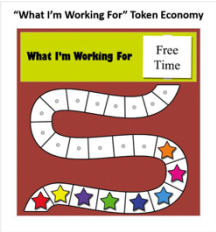
Token Economies

- DEFN → artificial systems of reward and reinforcement where symbolic markers are used to reward behaviour
- Markers can be exchange e.g. for goods/privileges
- Accumulation of markers leads to secondary reinforcement so you can't get 'full' and the changes to behaviour are likely to continue
- Markers rarely withdrawn
- Slow accumulation of markers means secondary goals not attained
- Criticism → when used in places e.g. hospitals it's hard to maintain behaviour once they've left



Systematic Desensitisation

Activity	Fear level (0-100)
Stroking a dog	90
Going to a park with a dog walker	80
Watching a real-life dog show	50
Watching a cartoon dog show	40
Looking at a picture of a dog	30

- DEFN → the application of classical conditioning to fears and phobias in humans
- Replaces fears with more desirable and appropriate responses to situations
- Psychologist tries to find extent, source of problem and how much it interferes with life
- Process involves creating list of most to least fear-provoking situation
- Graded exposure → gradually introducing least to most fearful situation during therapy
- Person first taught to relax generally, then exposed to least frightening situation, and practices relaxation techniques until comfortable enough to proceed to next situation

Cognitive Behaviour Therapy (CBT)

- Technique based on premise that thoughts influence feelings and behaviours and that subsequent behaviours and emotions influence thoughts
- Therapist helps client identify unhelpful thoughts/feelings/emotions
- Unhelpful because they cause distress and distraction
- Behaviour therapy → therapist helps change behaviour through behavioural change techniques e.g. relaxation
- Cognitive therapy → replaces dysfunctional thoughts with ones that can be managed
- Used to treat depressive disorders, anxiety, PTSD etc.
- Has also shown to be cost-effective (benefits outweigh costs)
- CBT used by psychologists, psychiatrists and counsellors

Cognitive Behavioral Therapy

Ways CBT treats depression

1. Helps identify and change negative thinking associated with depressed feelings
2. Helps to focus on the positive things
3. Helps to manage your problems

COGNITION

Classical Conditioning

-DEFINITION = the process of learning whereby an association is formed between two stimuli

UCS → unconditioned stimulus: stimulus that unconditionally, naturally and automatically triggers a response

UCR → unconditioned response: unlearned response that occurs naturally in response to the UCS

NS → neutral stimulus: stimulus that does not usually produce a response

CS → conditioned stimulus: the previously neutral stimulus that, after becoming associated with the unconditioned stimulus, eventually comes to trigger a conditioned response

CR → conditioned response: the learned response to the previously neutral stimulus

-During the acquisition stage, repeated pairings form an association between the UCS and the NS

-The UCS and NS have to occur near to each other to become associated (contiguous)

-After conditioning, NS is now called the CS, and when presented alone it will elicit the CR

-The UCR needs to be involuntary

-The UCS should be a stimulus that evokes a response with no prior learning

Elements in Classical Conditioning

1. Stimulus discrimination → the ability to perceive the difference between two or more stimuli, even if they are similar
2. Stimulus generalisation. → when a stimulus resembling the CS produces the same or similar CR
3. Extinction → when the UCS (reinforcer) is removed so that the association is weakened/broken
4. Spontaneous recovery → despite prior weakening of the association due to extinction, the CR could recur when the CS is presented

Watson and 'Little Albert'

-Albert was pretested to see if he could demonstrate fear (UCR)

-Then he was placed in a room with a white rat and showed no fear

-The rat was then considered the NS

-During conditioning, while Albert was playing with the rat, the experimenters made a loud noise (UCS)

-This produced the UCR, fear, in Albert who was startled and cried

-The loud noise was paired with any attempt Albert made to play with the rat, until the rat became the CS and it being anywhere near him caused fear (CR)

-It was also found that Albert generalised this fear to other furry white objects (e.g. dogs, coats)

-Albert's mother left Watson's clinic before he could extinguish the CR

Ethical Issues in Conditioning Human Behaviour

-Albert's mother was not fully informed, so she did not give proper consent

-His mother also probably did not voluntarily participate, as she would not be able to refuse her employer's request

-Albert's attempts to withdraw from the stimuli were prevented by Watson's assistant

-Experiments should not distress or harm participants in anyway, which was not followed in this experiment

-Albert was also never systematically desensitised to the CR

Pavlov's Experiments

-Dogs were individually restrained in a harness in an isolated soundproof room

-This apparatus allowed meat powder to be positioned in the dogs' mouths or nearby without human intervention

-A tube was surgically inserted in the dogs' cheeks to measure their saliva levels

-Prior to conditioning, the dogs were presented with an NS, the sound of a bell, which elicited no response

-During conditioning, the bell was sounded immediately before the dog received meat powder (UCS) which naturally led to salivation (UCR)

-After several trials in which the bell and food were associated, conditioning was complete

-The bell then became the CS, which led to the CR, salivation

Feature	Classical Conditioning	Operant Conditioning
Process of Acquisition	The association of two stimuli (the CS and UCS) provides the basis of learning	The association is with an operant response to a stimulus and the consequence that follows
Extinction	Takes place over a period when the UCS is withdrawn/not present and the CS is repeatedly presented alone	Occurs over time when reinforcement is no longer given
Stimulus Generalisation	✓	✓
Stimulus Discrimination	✓	✓
Spontaneous Recovery	✓	✓
Role of the Learner	Learner is a passive participant – does not have to do anything for stimuli to be presented, does not have to make an effort to respond	Learner is an active participant – has control over learning process as they have to operate on the environment to receive reinforcement/punishment
Timing of Stimulus and Response	-response depends on presentation of UCS -timing of stimuli produces association that conditions learner to anticipate UCS even if not presented -timing of two stimuli needs to be very close and CS must come before UCS	-presentation of reinforcer/punisher depends on response occurring -association conditioned is between stimulus and response -there can be considerable time difference between response and consequence
Nature of Response (reflexive/voluntary)	Involuntary – automatic reaction often involving autonomic nervous system	Voluntary – initiated by the organism, usually involving central nervous system

Observational Learning

-DEFN → occurs by watching others, noting the positive and negative consequences of their actions, and/or then initiating these actions

Procedures in observational learning (Bandura)

-Attention → to learn something, it must be taken in, which requires individual to pay attention to model's behaviour and recognise its features

-More likely to attend to models who are liked, known and similar to observer or have higher status

-Retention → observer must remember model's behaviour

-Reproduction → observer must attempt to reproduce/copy what has been observed to demonstrate learning occurred

-Motivation & Reinforcement → learner must be motivated to perform behaviour to receive reinforcement

-Reinforcer should have high incentive value/act as reward or unlikely behaviour will be carried out

Factors influencing imitation of behaviour

-Amount of attention observer pays to model

-Characteristics of model (e.g. attractiveness, trustworthiness)

-Observer's admiration for model (status/power)

-Observer's ability for retention

-Capabilities of model

-Observer's ability to copy model

-Motivation observer has to repeat task

-Consequence model incurred as result of their behaviour (rewarded/punished)

Bandura's research

-Formulated social learning theory after performing experiments with kindergarten students (equal m/f)

-First experiment – two groups observed adult playing with Bo-Bo doll

-One group adult aggressive (punch/kick/yell) to doll

-Second group adult non-aggressive

-Third (control) group did not observe adult play

-Children individually placed in room with one-way mirror

-Room had toys incl. Bo-Bo doll

-Researchers observed whether children modelled behaviour on model they had seen

Findings

-Children who observed aggressive model behaved more aggressive than other groups

-Boys acted more aggressive than girls – especially when model male

-Girls who observed aggressive model – more physically aggressive if model male, verbal if model female

-Specific violent acts imitated, kids also generalised violence to other toys

-Kids who observed non-aggressive model showed minimal aggression, but not always less than control group

-Second experiment – seeing video of aggressive behaviour inspired some imitation, but less than seeing behaviour in person

-Third experiment – 3 videos of adults abusing Bo-Bo doll shown to groups of kids

-Videos differed in consequences given to adult (reward/punished/no consequence)

-Kids who saw adult rewarded/no consequence more likely to imitate aggressive behaviour

-Kids who saw adult punished showed significantly less aggression

-Children then offered rewards for imitating aggressive behaviour tended to behave aggressively, regardless of consequence observed

-Boys tended show more aggression thang girls, but when reward offered, girls just as aggressive as boys

-Bandura concluded all kindergarten children learned aggressive model's behaviour, regardless of consequence observed

-Made cognitive representations of what they learned about behaving aggressively, that could be elicited when reward offered

-They acquired a learned response, stored until incentive offered

Operant Conditioning

- Defn → type of learning where consequences that follow a response determine whether response likely to be repeated

-Reinforcement → wanting to encourage a desirable behaviour

- Positive reinforcement → adding something nice (e.g. money, food)

-Occurs when a response is followed by a +ve event that increases likelihood of response happening again

-+ve reinforcer should have high incentive value or will be ineffective

- Negative reinforcement → taking away something that you don't like

-Occurs when response followed by an end to discomfort or removal of -ve event

-Increases likelihood of desired behaviour being strengthened over time

-Reinforcer should be administered ASAP after desirable behaviour demonstrates to establish association between desired response and reinforcer

-Punishment → wanting to discourage an undesirable behaviour

- Positive → adding something unpleasant (e.g. adding chores)
- Negative → taking something good away (e.g. phone)

-To be effective, should be presented immediately following undesirable behaviour

-This will form clear link between the behaviour and its consequence

Elements of Operant Conditioning

-Stimulus discrimination → occurs when organism makes correct response to stimuli for which reinforcement obtained, but not similar stimuli

-Stimulus generalisation → occurs when stimuli similar to those that obtain reinforcement elicit same response

-Extinction → The CR is extinguished when reinforcement ceases to be given after it occurs

-Spontaneous recovery → when a response reappears after extinction has occurred

Thorndike's Puzzle box

-Edward Thorndike created a puzzle box which he would put cats in, where by the only escape was to push levers attached to the box

-Once they escaped, they would receive fish.

-He theorised cats learnt to escape through trial and error

-He timed how long it took the cats to escape

-As the trials were repeated, the cats learnt that pushing the lever had favourable consequences and so grew quicker at the response.

-'Law of Effect' → where any behaviour that is followed by pleasant consequences is likely to be repeated, and any behaviour followed by unpleasant consequences is likely to be stopped

Atkinson-Shiffrin's Multi Store Model of Memory

DEFN → Visualise memory a system consisting of multiple memory stores, through which stream of data flows for processing

SENSORY MEMORY → **Receives Info** → SHORT TERM MEMORY → **Receives Info** → LONG TERM MEMORY

LONG TERM MEMORY → **Retrieves Info** → SHORT TERM MEMORY

DEFINITION: sensory info in the form of sight, sound etc., info held just long enough to encode it into usable form and transfer it to STM, if we ignore info that enters SM then it fades rapidly, and we forget it

CAPACITY: unlimited

DURATION: limited – a few seconds

- ECHOIC
  - -Registers auditory info
  - -lasts 3-4 seconds
  - -sounds remain as an echo
- ICONIC
  - -registers shape, size and colour
  - -stores info as an icon
  - -last for ½ a second
  - -visual info changes constantly, so must be dealt with quickly

- No conscious control over sensory memory
- Not overwhelmed by incoming info

DEFINITION: Holds all thoughts, info and experiences you are aware of at any time

CAPACITY: limited – 7 items (+ or – 2)

DURATION: limited – 18-20 seconds

- Can hold more items through chunking (grouping bits of info together) or rehearsal
- If info not attended to it will drop out
- Very sensitive to interruption

DEFINITION: once info in STM processed it is transferred to LTM, when required at later date we retrieve info by locating it in LTM and returning it to conscious awareness

CAPACITY: unlimited

DURATION: relatively-permanent to permanent

THEORIES ON WHY WE FORGET

Suggests we forget as we cannot access correct retrieval cues needed to activate specific memory

1.Decay Theory → we forget because chemical memory trace of info created when the memory was formed fades away over time due to lack of use
2.Interference Theory → specific memories blocked from entering consciousness by other memories
3.Moivated Forgetting. → we don't want to remember painful/traumatic memories, so we consciously/unconsciously block their retrieval

STORING LTM

- IMPLICIT
  - DEFINITION: non-conscious memory of skills and actions, memory of learnt actions and skills stored in LTM and retrieved unconsciously/unintentionally, enables us to carry out learnt tasks w/o conscious effort
- EXPLICIT
  - DEFINITION: conscious memory of facts and personally significant events, they are consciously recalled and declared, you also recall the context the events occurred (Hall)
    - SEMANTIC
      - DEFINITION: memory of meaning, made of impersonal facts/rules, holds factual info used to make meaning to understand world
    - EPISODIC
      - DEFINITION: autobiographical memory, stores personally significant events, you feel emotions when think of these memories and their context

Baddeley & Hitch Working Memory Model

-Multi-component model
-Defn → describes structure & function of working memory in 3 components:
*Phonological loop (PL)
*Visuo-spatial sketchpad (VSSP)
*central executive (CE)
-They are separate
-Function independently
-Can interact
-PL and VSSP seen as subsystems of working memory
-CE is "attention controller"
-Called working memory because there is emphasis on 'working' to set it apart from other STM models
-Consists of one subsystem for verbal info (PL), other for visual/spatial info (VSSP), and CE that manages activities in subsystems/controls whole system
-Visualising house in head = visual/spatial info, counting doors = verbal info, starting at logical point = CE managing

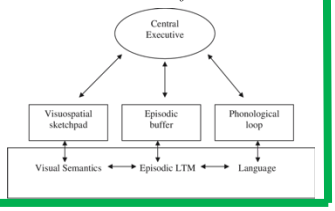
Phonological loop
-Defn → active when you read, listen, speak or repeat words to remember them
-Aka verbal working memory
-Capacity: limited
-Duration: brief/temporary
- Verbal info stored in sound-based or phonological form
-You hold onto this info by using a sub-vocal maintenance rehearsal (repeating info)
-Use of internal unspoken speech during rehearsal is crucial feature of phonological loop
-w/o rehearsal info lasts only 2 seconds
-if internal rehearsal disrupted → storage cannot occur
-experiment on PL (Baddeley) → participants had to remember a list of words between list one and two
-list 1: more words but shorter
-list 2: less words but longer
-most found list 1 easier because as length of words increases, the number of words declines = word-length effect
-shorter words easier to rehears in P loop than longer words

Visuo-spatial sketchpad
-aka visual working memory
-capacity: limited
-duration: temporary – brief
-visual info → anything you can see/visualise
-spatial info → visual location of objects in space
-VSSP is mental workspace for storing /manipulating visual and spatial info
-Capacities of visual and spatial are independent
-Reaching limits of one doesn't affect capacity of other

Central executive
-Most important and complex
-Defn → controls attention, integrates info from PL and VSSP, as well as info received from LTM and coordinates flow of info between working memory and LTM
-Manipulation of info is working component of working memory
-Filters useful and no -useful info
-Selects, deletes, orders info
-Directs info to LTM

Episodic buffer
-According to Baddeley (2009) there was problem with working memory as it didn't explain how working memory links with LTTM
-So added EB
-Defn → sub-system of working memory that enables different components of working memory to interacts with LTM
-Capacity: limited – 4b chunks
-Duration: temporary
-Can hold info in any form
-Connects the 3 sub-systems with the LTM
-Controlled by central executive
-Linked to LTM, but separate
-Used episodic because it combines bits of info from working memory and LTM into episodes
-Buffer used because it provides temporary workspace where info processed, edited, reordered
-Still studying episodic buffer

Interaction of 4 components
-Going too party, trying to find quickest and easiest, not on freeway
1.Use PL to sub-vocally rehearse the different direction to keep info active in loop
2.Use VSSP to visualise possible route
3.CE would direct episodic buffer to combine auditory info from the PL and the visual and spatial info in VSSP
4.Info from LTM about traffic etc. on routes would be added
5.Now create mental image of best route, CE will use this info to plan journey
6.When required episodic buffer would be used as mental workbench to make adjustments to route



RETRIEVAL METHODS

1.Recall → supply/reproduce info stored in LTM using no cues for assistance
free recall = reproduce info from memory w/o cues
serial recall = reproduce info from memory in order it was originally presented
cued recall = if cues are provided to access memory

2.Recognition → identifying correct answer from list of possible alternatives

3.Relearning → learning something that has been previously learnt

FACTORS AFFECTING REMEMBERING ABILITY

1.Retrieval Cues → most effective way to remember is to provide retrieval cues that were present when memory formed
a) context-dependant cues: physical surroundings (context) provide cues that aid retrieval
b) state dependant cues: the physical and psychological state that exists during learning can be strong cue for later memory retrieval

2.Rehearsal → consciously manipulating info to improve its duration in STM
a) maintenance rehearsal: repeating info number of times so it can be held in STM for longer
b) elaborate rehearsal: involves adding more detail to a memory during encoding when you link bits of info in a meaningful way

3.Serial Position Effect → a pattern of recall of a list of items where recall better for items at beginning (primary effect) or end (recency effect) of a list than in the middle

4. Chunking → If we group separate items to form larger single item, can effectively increase STM capacity

Godden and Baddely
-Context cues play major role in retrieval of info from LTM
-Memory is disrupted when testing occurs in presence of stimuli that weren't present during initial learning
-They had divers learn list of words on land/water, and attempt to recall them in same or different context

Murdock
-Asked participants to learn list of 10-40 words and free recall them
-Each word shown for 1-2 seconds
-Found they recalled words at beginning/end more than middle