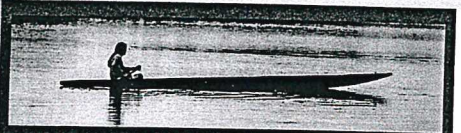
Key concept 1 and key study



The War of the Ghosts

The following story was told to participants in Bartlett's key study:

One night two young men from Egulac went down the river to hunt seals, and while they were there it became foggy and calm. Then they heard war-cries, and they thought: 'Maybe this is a war-party'. They escaped to the shore and hid behind a log. Now canoes came up, and they heard the noise of paddles, and saw one canoe coming up to them. There were five men in the canoe, and they said:

'What do you think? We wish to take you along. We are going up the river to make war on the people.'

One of the young men said: 'I have no arrows.'

'Arrows are in the canoe,' they said.

'I will not go along. I might get killed. My relatives do not know where I have gone. But you,' he said, turning to the other, 'may go with them.'

So one of the young men went, but the other returned home.

And the warriors went up on the river to a town on the other side of Kalama. The people came down to the water, and they began to fight, and many were killed. But presently the young man heard one of the warriors say: 'Quick, let us go home: that Indian has been hit.' Now he thought: 'Oh, they are ghosts.' He did not feel sick, but they said he had been shot.

So the canoes went back to Egulac, and the young man went ashore to his house, and made a fire. And he told everybody and said: 'Behold I accompanied the ghosts, and we went to fight. Many of our fellows were killed, and many of those who attacked us were killed. They said I was hit and I did not feel sick.'

He told it all and then became quiet. When the sun rose he fell down. Something black came out of his mouth. His face became contorted. The people jumped up and cried.

He was dead.

Specification terms

Confabulation When details are added to a memory to fill in the 'gaps', to make recall meaningful.

Rationalisation When parts of a memory are distorted to fit your schema, to make the memory meaningful.

Reconstructive memory Pieces of stored information are reassembled during recall. The process is guided by our schemas so that we produce a 'memory' that makes sense (even if it is inaccurate).

Schema A mental package of beliefs and expectations that influence memory. They change (reconstruct) memories through shortening, rationalisation and confabulation.

Shortening When part of a memory is left out, so what remains is shorter.

Key concept: Reconstructive memory

What is reconstructive memory?

Sir Frederic Charles Bartlett (1932) argued that memories are not reproductions but *reconstructions* (constructing the memory again). We don't record events in memory like a video recorder would. Instead we store fragments of information and when we recall something, we build (reconstruct) these fragments into a meaningful whole. The result is that memory is not a totally accurate record of what happened.

Role of schema in memory

A *schema* is a mental structure or 'package' containing our stored knowledge of an aspect of the world. So we have schema for a mother, teacher, fire engine, birthday party, firework, etc. – for people, objects, events. Bartlett believed our schemas affect memory by influencing what we store and what we recall (see the key study below). Therefore, some parts of a memory are missing, some are distorted and some are added:

Shortening Parts of a memory that don't fit in with your schemas are left out (e.g. unfamiliar or unexpected details) so what you remember is shorter.

Rationalisation Parts of a memory are recalled but in a distorted way that fits your schemas. So your memory of an event changed because it didn't match relevant schemas (but now it does). This happens so that strange or unfamiliar memories make more sense.

Confabulation Parts of a memory are invented to fill in 'gaps'. This isn't deliberate (it's not 'lying') and it doesn't happen randomly. It is guided by schemas to (again) make better sense of the memory.

Key study: Bartlett (1932) War of the Ghosts

Aims

Bartlett wanted to see if recall from memory is reconstructive. Would British participants' recall of unfamiliar material be affected by schemas so that their errors followed a pattern?

Procedure

Bartlett showed 20 British participants an Inuit (Native American) folk tale (*War of the Ghosts*, see left). Each person read the story twice and 15 minutes later told it (from memory) to someone who had not read it. This person told it to someone else and so on (like Chinese whispers). This method of testing memory is called *serial reproduction*. Bartlett kept a record of what each person remembered.

Findings

The story was transformed in several ways:

1. *Shortening* – it was shortened significantly (because details were left out). The story is 326 words long, but after six or seven reproductions it became about 180 on average.
2. *Rationalisation* – Bartlett noticed that the supernatural element (at the heart of this ghost story) vanished altogether.
3. *Confabulation* – phrases were changed to language and concepts from the participants' own *culture* (e.g. 'boats' instead of 'canoes').

Conclusions

The transformations occurred because participants' schemas influenced what they could remember about the story. The material became more meaningful and easier to understand and remember.

Evaluation

Application to EWT

One strength is that reconstructive memory can help explain problems with eyewitness testimony (EWT).

EWT is often used in court trials to give a picture of what happened when a crime was committed. For example, an eyewitness might swear on oath that they had seen a certain person at the crime scene, only for their testimony to be challenged by evidence presented later. Memory can be affected by schemas (including expectations of what 'should' happen), so people do not always recall events accurately.

Consequently, convictions in court are less likely to be based on EWT alone as it can be unreliable – a very important application of research.

Some memories are accurate

One weakness is that not all memories are affected by schemas.

Recall can be very accurate. For example, in situations that are personally important or distinctive we can remember a lot of accurate detail. In Bartlett's study, participants often recalled the phrase 'Something black came out of his mouth' because it was quite unusual.

This shows that people may not always actively reconstruct memories, and memory can be highly accurate and relatively unaffected by schemas.

Evaluation

Realistic theory and research

One strength is that Bartlett used realistic methods to study memory.

Before Bartlett's work, psychologists used artificial materials (e.g. 'nonsense syllables' such as RIZ and KUY). These are artificial because we rarely use memory to learn such meaningless things. Instead, Bartlett used an everyday kind of task (recalling a story) to show what happens when we try to recall an unfamiliar story.

Therefore, he was able to draw conclusions more relevant to real-life memory.

Unscientific research

One weakness of Bartlett's study is that its procedures lacked consistency, which is a key requirement for scientific research.

In scientific research, procedures are 'standardised' so the experience of the study is the same for every participant. This was not true of Bartlett's study. For example, some of his participants only reproduced the *War of the Ghosts* story when he happened to 'bump into' them.

This means we cannot be confident that reconstructive memory theory is correct, as it is based on unscientific research.

GET ACTIVE Wedding memories

Prince Harry and Meghan Markle were married in May 2018. The wedding was 'witnessed' by millions of people on TV. Were you one of them?

1. *What do you remember about it?*
2. *Looking back, do you think that your memory of the wedding is accurate?*
3. *Choose a well-known event in the news that you 'witnessed' (e.g. on TV).*

Try to recall as much detail about it as you can, and jot down some notes about what you remember.

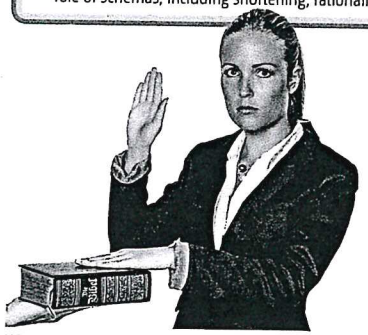
Now, find an account in the media of the event and compare it with your recall. Look for evidence of how your schemas may have influenced your memory. Are there any important details you missed out or recalled inaccurately? Is there anything you were convinced must have happened but hasn't been reported?

Exam-style questions

1. State what is meant by the term 'reconstructive memory'. (1)
2. Using an example, explain what is meant by the term 'schema'. (3)
3. Explain **one** feature of schemas that can influence reconstructive memory. (2)
4. Explain how a cognitive psychologist would account for reconstructive memory. Use the concept of schema in your answer. (3)
5. Bob and Sue are friends who together witnessed a street robbery and gave statements to the police. They discussed afterwards what they had said. Bob's statement was much longer than Sue's. Sue included some details that Bob did not remember happening. Both realised that they included the same events but described them very differently.

   Outline how a cognitive psychologist might explain the differences between the two statements. (3)
6. Explain how the findings of Bartlett (1932) support the view that schemas influence memory. (3)
7. Dev and Suni are discussing memory. Dev believes that recall is like playing back a recording. But Suni argues that recall is more of a reconstruction. Suni also believes that studies support her argument.

   Discuss the view that memory is reconstructive. In your answer you should consider the role of schemas, including shortening, rationalisation and confabulation. (9)



Witnesses very rarely lie. But they do sometimes get it wrong. They take an oath to tell 'the truth, the whole truth and nothing but the truth', so they try their hardest to remember things accurately. But memory is often reconstructive, so piecing together memories of what they saw is likely to be affected by schemas. This is why witnesses to the same crime can often have different memories of it.

An issue to consider

Can we rely on memory if it is reconstructive? Can you think of any real-life examples where inaccurate recall could have serious consequences?

Specification content

B1 Cognitive approach

Key concepts:

- Reconstructive memory, including the role of schema (shortening, rationalisation and confabulation).

Key study:

- Bartlett (1932) War of the Ghosts.

Key concept 2 and key study

Imagine this

Your teacher asks you to carry out a very simple task. All you have to do is unscramble some mixed-up sentences. You get them all right. You leave the classroom thinking, 'That was too easy. What was it all about?'

You don't know it, but your teacher isn't interested in how you did on the task at all. Instead, she's timing you to see how long it takes you to leave the room. She's done this with all the students in your class. It turns out you walked a lot slower to leave the room than some of your classmates did.

Why?

There could be many reasons, but here's an interesting fact. All of the students did the same task, but there were two versions. In one version, some of the words in the sentences related to being old (bingo, retired, wrinkled, etc.). In the other version the words were neutral (thirsty, clean, private, etc.). Guess what? You got the 'old' version. Like you, all your classmates who got the old version were also slower to leave the room.

Sounds weird? Hard to believe? John Bargh and his colleagues (1996) did this experiment and got this exact finding.

Specification terms

Associative priming We process a stimulus more quickly (or recall it more easily) because we earlier encountered a stimulus that is often paired with it.

Cognitive priming We notice a stimulus (word, image, object, etc.) more quickly when we see or hear a related stimulus first (the 'prime').

Cognitive scripts Knowledge of behaviours, roles, outcomes, etc. stored in memory tell us what to expect in a social situation and how to behave.

Repetition priming We process a stimulus more quickly (or recall it more easily) because we encountered it earlier.

Semantic priming We process a stimulus more quickly (or recall it more easily) because we earlier encountered a stimulus related to it in meaning (semantics = meaning).

Et al.

Throughout your course you will be reading about many different research studies. The findings of a study are published in an academic magazine (journal) along with the name(s) of the researcher(s) and the date when their report was published. When there are more than two researchers the convention is to write '*et al.*' which means 'and others'. Simples.

Key concept: Cognitive priming

What is cognitive priming?

When you see or hear one stimulus (the 'prime'), this affects your response to a later stimulus (you usually process the later stimulus faster). The prime triggers a network of related concepts in memory, so that when the second stimulus occurs, activation is quicker. *Priming* may happen below your level of awareness so you do not know your response is influenced.

Role of cognitive scripts

You have learned how people normally behave in many social situations, such as being in a restaurant. The term *cognitive script* is used to describe what you have learned. It is like learning to act a scene in a play – the text for a play is called a script and tells you what to do and say.

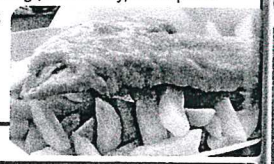
Cognitive scripts are learned through experience (including from TV and books). When in a social situation, we recall from memory (without being aware) the relevant script containing the features of the situation, what we can expect and how we should behave.

Types of cognitive priming

Repetition priming When you encounter the prime (e.g. the word *avocado*) you process it more quickly when you see or hear it again later than you otherwise would have done.

Semantic priming Two stimuli mean the same thing or have similar features. For example, if you see or hear the word *computer*, it is easier to recognise or recall the word *laptop* later – you process *laptop* faster because it is related in meaning (semantically) to the prime.

Associative priming The prime and the later stimulus are related but not semantically. For example, *fish* and *chips* are so often paired that they are closely associated in memory. If you are exposed to one you are more likely to later recognise or recall the other.



Key study: Harris *et al.* (2009) Priming effects of television food advertising on eating behaviour

Aims

The researchers wanted to see if watching food adverts on TV would cause adults and children to automatically eat available snacks.

Procedure

Schoolchildren watched a cartoon – some saw a version with ads for food, others saw it with non-food ads. All were given a snack while watching the cartoon and the researchers measured the amount eaten.

Adult students watched a TV programme – some saw a version with food ads promoting snacking as fun, some saw it with food ads promoting health, the rest saw it with no food ads. Afterwards, the students tasted and rated five snacks ranging from healthy (carrots) to unhealthy (cookies). The researchers measured the amount of each snack eaten.

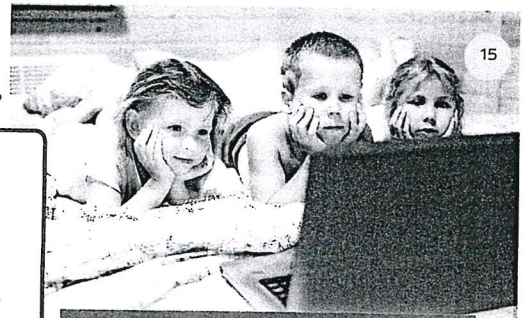
Findings

Children who saw the food adverts ate 45% more of the snack than the other children. This difference was not related to any other factor.

Adult students who saw the fun snack adverts ate more (of all foods) than the other students (especially men and people who were 'dieting'). Hunger before eating was unrelated to amount eaten in the fun snack group.

Conclusions

The findings provided 'converging evidence of an automatic, direct causal link between food advertising and greater snack consumption'. Advertising is powerful because it has multiple priming effects, including short-term (enjoyment) and long-term (healthy eating).



Cognitive priming could help us to understand how viewing screen-based adverts, vlogs and programmes affect our behaviour. Does watching violent programmes prime us to be more aggressive? Does a 'diet' of food adverts prime us to eat more?

Evaluation

Evidence supports cognitive scripts

One strength is that cognitive scripts can help us understand the effects of video gaming on aggressive behaviour.

In a study by Ingrid Möller and Barbara Krahé (2009), students read a scenario in which someone is accidentally pushed so they spill their drink. Students who frequently played violent video games were much more likely than other students to interpret the push as deliberate. They were also more likely to choose physical *aggression* as a suitable response.

This shows that people who play violent video games find it relatively easy to recall aggressive cognitive scripts stored in memory, supporting the idea of *associative priming*.

Lack of replication

One weakness of cognitive priming is that the research it is based on is very hard to replicate.

Replication is an important feature of science. If a study is repeated using exactly the same procedure and produces the same finding, then we know that the outcome is not a fluke and it is more likely to represent something real. But when researchers replicate priming studies, they often get different findings. This suggests that the researchers themselves might be influencing the outcomes.

This implies that the concept of priming is not scientific and we cannot be confident that the theories are correct.

Evaluation

Application to the problem of obesity

The key study can help us to understand and prevent cognitive causes of obesity.

Harris *et al.* showed that advertising can affect how many snacks children and adults eat because of cognitive priming. Once we understand the effects of priming we may be able to prevent this influence (or direct the influence towards healthy eating).

This means that education and legislation (although politically difficult) could help to prevent obesity, for example, especially in children.

Artificial conditions

One weakness of the key study is that it was conducted in 'artificial' conditions.

For example, every child watched the cartoon and adverts on their own in a classroom at their school (or an unoccupied room at a summer camp). This meant the conditions differed from real-life viewing of adverts, which usually takes place in the home environment and often with other people.

Therefore, the key study may not provide meaningful evidence for the effects of cognitive priming and cognitive scripts on real-life behaviour.

Exam-style questions

1. State what is meant by the term 'cognitive priming'. (1)
2. Give an example of how cognitive scripts might affect behaviour in everyday life. (2)
3. Describe **one** finding of the key study by Harris *et al.* (2009). (2)
4. Explain **one** strength or **one** weakness of the key study by Harris *et al.* (2009). (3)
5. A psychologist asked a group of students to read a brief passage and then complete a word task. The passage described the layout of a doctor's surgery. The task was to complete words with missing letters (e.g. N _ _ S _). Another group of students also completed the word task but did not read the passage first.
   (a) Describe the finding you would expect the psychologist to get. (2)
   (b) Use the concept of cognitive priming to explain this finding. (3)
6. Some psychologists believe that cognitive priming affects our everyday behaviour without us realising. Others argue that priming only really exists in laboratory-based artificial studies.
   Discuss the role of cognitive priming in influencing behaviour. In your answer you should consider different types of priming and **one** example of real-life behaviour. (9)

An issue to consider

If you use social media you may have been exposed to cognitive priming without realising it. Can you explain how?

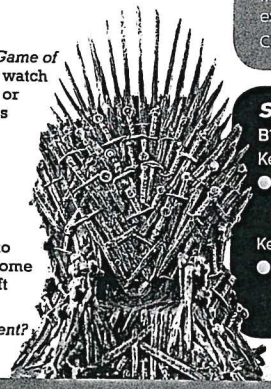
GET ACTIVE Sabiha and Imy

Sabiha's friends all watch the popular series *Game of Thrones*, so she decided to read about it and watch an episode. By the end of the day, she had seen or heard the word 'throne' in lots of different places – in overheard conversations, on Twitter and Facebook, even in her college textbooks.

1. ***What type of cognitive priming is this?***
2. ***Describe another type of priming that Sabiha might have experienced.***

Imy was going to the cinema with her parents to see the latest blockbuster. 'I'm going to have some popcorn and an ice cream,' she said as they left the house.

3. ***How do cognitive scripts explain Imy's comment?***



Specification content

B1 Cognitive approach

Key concept:

- Cognitive priming, including the role of cognitive scripts and different types of priming (repetition, semantic and associative).

Key study:

- Harris, Bargh and Brownell (2009) Priming effects of television food advertising on eating behaviour.

Key concept 3 and key study

Do you live in a filter bubble?

You might well do if you get your news from social media such as Facebook. Algorithms detect your preferences and tailor what the news feeds serve up to you. You see only items that match your preferences and these reinforce your current opinions. You rarely get to see information that contradicts or challenges what you already believe.

Such 'filter bubbles' are sometimes called an echo chamber because all you ever read or hear are your own views reflected back at you.

Some people argue that filter bubbles are a threat to democracy because other viewpoints and opinions are excluded from social media feeds. If you want to read other views you have to work harder to find them. Most of us can't be bothered to spend the time or effort doing that extra work.

Specification terms

Cognitive biases Errors in how we process information that affect our attention, memory and decision-making.

Confirmation bias We pay more attention to (and recall more easily) information that supports our existing beliefs. We may seek it out and ignore contradictory information.

Fundamental attribution error In explaining the reasons for other people's behaviour, we focus on their personal characteristics and overlook the role of the situation.

Hostile attribution bias A tendency to assume that someone else's behaviour has an aggressive or antagonistic motive when it is actually neutral.

'The strongest bias in American politics is not a liberal bias or a conservative bias; it is a confirmation bias' (Roller 2016).

Key concept: Cognitive biases

What are cognitive biases?

These are errors in how we process information. They affect ('bias') what we notice, what we remember and how we make decisions. *Cognitive biases* are risky because they undermine our ability to make rational choices and logical decisions. But on the plus side they simplify social interactions and allow us to make decisions quickly (they are 'shortcuts' that help us process incoming information).

Fundamental attribution error (FAE)

Attribution is the process of trying to explain other people's behaviour, for example explaining why someone was late or aggressive. Generally our explanations are either in terms of personal characteristics (maybe he is late because he doesn't think it is important to be on time) or situation (maybe he is late because he missed his bus).

We naturally tend to overemphasise personal characteristics and downplay the role of the situation. For example, if a student fails to hand in an essay on time, their teacher might believe it's because the student is lazy (a personal characteristic). But in fact there could be many situational causes of the behaviour (e.g. the dog ate it).

Confirmation bias

We tend to favour information that supports a belief we already hold. For example, if you support a particular football team you are more sensitive to information that confirms your view of the team. We notice confirmatory information more quickly and we store and recall it more readily. But we ignore, downplay or reject examples that challenge our beliefs, and stop looking for contradictory information.

Hostile attribution bias

We may wrongly interpret other people's behaviour as threatening (hostile) when in fact it is neutral. Someone with this bias may respond aggressively to what they see as a deliberate intention to cause them harm but is really an innocent act (e.g. an accidental jostle in a crowded pub).

Key study: Loftus and Palmer (1974) Reconstruction of automobile destruction

Aims

The researchers wanted to see how changing one word in a question would affect (bias) people's estimate of the speed of a car in an accident.

Procedure

University students watched film clips of car accidents and then answered written questions. One of the questions (the critical question) was: 'About how fast were the cars going when they _____ (into) each other?'.

The students were divided into five groups. Each group was asked the same critical question but with a different verb (in the space). One group was asked the question with *contacted* in it, another with *bumped* in it, and the other groups with *hit*, *collided* or *smashed* instead.

Findings

The students' speed estimates were influenced by the verb in the critical question. The average (mean) estimated speed was highest for smashed (40.5 mph) and lowest for contacted (31.8). The other mean estimates were 39.3 for collided, 38.1 for bumped and 34.0 for hit.

Conclusions

Changing just one word in a question can bias responses (because the participants' estimates matched the 'strength' of the verb). Loftus and Palmer later showed that changing the verb did more than just bias responses; it changed the participants' memories of the accidents.

Evaluation

Applications to real-life behaviour

One strength of cognitive biases is that they can be applied to behaviour in real life.

For example, the *hostile attribution bias* helps us understand why some people are aggressive. Their thinking is biased towards an aggressive interpretation of other people's behaviour. *Confirmation bias* explains why behaviour can be 'tribal' (e.g. politics, sport). We only seek information that supports our current preferences (e.g. for one political party) and ignore everything else.

This is useful because understanding cognitive biases is the first step in preventing them affecting behaviour, reducing *aggression* and conflict.

The FAE is not universal

One weakness is evidence that the *fundamental attribution error* (FAE) only exists in some *cultures*.

Some cultures (e.g. USA) are described as *individualist* because people value individual needs above the needs of the wider community. So behaviour tends to be attributed to individual characteristics because that is how behaviour is understood in such cultures. However, in *collectivist* cultures (e.g. China) the group/community is prioritised over individual needs, so people tend to attribute behaviour to situational factors and not to personality.

This suggests that the FAE is likely to be culturally-specific and not a feature of all human behaviour (this may also be true of other biases).

Evaluation

Experimental control

One strength of the key study is that it was highly controlled.

As it was carried out in lab conditions, irrelevant variables could be controlled. For example, each participant witnessed the (filmed) accidents from the same viewpoint. In a real-life situation participants' estimates of speed might have been affected by where they were standing.

This means we can be more confident that the critical word changed the speed estimates because *extraneous variables* were controlled.

Biased sample of participants

One weakness of the key study is that the participants were relatively young (university students).

Some studies (e.g. Anastasi and Rhodes 2006) have shown that younger people (18–25 years) are more accurate in their eyewitness reports than older people (55–78 years).

This means estimates in this study are unlikely to represent the responses of older people, making it hard to generalise findings to the wider population (where estimates may be even less accurate).

GET ACTIVE A wrong diagnosis

This real case was described by Caroline Wellbery (2011). A woman visited her doctor with two major symptoms – a rash under her arms and pain in her joints. The patient was obese and had Type 2 diabetes. The doctor diagnosed *intertrigo*, which is inflammation caused by folds of skin rubbing together. He prescribed ointment for the rash and ibuprofen for the pain.

Unhappy with this outcome, the patient sought a second opinion. The second doctor ordered a blood test and diagnosed Lyme disease. This is a bacterial infection usually caused by a bite from a tick (for example when walking in the countryside).

1. ***How did confirmation bias contribute to the wrong diagnosis and treatment? Identify at least two specific examples from the case to support your explanation.***
2. ***Do you think the fundamental attribution error might also have played a role? Explain how.***

'Did you spill my pint?' Some aggression can be explained by the hostile attribution bias. Spilling someone's drink is not usually deliberate but someone with this cognitive bias might think it is.

Exam-style questions

1. State what is meant by the term 'cognitive biases'. (1)
2. Choose **one** type of cognitive bias and explain how it might affect behaviour in everyday life. (2)
3. Jessie and Keira were trying to persuade Lennie to join them on a night out in town. Lennie didn't want to go, so Jessie said to Keira, 'He doesn't want to go because he's just a grumpy old misery guts.'

   Describe **one** type of cognitive bias Jessie is showing. (2)
4. Describe **one** example of the hostile attribution bias in everyday life. (2)
5. Describe **one** finding of the key study by Loftus and Palmer (1974). (2)
6. Explain how **one** finding by Loftus and Palmer (1974) demonstrates the role of cognitive biases. (3)
7. Explain **one** strength or **one** weakness of the key study by Loftus and Palmer (1974). (3)
8. Charlie was convinced he had cancer because he had a dull aching pain in his lower abdomen. So he went on the internet and found out that a dull aching pain in the lower abdomen is a symptom of cancer. 'You see,' he said to his best friend, 'I told you I had cancer.'

   Explain Charlie's behaviour using your knowledge of cognitive biases. (3)
9. Evaluate the role of cognitive biases in real-life behaviour. In your answer you should consider **two** or more different types of cognitive bias and **one** example of real-life behaviour. (9)

An issue to consider

Think back over what you were doing in the last 30 minutes. What attributions have you made about the people around you (i.e. what explanations have you given for someone's behaviour)? List some of them.

Now tick the ones which might be biased.

Specification content

B1 Cognitive approach

Key concept:

- Cognitive biases, including fundamental attribution error, confirmation bias and hostile attribution bias.

Key study:

- Loftus and Palmer (1974) Reconstruction of automobile destruction.

Content area C1: Use of psychology to explain contemporary issues of aggression in society

Cognitive approach to explaining aggression in society

Road rage

If you wanted to carry a gun, you wouldn't be able to in the UK because the law prevents you. It's different in the USA. People who are allowed to own guns sometimes keep them in their cars. Does this make them kinder, more considerate drivers? No, it does not.

According to Brad Bushman and his colleagues (2017), people drive more aggressively and are more abusive to other road users when there is a gun in the car (as opposed to a tennis racket). The gun doesn't even have to do anything – it just has to be there.

This is called the *weapons effect* and is nicely summarised by a quote from Leonard Berkowitz (1967): 'The finger pulls the trigger, but the trigger may also be pulling the finger.'

Specification terms

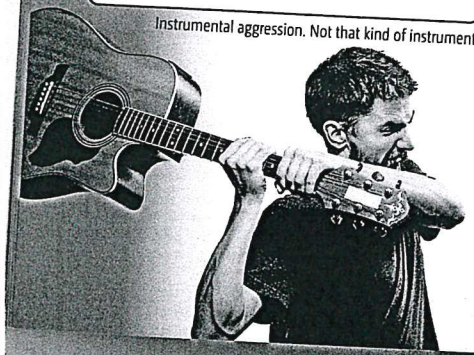
Aggression Behaviour that is intended to cause psychological or physical injury.

Hostile aggression Angry and impulsive aggression usually accompanied by physiological arousal.

Hostile attribution bias A tendency to assume that someone else's behaviour has an aggressive or antagonistic motive when it is actually neutral.

Instrumental aggression Goal-directed and planned aggression usually not accompanied by physiological arousal.

Priming We notice a stimulus (word, image, object, etc.) more quickly when we see or hear a related stimulus first (the 'prime').



Instrumental aggression. Not that kind of instrument.

Types of aggression

Psychologists define *aggression* in terms of three main types of behaviour.

Hostile aggression is sometimes called reactive or 'hot-blooded', this is angry and impulsive aggressive behaviour. It is accompanied by physiological arousal, e.g. increased heart rate and blood pressure. It is often physical but sometimes verbal or relational (see below).

Instrumental aggression is proactive or 'cold-blooded' because it involves using aggression (as an 'instrument') to get what you want. Therefore, it is goal-directed, planned and usually *not* accompanied by physiological arousal. This would be typical, for example, of bullying. It can be physical, verbal or relational, usually intended to provoke a response.

Relational aggression involves damaging relationships by, for example, spreading gossip or withdrawing friendships. This is instrumental when used as part of a plan or campaign of aggression to undermine an individual. But it can also be hostile, for example firing off an angry text or social media post in the 'heat of the moment'.

The cognitive approach

Priming for aggression

Leonard Berkowitz and Anthony LePage (1967) noted that the presence of a weapon in a *laboratory* was associated with stronger electric shocks being selected by participants. They argued that the weapon was a cue that triggered (or primed) aggressive *schemas* in the minds of participants.

Berkowitz (1984) and many others have used this theory to explain how violent media (e.g. films, games) can cause aggressive behaviour. Repeatedly viewing such media provides us with a *cognitive script* (see page 14) which indicates what violent situations involve and how they can develop. The script is stored in memory until environmental cues (e.g. an accidental nudge) prime it, making it easier to recall.

Researchers have expanded this account to incorporate modern social media sources such as Instagram and Facebook (e.g. constant exposure to angry and aggressive social media posts may prime aggressive thoughts in users).

Priming occurs without us even being aware of it. We might observe someone's hostile and aggressive behaviour in one social situation, for example, watching a TV programme. And then later, we would make a wrong interpretation of someone else's behaviour in a completely unrelated situation, for example when out shopping we might believe that someone who 'jumped the queue' in a shop was being hostile when it was really an accident. This partly accounts for the automatic nature of much hostile aggression.

Hostile attribution bias (HAB)

We looked at this briefly on page 16.

People with a *hostile attribution bias* (HAB) tend to interpret other people's behaviour as threatening or aggressive (hostile) even if it is in fact neutral or ambiguous (unclear). For most of us, if someone accidentally stumbles into you, you understand it wasn't their 'fault' and they meant nothing by it (you might even apologise to them!). But someone with a HAB is more likely to see this as a deliberate act directed personally at them.

This is a self-fulfilling process. Someone with a HAB may feel provoked and become verbally or physically aggressive. If the people around them respond with their own aggressive behaviour, then this confirms to the person with a HAB that their belief was correct and they were justified in being aggressive.

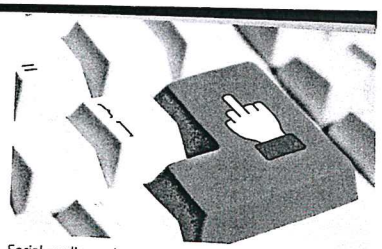
According to Nicki Crick and Ken Dodge (1996), a HAB is the result of abnormal processing of social information. A person with a HAB pays special attention to cues in a social situation that might be aggression-related (even if other people interpret them as neutral). If that person has a schema for supermarkets that includes the information 'there is intense competition for a place at the checkout', this predisposes the person to behave aggressively in supermarkets. Thus a HAB is created.

GET ACTIVE Tomos and Sheena

Tomos regularly uses social media. He contributes angry posts to fierce arguments often in the evenings, sometimes during the night and in the morning. Tomos is a teacher and by the time he gets to school he is usually in a bad mood. He shouts at students and is very 'short' and offhand with other teachers.

Sheena is a firefighter who has a reputation for being 'spiky'. She often misinterprets her colleagues' behaviour. For example, once during training the person she was working with accidentally dropped a hose reel on her foot. He apologised but Sheena squared up to him and they almost came to blows.

1. *Identify and explain the types of aggression in these scenarios.*
2. *Explain how the cognitive approach accounts for the behaviour of Tomos and Sheena.*



Social media can have priming effects by exposing us to angry and aggressive interactions that we may carry over into the face-to-face world.

Evaluation

Research support for priming

One strength is that several forms of media have been found to prime aggressive attitudes and behaviours.

Peter Fischer and Tobias Greitemeyer (2006) investigated how song lyrics can prime aggressive cognitive scripts. Male participants listened to songs featuring aggressively derogatory lyrics about women. Compared with when they listened to neutral lyrics, participants later recalled more negative qualities about women. They also behaved more aggressively towards a female *confederate* (someone instructed by the researchers about how to behave). Similar findings were obtained with female participants listening to 'men-hating' lyrics.

This provides *experimental* support for the role of *cognitive* factors in aggression.

Research support for hostile attribution bias

Another strength is that many studies have found a link between HAB and aggression.

Bram Orobio de Castro *et al.* (2002) reviewed 41 studies of HAB in children. They found that 37 of the studies agreed there was a significant association between hostile attributions and aggressive behaviour. Sarah Healy *et al.* (2015) found that mothers with a HAB tended to have more aggressive children who also showed a HAB at the age of five years. Possibly a HAB is the result of social learning (see page 28).

This research shows the importance of HAB in aggression and suggests one way in which it could develop in children.

Correlation not causation

One weakness is that most of the research shows a *correlation* between cognitive factors and aggression.

For instance, studies show that a strong HAB is associated with more aggression. But correlational research does not show that HAB (or priming) *causes* aggressive behaviour. This is because no variables are manipulated or controlled. Instead of people with a strong HAB being more aggressive, it may be that being more aggressive produces a strong HAB. Or perhaps a third factor is responsible for both the strong HAB and aggressive behaviour such as lack of money.

This means the conclusions are limited because correlational research does not allow us to identify the direction of causality.

Applications of the cognitive approach

One strength is that aggressive behaviour could be reduced using the cognitive approach.

Explanations for any behaviour are useful because they help us to understand the behaviour – but also because they can be developed into methods to reduce problematic behaviours. In this case, we can apply the cognitive understanding of aggression to a means of reducing aggression. Cognitive therapy, for example, tries to change HABs and thoughts that prime aggressive behaviour. Nancy Guerra and Ronald Slaby (1990) helped male and female adolescent prison inmates to replace hostile attributions with positive ones. Compared with a control group, they showed a much reduced HAB and less aggression (as rated by staff).

This means that real practical benefits are possible using the cognitive approach, reducing aggression and the social costs that go with it.

Exam-style questions

1. Explain what is meant by the term 'instrumental aggression'. (2)
2. Explain how the cognitive approach accounts for aggression. Use the concept of cognitive bias in your answer. (3)
3. Give **three** features of the cognitive approach that can explain aggression. (3)
4. Harris *et al.*'s (2009) study showed how cognitive priming can influence behaviour. Explain how cognitive priming can affect aggressive behaviour. (3)
5. Freida was in a pub when a man accidentally trod on her foot. Even though he apologised, Freida still got angry and hit him in the face.
   (a) Describe the type of aggression shown by Freida. (2)
   (b) Use **one** aspect of the cognitive approach to explain Freida's behaviour. (2)
   (c) Evaluate the view that aggression is mainly the result of cognitive factors. In your answer you should consider: (i) the concept of cognitive biases, and (ii) reference to Freida. (9)

Link it

How can Bartlett's (1932) study of schemas help to explain aggressive behaviour?

Explain the link between the findings of Harris *et al.*'s (2009) study and priming of aggressive behaviour.

How do different types of cognitive bias explain aggression?

In this section of the unit we have changed 'An issue to consider' to 'Link it' because you may be asked to link topics in content area C to the studies in content area B.

Specification content

C1 Use of psychology to explain contemporary issues of aggression in society

Learners should be able to demonstrate knowledge of different types of aggression, including:

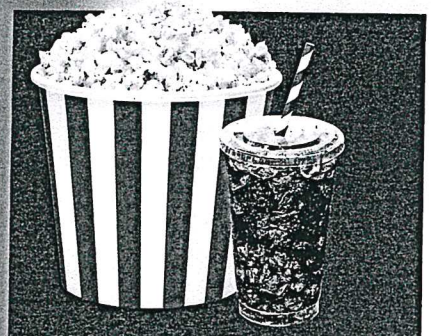
- Hostile and instrumental.

Learners should understand and apply knowledge of how psychological concepts and research can be used to explain aggression in society:

- Cognitive, including priming for aggression, hostile attribution bias.

Content area C2: Use of psychology in relation to consumer behaviour

Cognitive approach to consumer behaviour



Hidden messages?

In 1957 an advertising executive called James Vicary called a press conference to make a sensational claim.

He said that he had shown a film to cinema-goers in which he had repeatedly flashed the phrases 'Drink Coca-Cola' and 'Eat popcorn'. The twist was that the phrases were on the screen so briefly that the viewers were not even aware of seeing them.

But Vicary went further. He claimed that sales of Coca-Cola and popcorn had rocketed in the cinema. Ever since then, people have worried that their behaviour could be manipulated by advertising messages that they can't see or hear. This 'subliminal advertising' is one of the topics on this spread.

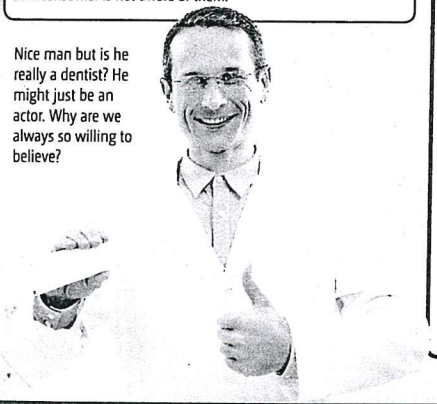
But the Coca-Cola effect is a myth. Vicary made it all up just to promote his advertising company.

Specification terms

Brainwashing techniques Methods used to alter or try to control what a person is thinking. In advertising it is used to entice consumers to accept an advert's message uncritically.

Consumer behaviour The study of all the activities associated with the purchase and use of goods and services.

Subliminal messages Stimuli that are not perceived consciously. In advertising such messages may be presented quickly or hidden so a consumer is not aware of them.



Nice man but is he really a dentist? He might just be an actor. Why are we always so willing to believe?

What is consumer behaviour?

Consumer behaviour refers to how people make decisions about what products or services to buy, and all the activities that influence those decisions, including advertising. There are two major types of advertising:

Product recognition Most advertising aims to make consumers more aware of a product (or brand or service). Similar products compete for the greatest share of the market, so making your product recognisable is crucial.

Campaigns to change public opinion Some advertising tries to change the views of the public about a product or brand. For example, cigarette advertising used to try to overcome negative attitudes towards smoking in order to increase sales.

Cognitive explanations

Schemas

A *schema* is a mental 'package' of knowledge relating to a concept, object, event, etc. (see page 12). Schemas help us to make sense of the world by making it more predictable, and this is true of commercial brands and products. However, predictability is the enemy of advertising. Schemas allow us to say, 'If you've seen one vodka advert, you've seen them all', and we will be less likely to recall the brand being advertised to us. Therefore, adverts are more likely to challenge our schemas rather than confirm them. This is *schema incongruity*, a deliberate conflict between our schemas and an advert's content (e.g. advertising an everyday product in a 'wacky' way).

Cognitive priming and advertising

We looked at *cognitive priming* on page 14. In advertising, Youjae Yi (1990) argued that a key form of *priming* is the context of an advert. Like any prime, context activates schemas in the minds of viewers, making a product more accessible. Car advertising is a good example. Very few car TV adverts begin with the brand or model name. They start with a context, a positive one such as 'roominess' or 'smooth ride'. This is then associated with the brand name. Then, at a later time when the context is encountered the viewer is primed to recall the brand.

Subliminal messages are a form of priming below the level of awareness. Often the message is 'hidden' within a stimulus that we can detect. For instance, in 1990 Absolut Vodka ran a TV advert with an image of their brand name hidden in ice cubes.

Another form of 'voluntary' *subliminal messaging* is self-help podcasts and videos. These claim to contain undetectable messages for you to see or hear, that will improve your memory or self-esteem, or help you give up smoking or lose weight, etc.

Brainwashing In the context of consumer behaviour, 'brainwashing' is intended to encourage uncritical acceptance of whatever messages the advertiser wishes to communicate.

A common technique is repetition, whereby the central message (a word, sentence or image) is repeated many times to create an association with a product. Sounds and colours are also used repetitively. Another important feature is an obvious appeal to emotions, to bypass critical thinking.

Biases and advertising

Confirmation bias Consumers prefer to hear information that confirms what they already believe, called a *confirmation bias*. This helps explain brand loyalty. Someone who has a good experience of a product will be receptive to its advertising and may even filter out competing brands. They seek to confirm that their decision was correct.

This is important in a retail market where customers upgrade their device every couple of years. However, because it is hard to overturn a negative opinion of a brand that a consumer has already formed, confirmation bias can work against a product.

Authority bias Consumers tend to assign more credibility to the opinion of an authority figure, who is likely to be an 'expert'. For example, adverts for toothpaste often use 'dentists' to explain the benefits of the product. Consumers are more persuaded by the authority even when they suspect the dentist is actually an actor.

GET ACTIVE 'A Mars a day...

...helps you work, rest and play'. That sentence is part of my schema for Mars bars.

We have schemas for countless aspects of the world around us. This includes products that are advertised to us as consumers. To get an idea of how product schemas work, think about a product you are familiar with, such as a Mars bar.

1. *Make a list of the words you associate with a Mars bar. This list represents your product schema for Mars bars.*
2. *Compare your schema to those of others. How similar are they? If they are similar, why are they so similar?*
3. *Outline an advert for Mars bars based on your schema.*
4. *What would be the advantage of making an advert 'schema-incongruent'?*

Evaluation

Supporting research for cognitive priming

One strength is evidence for the effects of priming in different senses.

Adrian North (2012) asked four groups of people to taste and describe wine as background music was played. Each group heard a piece of music that had different characteristics: one heard a 'powerful and heavy' piece, another heard something that was 'subtle and refined', a third group's music was 'zingy and refreshing' and the fourth's was 'mellow and soft'. The descriptions given by the participants tended to match the characteristics of the music, even though they all tasted the same wine.

This supports priming as a key influence on memory.

Effects of subliminal messages are weak

One weakness is poor evidence for the effects of subliminal messages.

The popular view is that these messages can make us buy or do something against our will, but it is more likely that they have very weak influences on behaviour and only for very short periods of time. Laura Smarandescu and Terence Shimp's (2015) participants carried out a visual detection task on a computer screen. However, the participants were being subliminally primed with the word 'Powerade' flashing on their screens without their awareness. Later, the participants were asked to select a drink from a shelf. Compared with a control group, participants were more likely to select Powerade, but only if they were already thirsty. However, this effect disappeared altogether when a 15-minute delay between the prime and selection was introduced.

Similarly, self-help programmes continue to be popular even though, according to Anthony Pratkanis and Elliot Aronson (1992), there is no evidence at all that they work.

These findings suggest that priming effects through subliminal messages have little or no effect on behaviour even in very limited circumstances.

Problems of replication in research

Another weakness is that the findings of research into priming are often contradictory.

Most studies do not support the view that priming can significantly affect consumer behaviour. But some studies do show positive effects. This apparent contradiction illustrates a serious problem in research into *cognitive priming* and advertising – that of *replication*. For a study to be considered scientific, psychologists must be able to replicate it. That is, they should be able to repeat the study and get the same outcome. This was the issue that uncovered James Vicary's deception (see facing page) – no one could replicate the effect.

This undermines the claims about the value of priming in consumer behaviour.

Ethical issues

A final weakness is that there are ethical issues involved in advertising techniques based on the cognitive approach.

For instance the use of subliminal messages in advertising is unethical because consumers are by definition unaware they exist. The person therefore does not know the true nature of the advert and the product. This is one reason why direct subliminal advertising is banned in most countries. The use of cognitive priming is perhaps less obviously unethical but it could be interpreted as a form of deception.

This means that psychologists should think very carefully about their professional involvement with techniques deliberately designed to manipulate consumers' perceptions of a product.

Exam-style questions

1. Explain what is meant by the terms 'subliminal messages' and 'brainwashing'. (4)
2. Explain how the cognitive approach accounts for consumer behaviour. Use the concept of schema in your answer. (3)
3. Give **three** features of the cognitive approach that can explain consumer behaviour. (3)
4. Explain **one** strength of the cognitive approach to consumer behaviour. (3)
5. Edgar uses social media a lot and sees many adverts. His partner thinks he is too easily influenced by them because he sometimes buys products he has seen advertised. He booked a hotel through a website because he liked the look of the beaches in their advert. Edgar always buys things advertised by experts in white coats.
   (a) Explain **one** example of priming in this scenario. (2)
   (b) Outline how **one** information processing bias might influence Edgar's behaviour as a consumer. (3)
6. Discuss techniques based on the cognitive approach that are used to influence consumer behaviour. In your answer you should consider: (a) schemas and cognitive priming, and (b) advertising. (9)

Link it

Bartlett (1932) found that schemas influence recall. What might this tell us about the effects of advertising?

What can Harris *et al.*'s (2009) study tell us about the influence of cognitive priming in advertising?

Loftus and Palmer (1974) found that the alteration of one word in a question influenced participants' responses. Explain the link with subliminal advertising.

Specification content

C2 Use of psychology in business to explain and influence consumer behaviour.

Learners should be able to demonstrate knowledge of the means used to influence behaviour, including types of advertising (product recognition, campaigns aimed at changing public opinion).

Learners should understand and apply knowledge of how psychological concepts and research can be used to understand and inform strategies aimed to change behaviour:

- Cognitive, including schema, cognitive priming (including subliminal messages and brainwashing techniques in advertising), biases in information processing.

Content area C3: Application of psychology to explain gender

Cognitive approach to explaining gender

Livvy James


John Anyon/Worcester News

Livvy was born Samuel and raised as a boy. But for as long as she could remember, she felt strongly that she was really a girl. She dressed and played as a girl, she behaved as a girl, she viewed herself as a girl. Livvy's sense of her own gender was being a girl. But when she went to school, she did so as a boy.

The conflict between her assigned and expressed gender was causing Livvy distress (which psychologists call *gender dysphoria*). So when she was 10, Livvy decided she wanted to be herself. With her family's support, after the summer holiday of 2011, she returned to school as a girl. Some of her schoolmates accepted her gender but others bullied her severely.

Livvy's experience shows the importance of being sensitive towards the wishes of people who are *transgender*. Language matters, and how we refer to people is part of that. Livvy still identifies and lives as female, and works to support transgender people.

Terms associated with gender

On this and the following spreads, we look at the topic of *gender* – being a male or female. This is a psychological construct and a person's gender may not always be the same as that person's biological sex (XX or XY chromosomes).

Gender is usefully seen on a spectrum along which people vary from one another and even throughout their lives. It is a spectrum rather than a *binary* construct in which you are either masculine or feminine. *Non-binary* people – who do not identify as exclusively masculine or feminine – may be gender-neutral (neither masculine nor feminine) or *androgynous* (both masculine and feminine).

Views about gender are changing but the gender binary is a *social norm* in most Western (and other) *cultures*. Therefore, we refer to *gender identity* or behaviour that matches this norm as 'gender-typical'. Identity or behaviour that does not match is 'gender-atypical'. This is intended to convey the fact that *gender-fluid* identity is not 'abnormal' or inferior, but is not common.

Cognitive explanations

You know that a *schema* is a mental structure containing stored knowledge of an aspect of the world. In the case of *gender schema* these are constructs that tell us how men and women are expected to behave, and these influence our personal gender identities and our behaviour. Gender schema theories try to explain how and when we acquire our gender schema.

Bem's gender schema theory (GST)

On page 34 you learned about the *Bem sex-role inventory* (BSRI), a measure of how masculine or feminine a person perceives themselves to be. Sandra Bem's (1981) gender schema theory describes how we *cognitively* process gender-related information.

Around the age of two years, children start to learn about schema related to gender from their culture. Because some cultures make strong distinctions between men and women, most members grow up holding *stereotyped* views of gender. For example, we learn that objects frequently have a gender (ships are feminine). As for jobs and roles – women are nurturing nurses, men are decisive doctors.

Gender-schematic/aschematic Gender-schematic people have a strong gender schema and categorise other people's behaviour as 'masculine' or 'feminine', even when the behaviour is not especially gender-relevant. They also behave in ways consistent with their gender schema. Gender-schematic people are highly sensitive to deviations from gender-stereotypical behaviour (e.g. a woman exhibiting masculine characteristics).

Gender-aschematic people attach very little significance to gender, hardly noticing it in their social interactions.

Androgyny Bem designed the BSRI to measure *androgyny*, proposing that a person can be both masculine and feminine. Traditionally people hold a binary view, that masculine and feminine behaviours are two separate clusters. Bem argued – that it is psychologically more healthy to avoid fixed gender identities. Instead men and women should feel free to adopt a variety of masculine- and feminine-type behaviours, i.e. be androgynous.

Martin and Halverson's (1987) gender schema theory

Carol Martin and Charles Halverson suggested that gender schema has an important effect on memory and what we remember affects our gender schema and consequently our behaviour.

Information consistent with the child's schema is more likely to be stored in memory and recalled than inconsistent information. For instance, if a girl believes that dolls are 'for girls' but football is 'for boys' she will seek out information about dolls, adding it to her gender schema. But she will ignore information about football. She can recall more about dolls than football.

Alternatively, her recall of gender-inconsistent information may be distorted to fit her gender schema (which at a young age is essentially made up of common stereotypes). For instance, in recalling a story about a male nurse and a female doctor, she may get the roles the wrong way round and this misremembering confirms her previous schema.

Specification terms

Androgyny Displaying a balance of masculine and feminine characteristics in one's personality (ando = male and gyny = female).

Binary Describes a choice of two states, for example something can be either on or off, or a person can only be male or female.

Gender The label of being male or female, as distinct from biological sex (the sex chromosomes are either XX or XY, see page 30).

Gender dysphoria A person feels dysphoria (discomfort) with the gender assigned to them at birth.

Gender fluid Not having a fixed gender.

Gender schema An organised set of beliefs and expectations related to gender that are derived from experience. Such schemas guide a person's understanding of their own gender and gender-appropriate behaviour in general.

Non-binary A term that suggests gender (or any concept) cannot be divided into two distinct categories, e.g. gender is not a question of being one or the other (male or female).

Transgender Relating to a person whose gender does not correspond with their birth sex. (Discussed on next spread.)

Barbie's house is nowadays overwhelmingly pink. The version sold in the 1950s and 1960s was red, yellow and white.

GET ACTIVE The pinkification of girls

If you take a walk along the aisles of any toy shop, you will notice it immediately. Girls' toys are overwhelmingly pink. So are girls' clothes, and shoes, make up, sports equipment, school equipment... There is even a range of pink Lego aimed at girls.

More broadly, products aimed at children are increasingly either pink or blue, with fewer in gender-neutral colours such as green and yellow.

There is a huge market for pink, because many girls appear to love it. This preference is unlikely to be innate. In the middle of the 19th century, the association was the other way round – pink was for boys and blue was for girls. Before then, it was white for both.

How might gender schema theory explain the apparent preference of young girls for the colour pink?

Evaluation

Explains rigidity of gender-related beliefs

One strength is that GST can account for how it is that children's attitudes and beliefs about gender are very fixed.

This is because children (and adults) tend to ignore information that conflicts with their gender schema. At the same time they pay greater attention to information that confirms their gender schema (e.g. a girl seeing a woman portrayed in a TV drama as a teacher rather than as a surgeon) because it is more consistent with their schema especially if it is related to their own gender.

This means that GST has explanatory power – it can explain a wide range of ways in which young children think about gender.

Neglects key non-cognitive factors

One weakness is that GST exaggerates the role of cognitive factors and underplays the importance of *social context*.

It is very likely that social factors are crucial in the early years during which a gender develops. For instance, the gender-related behaviour of parents and the rewards and punishments they hand out to children are key influences that are much better explained by *social learning theory* (see page 68). Bem (1981) did argue that the origins of the gender schema are cultural, but this is the least well-developed aspect of her theory.

This failure to address how social and cognitive factors interact means that GST is an incomplete explanation.

Narrow view of gender

Another weakness is that GST assumes that gender is binary.

This is clear from the theory's concepts of 'masculinity' and 'femininity'. It is true that Bem (1981) added the concept of androgyny but this is not a third gender. Instead, someone who is androgynous merely has a mixture of masculine and feminine characteristics (e.g. they are both assertive and nurturing). This is a narrow definition of 'non-binary' and not as flexible as it appears.

Therefore, GST is outdated and at odds with more recent views of gender as complex, fluid and non-binary.

Evidence for effects on memory

Another strength is that research supports the suggestion that memory is distorted by a person's gender schema.

Martin and Halverson (1983) showed 5/6-year-old children images of boys and girls behaving in ways that were either consistent or inconsistent with gender stereotypes (e.g. a boy playing with a truck, a girl chopping wood). When tested one week later, the children recalled the gender-consistent behaviour more accurately. When recalling gender-inconsistent images, the children tended to change the details to make their recall more consistent with their schema (e.g. it was the boy chopping wood, not the girl).

This finding is just one from many research studies that support predictions from GST, in this case that memories are distorted to fit with the existing gender schema.

Exam-style questions

1. Explain what is meant by the term 'gender'. (2)
2. Explain how the cognitive approach accounts for gender behaviours. Use the concept of gender schema in your answer. (3)
3. Give **three** features of the cognitive approach that can explain gender. (3)
4. Explain **one** strength or **one** weakness of the cognitive approach to explaining gender. (3)
5. Leo and Maria are siblings. Leo loves pretending to be a superhero, running around the house shouting and waving a sword which he uses to attack his sister. Maria enjoys playing quietly with dolls, changing their outfits, talking to them and helping them do household chores. She often has girlfriends round to join in.
   (a) Use **one** aspect of the cognitive approach to explain Leo's and/or Maria's behaviour. (2)
   (b) Discuss the view that gender is mainly the result of cognitive factors. In your answer you should consider: (i) gender schema theory, and (ii) reference to Leo and Maria. (9)

Link it

What is the link between Bartlett's (1932) concept of a schema and the cognitive approach to gender?

Harris *et al.* (2009) studied priming effects. Gender terms such as 'boy' prime people to think of associated characteristics. How does that influence expectations?

Cognitive biases (Loftus and Palmer 1974) influence what information we pay attention to and remember. How does this relate to our gender?

Specification content

C3 Application of psychology to explain gender

Learners should understand key terms associated with gender, including binary, non-binary, gender fluid, androgyny, transgender, masculinity, femininity, gender dysphoria.

Learners should understand and apply knowledge of how psychological concepts and research can be used to understand the typical and atypical gender of individuals in society.

The influence of the following on gender:

- Cognitive – role of biases and schema in gender (gender schema theory).