level, people are drawn to celebrities for entertainment and as a source of gossip with friends. At the intense-personal level, the person has intense, obsessive feelings towards the celebrity, and at the borderline-pathological level they show uncontrollable fantasies and behaviour.

The absorption-addiction model (McCutcheon, 2002) explains how people move up these levels. PSRs arise from personal deficiencies, such as a weak sense of identity, poor real-life relationships or a desire to escape reality.

Absorption means seeking fulfilment through complete psychological involvement in the celebrity's life. Like a drug addiction, the person then needs a stronger 'dose', leading to more extreme behaviour and the delusional belief that the celebrity returns their feelings.

The attachment explanation is based on Bowlby's idea that early attachments shape later relationships. Insecure-resistant individuals have unfulfilled needs for intimacy but fear rejection, so a PSR is attractive because it carries no risk of rejection, break-up or disappointment.

There is research support for the absorption-addiction model. Maltby et al (2003) found that the entertainment-social level was linked to extraversion, while the intense-personal level was linked to neuroticism, and McCutcheon et al (2014) linked celebrity worship with impulsivity and sensation-seeking, traits associated with other addictive behaviours. Meloy (1998) also linked celebrity stalking, an extreme borderline-pathological behaviour, with social

incompetence and loneliness, supporting the idea that PSRs fill a gap left by poor real-life relationships. However, the model is more descriptive than explanatory: it does not clearly explain why absorption occurs or how a person moves from one level to the next.

Evidence for the attachment explanation is mixed. Cole and Leets (1999) found that insecure-resistant individuals were the most likely to form PSRs with TV personalities, which supports the theory. However, McCutcheon et al (2006) found that, in a sample of 299 participants, insecurely attached people were no more likely to form PSRs than securely attached people, which contradicts it.

A further issue is that most research in this area is correlational and uses self-report questionnaires. Correlations cannot establish cause and effect: a weak identity may lead to PSRs, but intense PSRs could equally lead to social isolation. Questionnaires such as the Celebrity Attitude Scale are also vulnerable to social desirability bias, as people may under-report embarrassing obsessive feelings, which reduces validity.

Finally, PSRs appear to be culturally universal. Schmid and Klimmt (2011) found similar PSRs with Harry Potter in Germany, an individualist culture, and Mexico, a collectivist culture. This suggests PSRs may meet a universal human need for connection rather than being caused only by individual deficiencies, which challenges explanations that see them as pathological.

1	0
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Sex is determined by the 23rd pair of chromosomes, the sex chromosomes.

The usual pattern is XX for females and XY for males; the egg always carries an X, so the sperm, carrying an X or a Y, determines the baby's sex.

The SRY gene on the Y chromosome causes testes to develop in the embryo, and these produce androgens, especially testosterone, which lead to male sexual characteristics and masculinise the brain, for example the larger sexually dimorphic nucleus in the male hypothalamus. Without a Y chromosome, ovaries develop and female development is governed mainly by oestrogen. Atypical patterns such as Klinefelter's syndrome (XXY) and Turner's syndrome (XO) produce distinctive physical and psychological characteristics, showing that chromosomes also influence gender indirectly, through hormones and how others respond to the child.

1	1
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According to Martin and Halverson's gender schema theory, once a child develops a basic gender identity, at around two to three years old, they actively seek information to build a gender schema: an organised set of beliefs about what is appropriate for their own sex. As Beatrix is three, she has identified herself as a girl and is developing an in-group 'girl' schema. At nursery, Beatrix chooses the dolls and the toy kitchen because these toys fit her schema of what girls play with, so she sees them as 'for me'. At home, she talks about the other girls because she pays more attention to, and remembers, information about her in-group as she expands her girl schema. She hardly mentions the boys because out-group information is seen as irrelevant and is disregarded or forgotten.

1	2
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Social learning theory (Bandura) suggests that gender is learned through observation and imitation of gender-appropriate behaviour. Children observe models such as parents, peers and media characters, and are more likely to imitate models they identify with, especially those who are the same sex, similar to them, or high in status. Behaviour is shaped by direct reinforcement, such as a boy being praised for playing football, and by vicarious reinforcement, where a child sees a same-sex model rewarded.

Bandura also identified mediational processes: the child must pay attention to the behaviour, retain it, have the capacity to reproduce it, and be motivated by expected rewards.

Research has supported these processes. Perry and Bussey (1979) found that children imitated the choices made by same-sex adult models, even for trivial preferences such as types of fruit. Smith and Lloyd (1978) found that adults offered the same baby gender-stereotyped toys depending on whether it was dressed as a boy or a girl, and encouraged 'boys' to be more active, showing differential reinforcement from birth. Bussey and Bandura (1992) found that four-year-olds disapproved of peers' gender-inconsistent play, showing that peers also reinforce gender roles. In terms of the media, Williams (1986) found that children's gender-role attitudes became more stereotyped two years after television was introduced to a Canadian town ('Notel').

A strength is that social learning can explain cross-cultural differences in gender roles. Mead (1935) reported that gender roles varied widely between tribes in Papua New Guinea, suggesting gender is shaped by the norms children observe. Social learning can also explain how gender roles change over time, for example fathers now being more involved in childcare, as new behaviours are modelled and become mainstream. However, Williams and

Best (1990) found that gender stereotypes were very similar across 30 countries, suggesting that some aspects of gender may be universal and biologically based. Mead's research has also been criticised for observer bias. Social learning theory also struggles to explain cases where biology seems to override socialisation. David Reimer was raised as a girl after a botched circumcision, yet never felt female and later reassigned himself as male, suggesting gender identity is not simply learned.

Another limitation is that the theory does not explain gender as a developmental process. Kohlberg's theory suggests children's understanding changes with age, and that children only imitate same-sex models consistently once they reach gender constancy, at around six. Social learning implies that gender learning happens at any age, in the same way, which does not fit evidence of clear age-related stages.

Social learning theory does improve on the psychodynamic view. Freud emphasised identification with the same-sex parent, whereas social learning recognises many models, which explains why children in single-parent or same-sex parent families still develop typical gender identities.

Finally, much media research is correlational, so cause and effect cannot be established: children who are already strongly gender-typed may choose to watch stereotyped programmes. Overall, social learning clearly influences gender, but an interactionist view is more complete, combining social learning with biological factors and cognitive processes such as gender schemas.

1	3
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Piaget believed that children are driven to understand the world, and that cognitive development is driven by equilibration: the need to maintain a state of mental balance (equilibrium) between existing schemas and new information.

When a child meets new information that does not fit their existing schema, they experience disequilibrium, an unpleasant state of cognitive imbalance. This motivates them to restore balance through adaptation. If the new information fits fairly well, it is assimilated into the existing schema; if it is very different, the schema is changed, or a new one created, through accommodation. For example, a child who thinks 'all four-legged animals are dogs' experiences disequilibrium on being told a horse is not a dog, and accommodates by forming a new 'horse' schema. Equilibrium is then restored at a more advanced level of understanding.

1	4
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In the Sally-Anne study (Baron-Cohen et al, 1985), children watched Sally put a marble in her basket and leave, while Anne moved it into her box. When asked where Sally would look for her marble, 80% of the children with autism wrongly said the box, whereas most typically developing children (85%) and children with Down's syndrome (86%) correctly said the basket. This suggests people with autism often lack a theory of mind: the ability to understand that others can hold beliefs different from their own. Like Sally, Dad did not see the ball being moved because he was inside. Leonard understands that Dad holds a false belief that the ball is still where it was. Conrad, however, is likely to answer 'Dad will look in the bucket', because he is 'mind-blind': he answers from his own knowledge and cannot take Dad's perspective.

1	5
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Object permanence is the understanding that objects continue to exist even when they are out of sight. Piaget believed it develops during the sensorimotor stage, at around eight months. In his studies, he hid a toy under a blanket while the infant watched. Younger infants stopped searching as soon as the toy was covered, as if it had ceased to exist ('out of sight, out of mind'), whereas from about eight months infants searched for it. Piaget also found that infants between about eight and twelve months make the A-not-B error: if a toy is repeatedly hidden at location A and then hidden at B in full view, they still search at A. Full object permanence, including following invisible displacements, was thought to develop by about 18 months.

Baillargeon argued that object permanence is present much earlier, and used the violation of expectation (VoE) technique, in which looking time is the dependent variable used to infer surprise. Infants are first familiarised with an event and then shown a possible and an impossible event. In Baillargeon and DeVos (1991), infants watched short and tall carrots pass behind a screen with a window in its upper half. In the impossible event the tall carrot did not appear in the window. Infants of three and a half months looked longer at the impossible event, suggesting they knew the carrot still existed behind the screen. In the drawbridge study (Baillargeon, 1987), infants looked longer when a screen appeared to rotate through the space occupied by a hidden box.

A key criticism of Piaget is that his method confounded object permanence with motor skills. Searching under a blanket requires the infant to plan and coordinate reaching, so younger infants may have failed because of motor immaturity rather than a lack of understanding. Bower and Wishart (1972) supported this: when the lights were turned off after an object was shown,

infants of around five months still reached for it in the dark, filmed with an infrared camera, suggesting they knew it still existed. Piaget may therefore have underestimated infants' abilities.

Baillargeon's VoE method is more sophisticated because it requires only looking, which young infants can control, and it uses careful controls such as familiarisation trials. However, it relies on inference: we assume longer looking means surprise and therefore understanding. Cashon and Cohen (2000) argued that infants may simply look longer at the more novel or perceptually interesting stimulus, so the findings may show a preference for novelty rather than knowledge of object permanence. This reduces the internal validity of the conclusions.

Both researchers also face problems with age as a confounding variable, as infants of the same age vary greatly in development, and the studies use small samples in artificial laboratory settings.

The debate also links to nature versus nurture. Baillargeon's findings support a nativist view that infants have innate core knowledge of the physical world, whereas Piaget took a constructivist view, in which understanding is built through action and experience. Perhaps the most balanced conclusion is that a basic awareness of objects appears early, as Baillargeon suggests, while the ability to act on that knowledge develops later, as Piaget observed.

1	6
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A: co-morbidity

B: symptom overlap

1	7
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The family dysfunction explanation proposes that schizophrenia results from problematic family interactions, such as double-bind communication (Bateson et al, 1956) and high expressed emotion (EE): criticism, hostility and emotional over-involvement.

There is supporting evidence. Read et al (2005) reviewed studies and found a link between childhood abuse, often associated with dysfunctional families, and later schizophrenia. High EE is also a strong predictor of relapse, and this has led to family therapy aimed at reducing EE, so the explanation has practical value.

However, the explanation can lead to blaming the family, especially mothers (the 'schizophrenogenic mother'), which is unfair, causes distress and may damage the relationship between families and professionals. It may also have limited usefulness, because if the family is part of the problem it is difficult to change.

There is also a problem of cause and effect: much evidence is correlational and retrospective, so early symptoms in a child might create family tension rather than the other way round. Finally, it ignores strong evidence for biological factors, such as a 48% concordance rate for MZ twins (Gottesman, 1991), so a diathesis-stress approach is more complete.

1	8
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Jay is using family therapy, which involves the patient and their close relatives meeting a therapist for open, productive discussion. A key aim is to reduce expressed emotion (criticism, hostility and over-involvement), which is a strong predictor of relapse; this is what Jay means by 'less tension'. The

therapist forms a therapeutic alliance with the family, reduces feelings of guilt and anger, and provides psychoeducation so relatives understand the disorder and know what to expect. The family is also helped to develop problem-solving and communication skills so they can support the patient, while maintaining their own lives.

Mary is using cognitive behaviour therapy (CBT), usually delivered over about five to twenty sessions. When she helps patients 'gain understanding of their own thoughts', she is helping them to identify intrusive or delusional thoughts and see how these affect their feelings and behaviour.

Patients are encouraged to reality-test their beliefs and to develop more rational interpretations, for example viewing voices as interesting rather than threatening. Mary's 'effective strategies' refer to techniques for challenging and managing these thoughts, as well as behavioural strategies such as increasing social activity and using relaxation.

There is evidence that family therapy is effective. Pharoah et al (2010) reviewed studies and found that family therapy reduced relapse and hospital admissions and improved medication compliance, although the quality of the evidence was only moderate. Family therapy also benefits the relatives, who often experience great stress, and by reducing relapse it may save money in the long term. However, it depends on family members being willing and able to attend, and some families may find discussing conflict distressing, which raises ethical issues.

CBT is also supported. Jauhar et al (2014) carried out a meta-analysis of 34 studies and found that CBT had a significant but small effect on positive symptoms. Importantly for Mary, Morrison et al (2014) found that CBT reduced symptoms in patients who had chosen not to take antipsychotic drugs. However, CBT requires patients to have some insight

into their condition and the ability to engage in discussion, so it may be unsuitable for patients with severe disorganised thinking or acute psychosis. It also depends on the availability of skilled practitioners, and it treats symptoms rather than the underlying cause.

A general issue is that both Jay and Mary treat patients without drugs. In practice, NICE recommends both family therapy and CBT alongside antipsychotic medication, and most studies have tested them in combination, so it is difficult to know how effective they are alone. Without drugs, patients with severe positive symptoms may not be calm enough to benefit from either therapy.

Finally, both therapies take a more holistic approach than drug treatment.

Family therapy addresses the social context of the patient, and CBT addresses their cognitions, so both recognise that schizophrenia has psychological and social as well as biological causes. This suggests that an interactionist approach combining therapies may be most effective.

1	9
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A: autonomy

B: enmeshment

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Family systems theory (Minuchin et al, 1978) proposes that anorexia nervosa (AN) develops in families characterised by enmeshment, over-protectiveness, rigidity and conflict avoidance, where a teenage girl's struggle for autonomy is expressed through control of her eating.

There is supporting evidence. Brockmeyer et al (2013) found that AN patients showed a strong desire for autonomy, consistent with the theory. It has also led to family therapy (such as the Maudsley approach), which is one of the most effective treatments for adolescent AN, giving the theory practical value.

However, the theory can lead to blaming the family, causing guilt and damaging the cooperation needed for treatment. There is also a problem of cause and effect: much evidence is correlational, so the enmeshed, over-protective behaviour may be a response to a child's illness rather than its cause.

Minuchin's work was based largely on case studies of small numbers of families, so it may not generalise, and it focuses on girls, so it cannot easily explain AN in males. Finally, it ignores biological factors: Holland et al (1984) found much higher concordance in MZ than DZ twins, suggesting a diathesis-stress explanation is more complete.

2	1
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The evolutionary explanation suggests that food preferences are adaptive: they helped our ancestors survive in the environment of evolutionary adaptation (EEA), so genes for them were passed on. A preference for sweet foods is adaptive because sweetness signals ripe fruit, a source of

fast-acting energy, and specific genes (T1r2 and T1r3) code for sweet taste receptors. A preference for fatty foods is adaptive because fat is rich in calories, and salt is essential for nerve and muscle function. In contrast, bitter and sour tastes are avoided because they may signal toxins or unripe food. Food neophobia, a reluctance to try new foods, is adaptive because unfamiliar food might be poisonous.

Arya's child shows exactly these features. His preference for sweet things like peas and biscuits reflects an evolved preference for energy-rich food, and spitting out new foods is food neophobia, which would have protected a young child from poisoning. Even Neela's child's love of roast dinners, which are high in fat, could reflect an evolved preference for calorie-dense food. The learning explanation suggests that preferences are learned. Through classical conditioning, foods become liked when they are associated with pleasant experiences, and disliked after illness (taste aversion, or the Garcia effect). Through operant conditioning, children are reinforced for eating certain foods, for example being praised. Through social learning, children observe and imitate the food choices of models such as parents and peers, and absorb cultural norms. Neela's child is likely to like 'everything that we eat' because the family always eats together, so he observes his parents enjoying a wide range of foods and imitates them, and is probably vicariously reinforced by their enjoyment.

There is strong support for the evolutionary explanation. Steiner et al (2001) reviewed research showing that newborn babies make positive facial expressions to sweet tastes and rejection expressions to bitter tastes, before any learning could have occurred, suggesting these preferences are innate. However, the explanation struggles to account for individual differences: some people are genetically more sensitive to bitter tastes (supertasters),

and preferences for bitter foods like coffee develop in many cultures.

Evolutionary explanations are also difficult to test, as we cannot observe the EEA, so they risk being post hoc 'just so' stories.

There is good support for learning. Birch and Marlin (1982) found that the more often two-year-olds were exposed to a new food, the more they preferred it, which suggests Arya could overcome her son's neophobia by repeatedly offering new foods. Birch (1980) found that children ate vegetables they disliked after watching peers choose them, supporting social learning. Classical conditioning also explains taste aversions well: Garcia et al (1955) showed that rats avoided a saccharin solution after it was paired with radiation-induced sickness. However, conditioning explains aversions better than preferences.

Learning can also override innate preferences. Rozin and Schiller (1980) showed that a preference for chilli, which is innately aversive, develops in Mexican children through gradual exposure and social influence. This suggests the two explanations interact: evolution provides basic preferences, such as Arya's son's liking for sweetness, while learning, as in Neela's family, shapes which foods are actually preferred. A limitation of the learning approach is that the influences of parents, peers and the media compete, and parental influence may decline with age.

2	2
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A: general adaptation syndrome

B: immunosuppression

2	3
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Friedman and Rosenman proposed that Type A personality (competitive, time-urgent and hostile) increases vulnerability to stress and stress-related illness.

There is supporting evidence. In the Western Collaborative Group Study, over 3,000 men in California were followed for eight and a half years, and Type A men were about twice as likely to develop coronary heart disease (CHD) as Type B men. However, Ragland and Brand (1988) followed up the sample and found that Type A was not linked to later CHD deaths, which challenges the explanation.

A further problem is that Type A is made up of many traits, and only some may matter: Forshaw (2002) suggests hostility is the key trait linked to CHD, rather than Type A as a whole.

There is also a problem of cause and effect, as other variables may mediate the link; for example, Type A people may expose themselves to more stressful situations or smoke more. The research also used all-male samples, so it may not generalise to women. Finally, the explanation has limited practical usefulness, because if personality is part of the problem it is difficult to change, compared with physiological approaches.

2	4
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Research suggests there are gender differences in how people respond to stress. Taylor et al (2000) proposed that while men tend to show a fight or flight response, women are more likely to 'tend and befriend': protecting offspring and turning to social networks for support. This may be because oxytocin, released under stress, has calming effects that are enhanced by

oestrogen and reduced by testosterone. Women are also said to use more emotion-focused coping, managing their feelings, while men use more problem-focused coping, tackling the stressor directly.

Social support is the help we receive from others. It includes instrumental support (practical help), emotional support (empathy and comfort) and esteem support (raising someone's sense of self-worth). The buffering hypothesis suggests social support protects us by reducing the negative impact of stressors.

Beth and Oscar illustrate these differences. Beth's stressor is her family and her response is emotional, as she worries, which reflects emotion-focused coping. She relies on friends to cheer her up with positive comments, which is emotional and esteem support, consistent with women's tend and befriend response. Oscar's stressor is work and he thinks about how to solve problems, which is problem-focused coping, and he asks friends for practical help, which is instrumental support.

There is evidence that women seek social support more than men. Luckow et al (1998) reviewed 26 studies and found that women were more likely to seek and use social support in 25 of them. Taylor et al (2000) also provided evidence for the role of oxytocin, supporting the biological basis of tend and befriend. Social support also has clear health benefits:

Kiecolt-Glaser et al (1984) found that students who reported high levels of loneliness had lower natural killer cell activity during exams.

However, much evidence for tend and befriend comes from animal studies, which may not generalise to humans, where social and cultural factors are important. Research may also exaggerate differences between men and women (alpha bias); many men seek emotional support and many women use problem-focused coping.

Role constraint theory suggests that apparent gender differences may reflect the different stressors men and women face rather than gender itself.

Beth's stressor is family worry, which she may have little control over, so emotional support and emotion-focused coping are appropriate. Oscar's work problem may be more controllable, so practical help and problem-focused coping fit. This links to the matching hypothesis (Cutrona and Russell, 1990): social support is most effective when it matches the stressor, so both Beth and Oscar may be using the most suitable strategy for their situation.

There are also cultural differences: Kim et al (2008) found that Asian Americans were less likely to seek explicit social support than European Americans, because of concerns about burdening others and disrupting group harmony. In addition, individuals with better social skills are more able to gain and benefit from social support, so the role of social support depends on individual differences as well as gender.

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B

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The situational explanation: the deprivation model.

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According to the deprivation model, prisoners become aggressive because of the deprivations of prison life. Sykes (1958) identified five: loss of liberty, autonomy, goods and services, heterosexual relationships and security.

The expert could recommend that Sharksville reduces overcrowding by giving prisoners more space and fewer prisoners per cell. He could recommend more access to goods, services and visits from family, and more varied daily routines, such as education and work, to reduce boredom. To increase autonomy, prisoners could have some say in decisions about their daily routine, for example through prisoner representatives, and better staff supervision would increase feelings of security.

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There is counter-evidence suggesting that institutional aggression is at least partly dispositional. Poole and Regoli (1983) found that pre-imprisonment violence was the best predictor of inmate aggression, suggesting prisoners import aggressive characteristics regardless of conditions.

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Neural explanations focus on the limbic system, which includes the amygdala and hypothalamus. The amygdala evaluates the emotional significance of sensory information and triggers a fight or flight response to perceived threats. Overactivity of the amygdala is linked to aggression; Gaspic et al (2011) found, using fMRI, that a fast and strong amygdala response during a provoking game predicted aggressive rejection of unfair offers. The orbitofrontal cortex (OFC) normally regulates impulsive behaviour

and inhibits the limbic system. Serotonin has a calming effect in the OFC, so low levels of serotonin reduce self-control and increase impulsive aggression. Virkkunen et al (1994) found lower levels of a serotonin breakdown product (5-HIAA) in violent impulsive offenders than in non-impulsive offenders.

Hormonal explanations focus mainly on testosterone, an androgen produced by the testes. Testosterone is thought to increase aggression by acting on areas of the brain that control aggression, which may explain why young males are typically more aggressive than females. Dolan et al (2001) found a positive correlation between testosterone levels and aggressive behaviour in 60 male offenders in UK maximum-security hospitals. The dual-hormone hypothesis (Carré and Mehta, 2011) suggests that high testosterone leads to aggression mainly when levels of cortisol are low.

A strength of the neural explanation is that there is experimental evidence for a causal link. In Gospic et al's study, participants given a benzodiazepine, which reduced amygdala activity, rejected unfair offers half as often as those given a placebo, suggesting amygdala activity causes aggression.

Research on serotonin has also been used to develop drug treatments, such as antidepressants that raise serotonin levels, giving the explanation practical value.

However, the limbic system may not be the full story. The OFC's regulation of the amygdala means that aggression results from an interaction between brain regions, not one structure, so focusing on the amygdala alone is reductionist.

Evidence for the hormonal explanation is mixed. Animal research shows that castrating male mice reduces aggression and that testosterone injections restore it, but animal findings may not generalise to humans, whose

aggression is strongly influenced by cognitive and social factors. In humans, many studies, like Dolan's, are correlational, so cause and effect cannot be established. In fact, the relationship may be bidirectional: testosterone levels rise after competition and winning, so aggressive behaviour may increase testosterone rather than the reverse. The dual-hormone hypothesis is also a strength of the explanation, because it accounts for inconsistent findings by showing that hormones interact.

Both explanations are based largely on male samples, so they may be gender biased and less able to explain female aggression. Biological explanations are also determinist, implying that people with low serotonin or high testosterone cannot help being aggressive, which raises issues of moral and legal responsibility.

Finally, biological explanations ignore social and psychological influences.

Social learning theory and the frustration-aggression hypothesis show that situational factors, such as observing rewarded models or experiencing frustration, also trigger aggression. Cultural differences in levels of aggression, such as those found between societies, cannot be explained by biology alone. A biosocial, interactionist approach is therefore more complete: biological factors may create a predisposition to aggression that is triggered by environmental factors.

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Restorative justice programmes.

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The case worker might recommend that Jack takes part in a restorative justice meeting with the victim of his burglary, led by a trained mediator, either face-to-face or indirectly, for example through letters or video. The victim would explain the effect the burglary has had on them, such as fear of being alone in the house and loss of confidence. This empowers the victim and helps them heal, while Jack sees the real consequences of his crime, which should develop empathy and help him accept responsibility. The case worker could also arrange restitution, such as Jack returning or paying for the stolen goods or repairing the damage he caused.

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Restorative justice depends on the victim agreeing to take part. Many burglary victims may refuse to meet Jack because they fear intimidation or being re-traumatised, so it cannot be used in many cases.

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Genetic explanations suggest that offenders inherit a predisposition to criminal behaviour. Twin studies compare concordance rates: Christiansen (1977) studied over 3,500 twin pairs in Denmark and found concordance for criminality of 35% for MZ male twins compared with 13% for DZ male twins. Candidate genes have also been identified. Tiihonen et al (2015) analysed the genes of about 900 Finnish offenders and found that the MAOA gene and the CDH13 gene were associated with violent crime. The low-activity MAOA gene is linked to abnormal serotonin levels and aggression. The diathesis-stress model suggests a genetic predisposition

(diathesis) leads to offending only when triggered by environmental stressors such as abuse.

Neural explanations suggest offenders differ in brain structure and function.

Many offenders have antisocial personality disorder (APD), characterised by reduced emotional responses and lack of empathy. Raine et al (2000) found an 11% reduction in the volume of grey matter in the prefrontal cortex of people with APD, compared with controls. The prefrontal cortex is involved in regulating emotional behaviour and impulse control, so reduced function may lead to impulsive, antisocial behaviour. Mirror neurons have also been implicated: Keysers et al (2011) found that criminal psychopaths only showed empathy when asked to, suggesting they have a 'neural switch' for empathy that is usually turned off.

There is support for the genetic explanation from adoption studies, which separate genetic and environmental influences. Mednick et al (1984) studied over 13,000 Danish adoptees and found that when neither biological nor adoptive parents had convictions, 13.5% of adoptees had a conviction, rising to 20% when a biological parent had a conviction. This suggests a genetic influence.

However, twin studies have methodological problems. MZ twins may be treated more similarly than DZ twins, so higher concordance may partly reflect a shared environment. Also, as concordance for MZ twins is far below 100%, the environment must play a large role. Candidate gene findings are also limited: Tiihonen et al estimated that these genes may account for only around 5 to 10% of violent crime, so they cannot be the full explanation. Much evidence for MAOA, such as Brunner et al (1993), comes from a single family, and some evidence comes from animal studies with mice, which may not generalise to human offending.

Neural explanations also face problems of cause and effect. Raine's research is correlational, and brain differences may be a consequence of an offending lifestyle, for example head injuries or drug use, rather than a cause. Also, not all offenders have APD, so the explanation only applies to a subset of offenders. Keyzers' findings, however, suggest that empathy in psychopaths can be switched on, which may have implications for treatment.

Biological explanations raise ethical and legal issues. If offending is caused by genes or brain structure, it is determinist and may reduce the offender's moral and legal responsibility; Mobley's defence in the USA argued that his crime was caused by his genes, although this was rejected. It may also suggest that therapy cannot work.

Finally, biological explanations are reductionist and ignore social factors.

Differential association theory (Sutherland) argues that offending is learned from others' attitudes and techniques, and childhood experiences and education may mediate biological influences. A biosocial, diathesis-stress approach, combining genetic and neural vulnerability with environmental triggers, is therefore more complete.

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Cognitive behaviour therapy (CBT).

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Staff would first carry out a functional analysis with Warren to identify his triggers, such as being alone in the evening with access to his computer, or boredom. They would help him identify and challenge his irrational thoughts, such as believing he can control poker outcomes (the illusion of control) or that he is 'due' a win (the gambler's fallacy), and replace them with rational thoughts, such as how small his chances are and how much the online firms profit from losers. Staff would then teach coping skills, such as relaxation, positive self-talk and role-playing refusing a bet, and suggest alternative evening activities, such as going to the gym, to prevent relapse.

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CBT may only be effective in the short term. Cowlshaw et al (2012) reviewed studies and found CBT reduced gambling shortly after therapy, but there was little evidence of long-term benefits, so relapse may occur.

3	9
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The brain neurochemistry explanation focuses on the mesolimbic dopamine pathway, the brain's reward system. Nicotine binds to nicotinic acetylcholine (nACh) receptors in the ventral tegmental area (VTA), which triggers the release of dopamine in the nucleus accumbens. This produces feelings of pleasure, which motivate the person to smoke again. With repeated smoking, nACh receptors become desensitised and their number increases, so tolerance develops and more nicotine is needed for the same effect.

According to the nicotine regulation model, when nicotine levels fall, for example overnight, withdrawal symptoms such as anxiety and irritability

occur, and smoking becomes necessary simply to feel normal.

Learning theory explains initiation, maintenance and relapse. Through social learning, young people observe and imitate models such as parents, peers or celebrities who smoke, and are vicariously reinforced, for example by seeing smokers as popular. Through operant conditioning, smoking is positively reinforced by the pleasurable effects of nicotine and by social approval, and negatively reinforced because it removes unpleasant withdrawal symptoms.

Through classical conditioning, environmental cues, such as a lighter, a cup of coffee or a particular place, are repeatedly paired with the pleasure of smoking and become secondary reinforcers. These cues then trigger cravings on their own (cue reactivity), which explains relapse.

There is strong support for the neurochemical explanation from animal research. Corrigall et al (1992) found that destroying dopamine neurons in the nucleus accumbens of rats greatly reduced their self-administration of nicotine, suggesting dopamine is essential to its rewarding effects. However, findings from rats may not generalise to humans, whose smoking is also influenced by social and cognitive factors such as expectations. The explanation also has practical value: nicotine replacement therapy (NRT), such as patches, reduces withdrawal symptoms and has been found to increase the chances of quitting by around 50 to 70% (Stead et al, 2012).

A limitation is that the neurochemistry is more complex than the dopamine model suggests, as other neurotransmitters, such as GABA, glutamate and serotonin, are also involved, so the explanation is reductionist. It also cannot explain why only some people who try smoking become addicted. Genetic differences, such as variation in the DRD2 dopamine receptor gene, may explain individual differences in vulnerability.

Learning theory is supported by research into cue reactivity. Carter and

Tiffany (1999) carried out a meta-analysis and found that smoking-related cues produced strong cravings and physiological arousal in smokers. Learning theory also explains the initiation of smoking better than the neurochemical explanation, because peer influence and social learning explain why people start before they experience any rewarding effects. It suggests that if smoking is learned, it can be unlearned, for example through cue exposure therapy.

However, learning theory struggles to explain why most people exposed to smoking models and rewards do not become addicted, so individual differences in biological vulnerability must also be important. It also has some issues with research, as ethical difficulties mean experiments that cause nicotine addiction in humans cannot be carried out, so much evidence is correlational and cause and effect is difficult to establish.

Overall, the two explanations are best seen as complementary. Learning theory explains initiation and the role of cues in relapse, while neurochemistry explains maintenance through tolerance and withdrawal. This interactionist view also suggests that effective treatment should combine physiological methods, such as patches, with psychological approaches that address learned cues and social influences.