DP IB Psychology: HL

Your notes

Thinking & Learning

Contents

Your notes

Anchoring bias

- A **cognitive** bias is a faulty or **distorted** way of **perceiving** or understanding the world
- Biases act as **heuristics** (mental shortcuts) that help us make decisions quickly, but often at the cost of accuracy
- Those aware of biases can **exploit them**:
  - **Salespeople** use them to persuade customers to spend money
  - **Politicians** present information in biased ways to appear more favourable
  - **Media/social media** rely on biased framing (e.g., clickbait) to grab attention
- **Anchoring bias** occurs when **decisions** are made based on the first piece of information presented - **the anchor**
  - This 'locks down' a specific idea in someone's mind

Examples in consumer behaviour

- If a laptop is first presented at **£800**, people view this as its "true" value — even though no product has an inherent value
- A "discount" price of **£700** feels like a **saving of £100**, when in reality, the laptop might only cost £200 to manufacture
- Some retailers manipulate this effect by **creating artificial anchors** (e.g., marking an item as "reduced" from a price that never existed)
- Anchoring gives consumers a **false sense of getting a bargain**, reinforcing feelings of being "savvy" shoppers

Faulty adjustments

- Anchoring bias leads to **inaccurate estimates** since people adjust insufficiently from the initial anchor
  - E.g., a dress "reduced" from £75 to £50 feels like a £25 saving, but in reality, the consumer **spent £50** they may not have spent otherwise
- When using anchoring bias, people make higher estimates when the initial value is higher and lower estimates when the initial value is lower

Research support for anchoring bias

Kahneman & Tversky (1974)

Aim:

- To investigate anchoring bias in terms of estimation of a final product

Participants:

- High school students aged 16–18 years

Procedure:

- The participants were **randomly allocated** to one of two groups and asked to estimate the answer a mathematical question
  - **The ascending condition**: Participants were asked to estimate the product of 1×2×3×4×5×6×7×8
  - **The descending condition**: Participants were asked to estimate the product of 8×7×6×5×4×3×2×1
- Participants had 5 seconds to give their estimation

Results:

- The group with the low anchor (ascending condition) estimated the final product as **512** (mean value)
- The group with the high anchor (descending condition) estimated the final product as **2,250** (mean value)
- The correct answer for both ascending and descending conditions is **40,320**

Conclusion:

- Participants' estimates were strongly influenced by the **starting value (anchor)**
- A **low anchor** led to lower final estimates, while a **high anchor** led to higher final estimates — demonstrating the power of anchoring bias in decision-making

Evaluation of anchoring bias

Strengths

- One strength of anchoring bias is its **application** to several sectors (particularly in sales/retail)
  - This means that it has good **external validity**
- Awareness of anchoring bias can prevent people from making **expensive mistakes**
  - Some research suggests that being in a **good mood** is a **protective factor** against succumbing to anchoring bias
    - The 'take-home' from this finding is: don't shop when you're feeling down!

Limitations

- Research in this field is predominantly **lab-based,** which means that it lacks **mundane realism**
  - Mundane realism is the extent to which the tasks/procedures in a study reflect everyday experience

Your notes

- People are prone to cognitive biases but they are also more **sophisticated** than this theory suggests
    - Most consumers are wise to the **tricks** and manipulation of retailers and may buy a product in the full knowledge of what the retailer has put in place to draw their attention to it

Your notes

Link to concepts

Perspective

- Anchoring bias is a **cognitive construct**, operating through mechanisms of **information processing** and sometimes involving deliberate, conscious thought
- However, it does not fully explain decision-making that occurs without much cognitive effort
    - For example, impulse purchases based on "bargains" may be better explained by the **scarcity principle** from the **evolutionary approach**
        - Humans are thought to be biologically hardwired to compete for scarce resources
        - Marketing tactics such as *"early bird specials"*, *"while stocks last"*, or *"last chance to own"* exploit this evolutionary mechanism, creating urgency and pushing buyers to act quickly

Change

- Today's consumers are generally more **educated and aware** of marketing strategies than in past decades
- But increased awareness does not make people immune to manipulation through anchoring
- Retailers adapt by using strategies such as the **"dummy offer"**: presenting one poor-value option, one high-value option, and one "amazing" offer — nudging the consumer towards the choice that benefits the retailer most (often the higher-priced plan)
- Despite rapid social and technological change, these **classic persuasion techniques** remain highly effective

Your notes

Confirmation bias

- A **cognitive** bias is a faulty or **distorted** way of **perceiving** or understanding the world
  - A cognitive bias is a kind of **heuristic**
- Confirmation bias is the tendency to **overlook or ignore** information which does not align/agree with **preconceived ideas** about a person/event/situation/group and focus only information which **supports** existing **views and attitudes**
  - E.g., if I suspect that my husband is being unfaithful I will look for evidence of this in his behaviour and ignore examples which do not support my suspicions

Confirmation bias in research

- Researchers may:
  - Selectively record results supporting their hypothesis
  - Ignore findings that challenge it
- This leads to **low validity** and reinforces stereotypes

Research which supports confirmation bias

Pavkov & Lewis (1989)

Aim:

- To investigate whether **race/ethnicity** and confirmation bias determine decisions made by clinicians in terms of a **diagnosis of schizophrenia.**

Participants:

- Patients from four mental health hospitals in Chicago, USA
- The **sample** comprised two thirds male, two thirds aged 18–34 years
- They were from neighbourhoods that **represented** both Black-dominant and White-dominant **populations**

Procedure:

- The researchers **interviewed** the participants while they were in hospital
  - One of the interviews was **diagnostic** (i.e., to determine the nature of the patient's mental illness) and was conducted by an **expert** who had not been told the aim of the research
  - The researchers conducted the other interview, which focused on **social-psychological measures**, such as how **socially integrated** the patient was and how **aware** they were of their condition

Results:

- The researchers found that Black patients were more likely to be given a diagnosis of schizophrenia than White patients
    - This was particularly the case in hospitals which were located in Black-dominant neighbourhoods
    - This happened even when the misdiagnosed patients had previously been diagnosed with a different mental illness, i.e., not schizophrenia

Conclusion:

- Patients may be being misdiagnosed simply due to the colour of their skin; this is evidence of confirmation bias
- Clinicians may use stereotypes rather than objective evidence

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Evaluation of confirmation bias

Strengths

- Having an understanding of confirmation bias should enable people to avoid the mistake of **labelling** or **stereotyping** others who are not from one's own **cultural** (or other) group
- Interviews provide rich, detailed data which has strong **explanatory power**, and gives insight into the experiences of the participants

Limitations

- There are a range of extraneous variables involved in the above research
    - Using four separate hospitals housing a wide **variety** of staff, patients, equipment, location issues, etc., means that it is difficult to draw **meaningful** conclusions from the findings
- The participants may show **social desirability bias,** which would impair the **validity** of the findings

Link to concepts

Causality

- **Measuring confirmation bias** is difficult:
    - It is a subjective, ill-defined variable
    - Apparent evidence of confirmation bias may actually reflect other factors
- Pavkov & Lewis' (1989) findings suggest racial confirmation bias in the diagnosis of schizophrenia
- However, alternative explanations include:
    - clinician fatigue
    - limited time/resources

- understaffing
- Misdiagnoses were based on **only one interview**, which may be an unrealistic expectation for accurate diagnosis

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Bias

- The study may suffer from **sampling bias**:
  - Participants were drawn from **four hospitals in Chicago** only
  - This limits representativeness and generalisability
- To fully assess how confirmation bias affects diagnosis, the study should be **replicated in other states/countries** with more diverse samples

Your notes

Classical conditioning

- Classical Conditioning (**CC**) is learning via **association** and is one of the **core assumptions** of the behaviourist approach
- The behaviourist approach assumes that:
  - everyone is born as a '**blank slate**' which life writes upon
  - all behaviour is **learned** from the **environment**, e.g. **upbringing, neighbourhood, peers, education**
  - Only behaviours which can be **directly observed** can be **measured**
    - **Lab-based, scientific methods** are the only way that behaviour can be studied
  - **Animal research** may be used as a **basis** for understanding human behaviour
- **Classical conditioning** and **operant conditioning** underpin the **principles** of behaviourism

Mechanisms of classical conditioning

- CC occurs when a **neutral stimulus** is substituted for the original **unconditioned stimulus** to produce a **conditioned response**
- An **unconditioned stimulus** produces a **natural, unforced** response, i.e. no animal or human has to **learn** how to feel hunger:
  - The **unconditioned stimulus (UCS)** is the starting point
  - The UCS is a stimulus that produces an **unconditioned response (UCR):**
    - Food is an UCS as it is a natural, **physiological reflex**
    - The UCR to food being presented is to **salivate/feel hungry**
  - The UCS is paired with a **neutral stimulus (NS):**
    - One which, ordinarily and on its own, does **not** produce a strong response (neither positive nor negative) e.g. a **tone** being sounded
  - When the UCS is paired with the NS the response continues to be the UCR, as a result of the UCS
  - After repeated pairings, the NS is presented on its own and elicits the UCR e.g. salivation
  - The NS has thus become the **conditioned stimulus (CS)** and the salivation has become the **conditioned response (CR)**
  - When the CS is presented, it will result in the CR
  - The CR is generally **not** as strong as the UCR

- After some time, the NS must be paired with the UCS again; otherwise, **extinction** will occur

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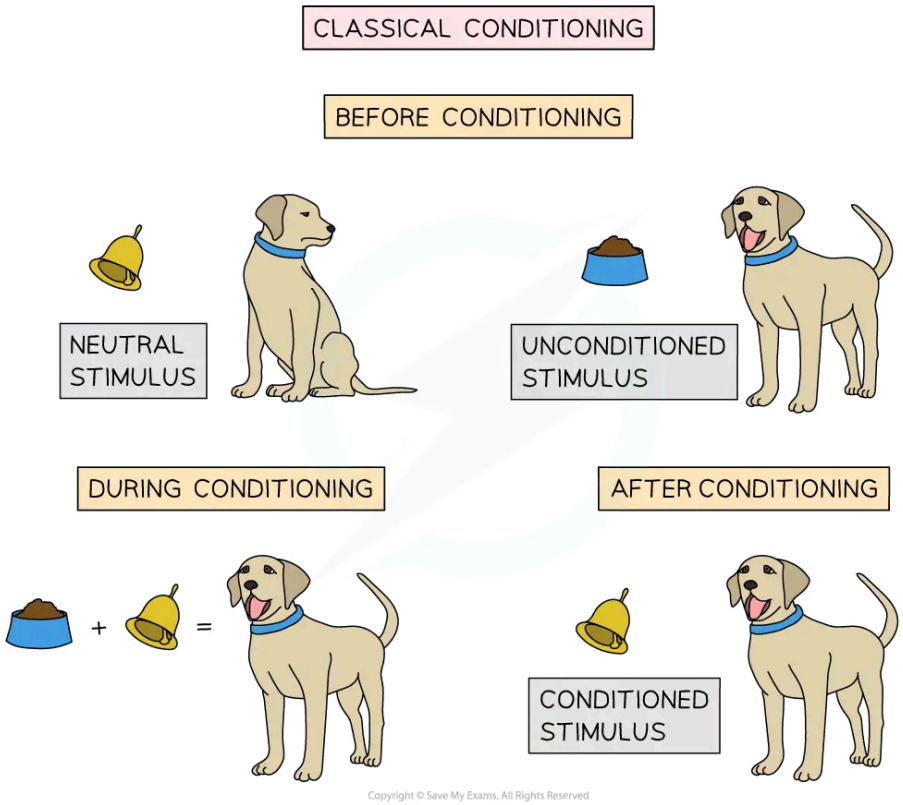
Research which supports classical conditioning

Pavlov (1897)

- Pavlov made an **accidental** discovery that dogs **salivated** upon hearing the footsteps of the lab technicians bringing them food
- To test what he had discovered, he set up the following **procedure**:
  1. The dog is given food as usual (UCS)
  2. The dog salivates when it sees and smells the food (UCR)
  3. A bell (NS) is sounded every time the food is presented (the **pairing** of NS and UCS)
  4. After **repeated pairings**, the dog salivates when it hears the bell
  5. The bell has become the **CS** and the salivating to the sound of the bell has become the **CR**
  6. The dog continues to salivate to the bell; however, when Pavlov stopped pairing the bell and the food, he found that the CR **decreased** and gradually **disappeared** (extinction)



Pavlov's classical conditioning procedure

Evaluation of classical conditioning

Strengths


Your notes

- The use of scientific methods (e.g., lab experiments) is **reliable**
  - Reliability is based on the use of a **testable hypothesis**
  - Hypothesis testing takes place in **controlled conditions** using **standardised, replicable procedures**
    - The above measures produce results which should show **consistency over time**
    - Thus, research into behaviourism has good **reliability**
- CC has good **application** to the treatment of **phobias** via **systematic desensitisation**
  - The phobic (conditioned) stimulus is gradually converted back to being a neutral stimulus via **deconditioning** (reversing the process of CC)

Limitations

- Whilst CC may explain *some* forms of behaviour, it cannot explain *all* behaviour
  - E.g., behaviour which is **spontaneous** or **original,** such as dyeing your hair bright blue
  - Behaviour which resists conditioning e.g., someone who has been brought up in a strict religious environment who goes on to reject that religion
    - This means that classical conditioning has limited **external validity**
- Behaviourism is highly **deterministic** (**environmental determinism**)
  - The assumption is that people are **controlled** by environmental **forces** and have little **autonomy** over their **destiny**
    - This assumption negates the role of **free will** in behaviour, which reduces the **usefulness** of the approach, seeing people in almost **mechanical** terms

Link to concepts

Perspective

- It is simplistic to assume humans can be 'programmed' by conditioning, as this ignores the many variables influencing behaviour
- This reflects **environmental reductionism**, reducing behaviour to stimulus-response links
- CC suggests phobias form when a **neutral stimulus (NS)** becomes a **conditioned stimulus (CS)** through an unpleasant pairing with a **UCS** (e.g., choking on a cotton wool ball)
- This may explain unusual phobias (e.g., cotton wool, buttons, ketchup) but is less convincing for phobias of genuinely dangerous stimuli (e.g., snakes, spiders, heights)
- The **biological preparedness** explanation argues humans are hard-wired to fear survival threats, making CC only a **partial explanation** of phobias

Measurement

- Behaviourism values only **observable behaviour**, allowing clear, operationalised procedures
- However, it **ignores cognition**, limiting explanatory power
- E.g., **memory** cannot be directly observed, only inferred, meaning CC cannot explain many important psychological processes

Your notes

Your notes

Operant conditioning

- Operant conditioning **(OC)** is learning via **consequences**
  - Along with **classical conditioning,** it is one of the **core assumptions** which underpin the **behaviourist approach**
- Where classical conditioning emphasises the **stimulus-response** mechanism of **learned behaviour**, OC emphasises the role of **reward and reinforcement** in behaviour
  - Some behaviours will be **repeated** based on their **positive** consequences, e.g., *'That burger was yummy; I'll certainly be paying another visit to Junkfood Shack!'*
  - Some behaviours will **not** be repeated based on their **negative** consequences, e.g., *'That's the last time I'm getting my lunch from Kale City!'*
  - Some behaviours will be repeated *not* for their positive consequences but to **avoid** their negative consequences, e.g., *'I suppose I'd better choose the lentil and sprout salad just to stop my friend nagging me about how unhealthy my diet is'*

Types of consequences

- Consequences are **learned** via **three** types of **direct** reinforcement:
  - **Positive reinforcement**
    - Performing a behaviour to experience the positive consequences, e.g., completing homework to gain praise from the teacher
  - **Negative reinforcement**
    - Performing a behaviour to **avoid** unpleasant consequences, e.g., completing homework to prevent being given a detention
  - **Punishment**
    - **Positive punishment** - **adding** something unpleasant to reduce behaviour (e.g., being told off, receiving a detention)

      Negative punishment – **removing** something pleasant to reduce behaviour (e.g., losing privileges, not being allowed to attend a party)
- The consequence of the performed behaviour is known as the **reinforcer,** e.g.
  - praise from the teacher is a **positive reinforcer**
  - a detention is a **positive punishment**

Research which supports operant conditioning

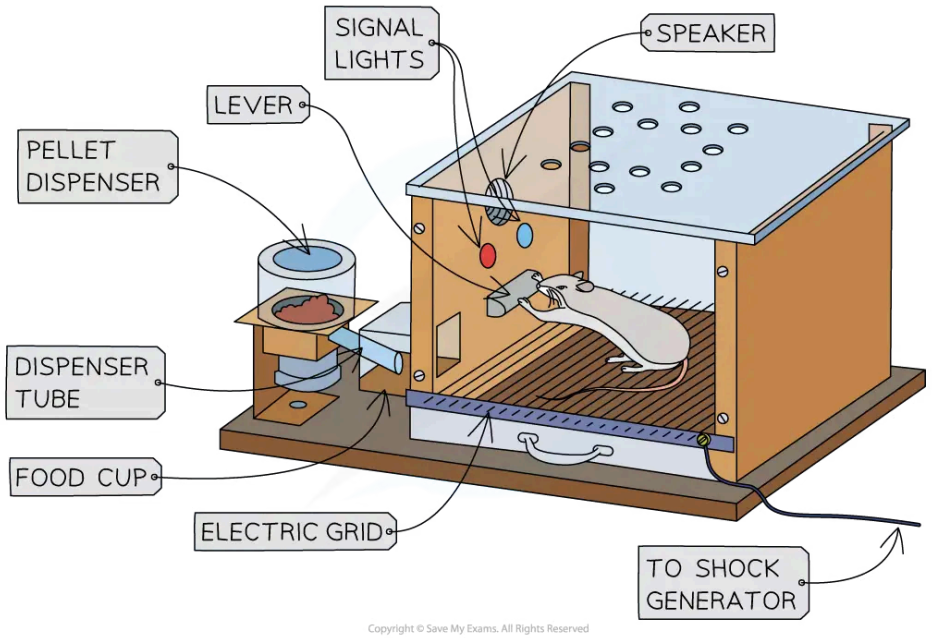
Skinner (1953)

- **B.F. Skinner (1953)** argued that learning is an **active** process in which organisms operate on their environment and are shaped by the consequences of their actions
- He identified three consequence types: **neutral operants**, **reinforcers**, and **punishers**.
  - **Neutral operants** are environmental events that neither increase nor decrease the likelihood of a behaviour
  - **Reinforcers** are consequences that **increase** the likelihood of a behaviour being repeated
    - A **positive reinforcer is a stimulus** added after a behaviour that is pleasant (e.g., food, praise), not the behaviour itself.
    - A **negative reinforcer is a stimulus** whose **removal** after a behaviour is pleasant (e.g., stopping shock, relief), not the behaviour itself.
  - **Punishers** are consequences that **decrease** the likelihood of a behaviour being repeated


Your notes

Skinner box procedures & findings

- Skinner designed the **Skinner Box** to study response–consequence learning in controlled conditions, typically with rats or pigeons
- **Positive reinforcement condition:**
  - A hungry rat exploring the box **accidentally pressed** a lever and received a **food pellet**
  - The addition of food after pressing the lever **increased** lever-pressing; rats rapidly learned to press the lever **immediately** upon being placed in the box
- **Negative reinforcement (escape) condition:**
  - A mild **electric current** was delivered through the grid floor
  - When the rat **pressed the lever**, the current **turned off**, providing relief
  - The removal of the aversive stimulus **reinforced** lever-pressing; rats learned to press quickly to **escape** shock
- **Negative reinforcement (avoidance) variation:**
  - A **light** signalled that shock was about to occur (a discriminative stimulus)
  - Rats learned to **press the lever when the light came on** to **avoid** the impending shock
- These procedures demonstrated that both adding a pleasant stimulus and removing an unpleasant stimulus can **strengthen** behaviour



The 'Skinner box'

Your notes

Evaluation of operant conditioning

Strengths

- OC has good **application** to the **maintenance** of phobias
  - Someone with **social phobia** uses **avoidance** to stay away from any events involving people, socialising, etc.
  - The use of avoidance is an example of negative reinforcement**, i.e.,** taking steps to keep away from large gatherings of people
  - The more the avoidance is **repeated,** the more the phobic person is rewarded with feelings of **relief** and **security**
- Skinner used **standardised procedures** in **controlled conditions,** which means that his research has good **reliability**
  - Reliability is a strength of **experimental research,** as it satisfies the criteria for **falsifiability,** i.e., the theory can be tested **scientifically**

Limitations

- OC cannot explain why some people may repeat behaviours which are **damaging, detrimental or unpleasant**
  - People who **self-harm** may do so for the specific relief it brings them but such behaviours would not be recognised as positive reinforcers by OC
  - People who continue to **smoke** even though they may find the taste and the smell of cigarettes unpleasant defy the assumptions of OC
- Skinner's research is overly **simplistic** (**environmental reductionism**)

- Humans are much more **complex** and **sophisticated** than animals and operate at a higher **cognitive** level
    - People are more able to take control of their behaviour via mechanisms such as **self-efficacy** than the behaviourists give them credit for

Your notes

Link to concepts

Responsibility

- Skinner's research may be viewed as **unethical** using today's standards
    - Placing animals under conditions in which they are continually **harmed** via electric shocks may be deemed as unnecessarily **cruel**
    - Researchers should strive to use the 3 Rs which govern working with animals:
        - **Reduce** (use fewer animals)
        - **Replace** (use alternatives)
        - **Refine** (the procedure to minimise suffering)

Perspective

- OC seeks to explain the effect of operants on behaviour, which should be easy to understand because people repeat pleasant, rewarding behaviours and avoid those which are harmful or unpleasant
- What OC cannot explain are situations in which people are offered the chance to **avoid or escape** a harmful, unpleasant consequence yet they ignore or reject the opportunity to do so
    - E.g., some victims of **domestic abuse** do not leave the **toxic** situation in which they find themselves, even when escape is possible
    - This apparently **contradictory** behaviour may be better explained using the theory of learned helplessness
        - Someone who has suffered **repeated exposure** to abuse believes that they have no power to change their situation, even when the chance to do so presents itself

Your notes

The dual process model

- The DPM is a framework for explaining **thinking and decision-making**
- Decision-making is inseparable from thinking because choices can only be made after considering available options
- First proposed by **Wason & Evans (1975)**, the model highlights that humans use **two systems of thinking**:
  - **System 1 (S1)** is fast, intuitive, automatic thinking
  - **System 2 (S2)** is slow, rational, effortful thinking

System 1 (S1) – intuitive thinking

- Operates **automatically** and requires **little effort or time**
- Relies on **heuristics and biases**, which can lead to errors or inaccuracies
- Not "bad" — it saves **time and cognitive energy**, drawing on **instincts, past experiences and learning**
- Especially useful in situations needing **split-second responses**, e.g.,
  - choosing pizza toppings
  - quickly crossing a road to avoid traffic
  - experienced drivers going into 'automatic mode'

System 2 (S2) – rational thinking

- Operates more **slowly**, requiring **effort and analysis**
- Involves **higher-order information processing** and is uniquely human
- Leads to more **accurate and reliable** decisions
- Not always "best" — it uses significant **cognitive energy**, and humans are often **cognitive misers**, avoiding unnecessary effort, e.g.,
  - buying a house
  - preparing for a job interview
  - a learner driver focusing on each step of driving

Interaction of systems

- Both systems **interact and complement** one another
- At times, **S2 may override S1** if careful, rational thinking is required

Research which supports the dual process model

Alter et al. (2007)

Your notes

Aim:

- To investigate the **dual process model** via the effect of **disfluency** (operationalised using a difficult-to-read font) on S1 and S2 thinking

Participants:

- 40 undergraduate students from Princeton University in the USA, obtained via **self-selecting (volunteer) sampling**

Procedure:

- This was an **independent measures design** in which participants were given identical **cognitive reflection tests (CRT)** to answer
- The CRT comprised questions that were not inherently difficult but which required some cognitive energy to solve, such as:
  - A bat and a ball together cost $1.10. The bat costs $1 more than the ball. How much does each cost separately?'
    - The answer is that the bat costs $1.05 and the ball costs 5 cents but most people are likely to say that the bat costs $1 and the ball costs 10 cents as this is the quickest, easiest answer (even though it is incorrect)
- The participants were **randomly allocated** to one of two conditions:
  - **Fluent condition:** CRT questions in an easy-to-read font (black, 12-point)
  - **Disfluent condition:** CRT questions in a harder-to-read font (grey, italic, 10-point)
- It was **hypothesised** that the disfluent font would force participants to concentrate more, triggering **System 2 thinking** (slower, analytical) instead of relying on **System 1 (fast, intuitive)**
- The **dependent variable** was measured as the number of correct responses per condition

Results:

- Participants in the **disfluent condition** answered **more CRT questions correctly** than those in the fluent condition

Conclusion:

- A disfluent font increases the likelihood of **System 2 processing**, as it requires more cognitive effort than a fluent font
- This supports the **dual process model**, showing that external factors (like text fluency) can influence whether we rely on fast, intuitive thinking or slower, rational thinking

Evaluation of the dual process model

Strengths

- The model provides a compelling explanation of 'thinking fast and slow', which is easily **applicable** to a range of situations, i.e., it has good **validity**
- The model could be used to **improve** decision-making in key environments such as business, education, policy-making, etc.

Limitations

- The model is good at highlighting what may be at the root of thinking and decision-making but it is not so good at explaining how S1 and S2 work
  - This means that it lacks **explanatory power**
- Trying to **operationalise** both S1 and S2 thinking is difficult, which means that research in this field is not entirely **conclusive** as to which system is being used during the set tasks

Link to concepts

Measurement

- Research into the DPM is predominantly lab-based and uses **artificial**, contrived tasks
  - This means that it tends to be low in both mundane realism and ecological validity
- To improve this lack of validity, research on the DPM should take place in real conditions which mirror real experience

Change

- Ever-increasingly **sophisticated** advances in technology may change the way in which humans access and use both S1 and S2 thinking
- Some research has found that playing computer games improves teenagers' performance on computer-based educational tasks using S1 thinking
- However, there are some schools of thought which suggest that heavy use of **social media** can negatively impact **critical thinking skills** (S2)
  - This may be due to factors such as **decreased attention spans**, and the tendency of users to react using **emotion** rather than logic

Your notes

Your notes

Schema theory

- A **schema** is a **mental representation** of something
  - E.g., a schema for **concrete**, tangible things such as 'cat', 'house', 'mother' or for **abstract** ideas/concepts such as 'freedom', 'jealousy', 'love'
- A schema holds all of the information that an individual has **assimilated** over the course of their life so far, obtained via direct personal experience
  - E.g., watching a TV series about school life or via contact with others
  - parents telling you about their experience of school
- There are **frame** schemas which include the details and **characteristics** of an item or person or object
  - E.g., 'cat', 'house', 'mother'
- There are **script** schemas which include the **sequences** and expectations as to what will be involved in an event or experience
  - E.g., going to school involves taking the bus, chatting with friends at break, being in lessons, hearing the bell sound, being set homework, etc.
- A schema can be **adapted** according to experience
  - E.g., if you meet someone who has been home-schooled, then your 'school' schema will **accommodate** this new information (that some people don't actually go to a school but instead learn at home)
- A person's schemas are not right or wrong; they are simply the product of assimilation and thus are **subjective**
  - People's schemas may **overlap** but they will not be identical as each schema is built on **individual experience**

The effect of schema on memory

- When you experience an event either directly or indirectly it is usual for **schematic activation** to guide your understanding/expectation of that event
- While useful for processing information quickly, schemas can also **distort memory** by filling in gaps with what we *expect* rather than what actually happened
  - E.g., you attend a lecture and later recall that the lecturer used a projector. In reality, they only spoke without slides — but because lectures often involve projectors, your schema for "lecture" may have distorted your memory
- The problem with having set and pre-determined schemas is that they can **interfere** with accurate **recall**

- This happens when someone recalls an event not as it truly happened but as a result of **schematic interference**
    - Their schemas 'got in the way' of 100% accurate recall of the event (generally people are unaware of this happening)
- Schemas may lead to **biased** recall
    - E.g., you are in a pub and there is a fight. the police ask you what you witnessed and you say that one man was bleeding but in fact this is not true
        - Your schema for 'fight' added blood at the scene because it fits your schema for 'fight'
- **Cultural schemas** may lead to incorrect and faulty recall of material which does not align with or fit into a person's schema based on their own culture, as the following study demonstrates:


Your notes

Research support for schema theory

Bartlett (1932)

Aim:

- To investigate the effect of cultural schemas on recall of a **culturally unfamiliar** story

Participants:

- 20 male students from the University of Cambridge in the UK

Procedure:

- Bartlett instigated a procedure known as **serial reproduction**
    - One participant read a **Native American** folk story called 'The War of the Ghosts'
    - This participant then reproduced the story in writing
    - This version of the story was then read to a second person
    - The second person then wrote his own version of the story
    - This version was then read to a third person
    - This third person then produced his own version of the story and so on

Results:

- Bartlett found that the resulting stories bore **little similarity** to the original Native American folk tale. The changes made by the participants included:
    - **Omission**
        - Key details were ignored or dropped, especially **unfamiliar or unpleasant** ones, e.g.,
            - contorted face" or "black coming out of a mouth" were omitted
            - the central theme of **ghosts fighting** was often dropped, even though it was the story's title

- Omission reflected how some details **did not fit with participants' schemas** (e.g., adult male views of war)
- **Assimilation and sharpening**
  - Story details were changed to suit the participants' own cultural schemas e.g.,
    - '**canoes**' became '**boats**'
    - 'paddling' became 'rowing'
    - a spirit wound was **re-interpreted** as a flesh wound
  - Participants added words such as 'therefore' and 'because' to make sense of events
- **Levelling**
  - The story became **shorter** and simpler
  - The original text was approximately 350 words but the participants' version was around 180 words

Conclusion:

- Cultural schemas contribute to the **reconstructive** nature of memory
- Memory is an active process in which pre-existing information and expectations may interfere with the accuracy and **reliability** of the memory

Evaluation of schema theory

Strengths

- Bartlett's study was one of the first pieces of research to **highlight** the role of schema in reconstructive memory
  - E.g., two people who witness the same event may give very different accounts of what they have seen
- Bartlett's procedure (serial reproduction) is **replicable,** which means that it could be repeated to check for **reliability**

Limitations

- Bartlett's sample was small and limited to an elite **demographic** of university students who were all male, which makes the findings difficult to **generalise**
- Schemas are not easy to **measure,** as they are subjective and unique to the individual

Link to concepts

Change

- This is very dated research, conducted in the 1930s using a **biased** sample of students from an elite university (which, at the time, accepted very few female students and few students from cultures other than the UK)

Your notes

- University students in the UK are much more aware of wider **multi-cultural issues** and influences today than they were in the 1930s
  - There is awareness and understanding of **indigenous** cultures; ideas such as using a canoe or hunting seals are not alien concepts
  - The lack of relevance to a 21st-century **mindset** means that the results lack temporal validity

Your notes

Perspective

- Schemas feature in several branches of psychology and can explain the ways in which people may process information
  - E.g., **depressed** people are described as having a **negative self-schema** (see this revision note for more information on negative self-schemas and major depressive disorder)

Your notes

Application of social learning theory

- **Social learning theory (SLT)** is based on the idea that humans learn behaviours from others within **social contexts**
- Behaviour is shaped by **role models** whose actions may be imitated if those behaviours are perceived to be **rewarded**

Key principles of SLT

- **Observation**
  - Children learn by observing **role models** (e.g., parents, teachers, older siblings, and celebrities)
  - Role models usually have **status, influence, or qualities** the child admires (e.g., being skilled at football)
- **Imitation**
  - Behaviours seen in role models are imitated, especially if these behaviours are **rewarding** or admirable
- **Social contexts**
  - Learning occurs through the **environment** (e.g., home, school, peer groups)
- **Vicarious reinforcement**
  - **Indirect reinforcement**: observing someone else being rewarded for a behaviour increases the likelihood of imitation
    - E.g., seeing a sibling praised for tidying their room motivates another child to do the same, as they wish to be rewarded in the same way

Mediational processes (ARRM)

- SLT highlights the importance of **cognitive processes** between stimulus and response
- **ARRM** explains the stages:
  - **Attention** – noticing the behaviour
  - **Retention** – remembering how the behaviour was carried out
  - **Reproduction** – imitating the behaviour when able
  - **Motivation** – the desire to perform the behaviour (often due to expected reward)
- **Attention and retention** are involved in the learning of behaviour
- **Reproduction and motivation** are involved in the performance of behaviour
- Learning and performance **do not need to occur at the same time**

- E.g., aggression observed at school might not be reproduced until later at home
- The following study demonstrates that by participating in **language** (talking, listening, singing, reading, writing) with people from their own culture (via the mechanisms of SLT), children **thrive** across all aspects of their development


Your notes

Research support for application of social learning theory

Ochs (1982)

Aim:

- To investigate the role of SLT in **language acquisition**

Participants:

- 23 children under the age of 6 from the island of Samoa (a Polynesian country located about halfway between Hawaii and New Zealand)

Procedure:

- A **longitudinal case study** conducted over a period of 10 months
- The children were **observed** every five weeks across the 10-month period

Results:

- Language is led by a caregiver, usually an older **sibling**
- Language learning is dominated by **cultural forces** such as:
  - **decentering**: this involves shifting the centre of attention away from the self when communicating/delivering a message, i.e., considering the other person
  - **lack of expansion by caregivers**: expansion involves taking the words a child says and repeating them, while adding more to what they have said, e.g., 'You see a bird; yes, it's a blue and yellow bird, isn't it?'
  - **elicited imitation**: this is when a child listens to and then **repeats** a word/phrase/sentence
- Much of the children's learning happens via observation so that **enculturation** and language occur **synchronously**
- The children's language acquisition is **dependent** on and highly **influenced** by their family's and their community's culture
- Samoan parents do not engage in a lot of **communication** with their children
  - Children are assumed to lack the tools necessary to communicate with adults
  - Children are assumed to have little **control** over themselves and their actions
  - The first utterances that Samoan babies make are not viewed as signs that language is developing but simply as arbitrary sounds

Conclusion:

- SLT plays a key role in language acquisition in Samoan families

- There are **key markers** that determine how language is learned by Samoan children

Your notes

Evaluation of social learning theory

Strengths

- SLT provides a more 'rounded' explanation of how the environment shapes behaviour than that offered by behaviourism
  - This means that SLT is **less reductionist** than behaviourism
  - This means that SLT is also **less deterministic** than behaviourism, as mediational processes imply that the individual has some **choice** over their behaviour
- SLT has **good application** to learning within families and cultures (see the above study)
  - This means that it could be used to inform **parenting classes** and to understand how other cultures may differ in terms of language development

Limitations

- SLT **cannot** account for behaviours which are observed frequently and are **not** imitated
  - E.g., a child may use a strong local **accent** but have parents who use a neutral accent with no regional **inflections**
- Research into SLT largely consists of **lab experiments**
  - This is a limitation, as SLT is an explanation of behaviour within **social contexts**
  - The **controlled conditions** of a lab experiment cannot hope to replicate real life; thus, such research lacks **ecological validity**

Link to concepts

Change

- Ochs' study used a longitudinal design, which means that she was able to track progress and change over time rather than obtaining a brief sample of behaviour as happens with snapshot studies
  - An **advantage** of longitudinal design is that the researcher can become close to the participants, which helps them to gain a better **insight and understanding** of their culture and community
  - A **disadvantage** is that they may become *too* close to the participants and thus lose their **objectivity**

Measurement

- Naturalistic observation is a good way of ensuring ecological validity, as no **artificial** tasks or materials are brought to the research process
- Some participants may experience the observer effect but with longitudinal design, what tends to happen is that the participants get used to the researcher being there so they tend to relax more than they would in a one-off snapshot study