

Learning Revision Notes

Learning

Is a relatively permanent change in behavior which is due to experience

Classical Conditioning

A form of learning in which an automatic response becomes associated with a previously unrelated stimulus

Ivan Pavlov (1990s)

Studied dogs

The dogs began salivating every time they heard the researchers' footsteps. Salivation is a REFLEX response; it occurs automatically when an animal smells food but Pavlov found that the dogs associated the sound of footsteps to the arrival of food because the two stimuli had occurred together so many times.

He figured that he could get his dog to respond to other things too. So, he conducted an experiment. Everytime the food arrived, Pavlov ringed the bell. Eventually he took away the food and only rang the bell. He found that the dog still salivated.

Unconditioned stimulus: food

Unconditioned response/ natural reflex action: salivation

Conditioned stimulus: Bell

Conditioned response: Salivation

John Watson and Rosalind Raynor (1920)

'Little Albert': created ethical concerns. They intended on extinguishing his fear but the boy was taken away before they could.

Unconditioned stimulus: loud noise when metal bar struck

Unconditioned response/ natural reflex action: fear

Conditioned stimulus: white rat

Conditioned response: fear

Little Albert was not initially scared of the white rat but when the conditioning began, every time he had the white rat, a metal bar was struck close to him and that caused a fear response. Therefore, whenever he got the white rat, he was scared to play with it. A new stimulus-response link had formed. This experiment raised ethical concerns because the behaviour was going to be unlearnt but Albert was taken away before.

Extinction:

This is when the conditioned stimulus no longer creates the conditioned response. In other words, the conditioning has been removed and the actions have been unlearned.

For example, in 'Little Albert', the boy would be given the rat without the loud noise so eventually he won't shows signs of fear and his fear response has been extinguished.

Spontaneous Recovery:

Even though a behavior has become extinct, it might not have been forgotten. Pavlov found that after a delay, when the dog was presented with the bell, the salivation came back even though the conditioned response had been apparently extinguished.

Generalization:

Generalization is when the response is also triggered by a stimulus similar to the original one. Watson and Raynor found that little Albert was also scared of rabbits and of cotton wools.

Discrimination:

Even though the generalization has taken place, it can be discriminated if the unconditioned stimulus is only presented with the conditioned stimulus. So in Pavlov's experiment, the dog only gets food when the original bell is sounded. Pavlov found that by doing this, the dogs only salivated to the original bell.

Operant Conditioning

learning which occurs as a result of reward or punishment.

The Law of effect:

Behavior which leads to pleasant consequences will become 'stamped in' and behavior leading to undesirable consequences will become 'stamped out'.

Edward Thorndike (1898)

Studied cats

Found out that a hungry cat could open a latch in order to escape from a box and reach some fish outside. At first, the cat hit the latch accidentally while running around the box to get out but every time it was returned to the box, it needed lesser time to run back out. This supports the Law of Effect.

Kohler (insight learning)

Put chimpanzees in cages and they had sticks to get the fruit outside.

These principles were tested by B.F. Skinner (1938)

Skinner devised a Skinner box with a mechanism like a lever or a key which will deliver a food pellet to the animal inside. When a rat or pigeon was put inside, Skinner noticed that after having pressed the lever accidentally and received the food pellet, the animal needed less and less time before it pressed the lever again because receiving a food pellet was a desirable consequence. He varied his research and stated that behavior was shaped and maintained by its consequences. We judge whether a consequence is pleasant or unpleasant by whether the behavior is strengthened or weakened. For fastest learning, the consequences should immediately follow the behavior and be applied every time the behavior occurs.

Reinforcement:

Consequences that are meant to strengthen behavior.

Positive Reinforcement: strengthens behavior by providing a consequence which the individual finds rewarding.

Negative Reinforcement: strengthens behavior by removing or stopping an unpleasant experience. For example, rats were given electric shocks through the floor of their cage and a lever in the cage switched off the shocks.

Primary Reinforcement: Anything which satisfies basic instincts

Secondary Reinforcement: Anything which strengthens behavior but doesn't satisfy basic instincts

Partial reinforcement: The behavior isn't reinforced every time but every few times. This will maintain the behavior for longer because it has been conditioned before using partial reinforcement.

Gambling - It is addictive because people know that at some point there is going to be another win.

Fixed ratio reinforcement: After a certain number of times the action is carried out, there is a reward given.

Variable ratio reinforcement: After a random number of times the action is carried out, there is a reward given.

Fixed Interval reinforcement: After a certain period of time, there is a reward given.

Variable Interval reinforcement: There is no regular time period after which you get a reward; you get one at any random time.

Successive Approximations: Breaking something down into manageable chunks.

Vicarious reinforcement: when children are rewarded for their behavior

Generalization & Discrimination:

The learner will generalize by performing reinforced behavior in similar circumstances. A child who is praised when she is friendly towards visitors will generalize this behavior to others and if you don't want her to be friendly to complete strangers then ensure that she only receives praise when she is friendly to people the parents know. This is discriminating.

Behavior shaping:

Reinforcement can be used to shape completely new behavior by reinforcing a narrower and narrower range of behaviors. Skinner taught pigeons how to play ping pong. He gave them reinforcements every time they were close to what he wanted such as when it moved towards the ball and then only when it touched the ball and so on.

Punishment:

Consequences that weaken behavior.

Before deciding whether something is a punishment, it is important at looking at what the consequences mean to the individual. For example, a parent shouting at a child for being rude. If the child has become less rude then the shouting has acted as a punishment. But, if the child continues to be rude, then the shouting would be a reward and is pleasant because the child wanted parental attention. Punishment can also be in the form of withdrawal of something desirable.

Skinner said that punishment has a limited effect in weakening behavior because it only weakens a particular response. A 2 year old might stop hitting her newborn baby brother when punished but then starts to hit the dog. Punishment doesn't show what the undesirable behavior should be replaced with.

	Classical	Operant
Differences	Reinforcement Procedures	
	When the UCS is presented with the CS; reinforcement occurs.	Reinforcement occurs as the consequence of the animal's response to a stimulus.
	Origin of behaviour	
	Behaviour starts off as a reflex action.	Behaviour starts by random activity of the organism.
Similarities	Reinforcements are the strengthening of an association between a stimulus and a response in both types of conditioning.	

The use of classical conditioning - Behavior Therapy

1. Systematic Desensitization

- Write a list of increasing situations of the phobia
- Teach the phobic relaxation techniques
- Once the phobic is completely relaxed, make them experience the first stage
- Then move onto the next level once comfortable with the previous one
- Keep going until the last stage with the phobic relaxed. If the phobic becomes fearful, the treatment returns to the previous stage.

Frog phobia

A woman had a phobia of frogs because she had formed some sort of association of it with something else. If on the way to work she saw a frog, she would panic but after six hours of treatment she was no longer scared. The treatment included the phobic looking at pictures of frogs from the library. The aim of this method is that you try and make the phobic less scared and more relaxed because you cannot feel both at the same time. The phobic looked at the pictures everyday and put them to her face. In the last session, a frog was brought in and she held it without fear.

Evaluation of this method:

- Phobias in children have been extinguished using gradual exposure without relaxation techniques.
- Successful in treating specific phobias (animal or object) but not so much for general phobias (open space or height)
- More suitable for use with children than the other techniques
- Few ethical concerns as the patient plays an active part in the treatment
- The treatment may take a really long time
- The phobic may withdraw if she feels she is not progressing.

2. Implosion/Flooding

- The phobic is exposed to the most fearful situation of the phobia
- The situation is maintained and the phobic cannot escape.
- Eventually, the response is exhausted because the body cannot maintain that level of physiological arousal. So the phobic is in the feared situation but doesn't show the fear response as it has become extinguished.

Wolpe (Fear of cars)

He took a woman with a fear of cars and put her in a car, driving around the city until she stops screaming.

Evaluation of this method:

- Most successful method
- Quicker and cheaper
- Raises ethical concerns
- The therapist has responsibility for the phobic's well-being during the treatment.

3. Aversion Therapy

Associating your phobia to something unpleasant

- The alcoholic is given a drug which causes nausea
- The patient is then given a drink of alcohol and the drug so the 2 are paired together
- The pairing occurs several times until the alcohol (CS) becomes associated with the nausea (CR) so the patient no longer drinks.

- Every time a person who is sexually attracted to children sees a picture of a child, he gets an electric shock
- He no longer thinks of the child in that way.

Evaluation of this method:

- Uneven success
- More effective for some people than for others
- If the pairing doesn't continue to occur, the association will become extinguished. The only way is if the patient continues to stay away from what they are trying to give up.

- Raises ethical issues

The use of operant conditioning - Behavior Modification

1. Behavior Shaping

Used to improve the communication skills of autistic children.

- The therapist first identifies the activity the child enjoys doing
- Every time the child looks at the therapist she gives him the toy
- Eventually the therapist waits until the child reaches for the toy
- Then the therapist starts saying please every time he reaches for the toy
- The toy is then withheld until the child himself makes a sound to get it.
- This continues, reinforcing a behavior and then withholding reinforcement until a more specific behavior has become established.
- If the technique is successful, the child might start speaking spontaneously

Evaluation of this method:

- Effective technique but reinforcement needs to be maintained in order for the child to continue the behavior.

2. Token Economy

Desired behavior is awarded with token which can then be exchanged for something else. The token economy is used mostly in institutional settings or prisons or psychiatric hospitals. For example, in ADHD children (Attention Deficit Hyperactivity Disorder). These children cannot focus at all and are easily distracted.

- Teachers look after a group of students and observe them.
- Everytime you get something right, you get a reward
- After a number of rewards, you can move up a group
- Their parents are also educated and their lifestyle changes quite a lot

Evaluation of this method:

- Effective method
- But, once patients leave this structured environment, they cannot adapt to or live in the real world; they are dependent on the system.

Social Learning

Learning that occurs through the process of observation, imitation and reinforcement.

Observation:

We learn by observing others and those people are called role models because they are modeling behavior which is imitated.

Bandura proposed that children are more likely to imitate models who are important to them because they are:

- Similar (same sex or age)
- Powerful (such as parent, teacher or pop star)

Caring (such as a parent, relative or teacher)
 Rewarded for their behavior (vicarious reinforcement)

Imitation:

A child imitates the behavior of the model who has been observed. So a little girl observes the behavior of her mother and then later the child makes her teddy have an accident and consoles it the way her mother did to her.

Albert Bandura (1961) - Imitation									
Aim	To see whether a child imitated a model's behavior or not and under which situation did it imitate most.								
Method	- Got an adult to model aggressive behavior towards a large inflatable doll (called a Bobo doll) - Children of 3 to 5 watched this and later got to play with the doll.								
Results	<table border="1"> <thead> <tr> <th>Consequences for model</th> <th>Level of aggression from children</th> </tr> </thead> <tbody> <tr> <td>Punished after being aggressive</td> <td>Lowest Level</td> </tr> <tr> <td>No consequences after being aggressive</td> <td>Higher Level</td> </tr> <tr> <td>Model reinforced after being aggressive</td> <td>Highest Level</td> </tr> </tbody> </table>	Consequences for model	Level of aggression from children	Punished after being aggressive	Lowest Level	No consequences after being aggressive	Higher Level	Model reinforced after being aggressive	Highest Level
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Conclusion	Children exposed to aggressive models may imitate the aggressive behavior and are more likely to do so if the model is the same sex or if their aggression is reinforced. Children are less likely to imitate aggression if the model is punished. Although some children didn't imitate behavior they had observed it. he found that when children were offered a small reward for reproducing behavior they had seen, almost all could do so even though they hadn't produced it spontaneously when they had the chance.								
Evaluation	1. They are children and it raised ethical concerns because they were being made to watch aggression. This might influence them when they grow older.								

Reinforcement:

If a child imitates a model's behavior and the consequences are rewarding, the child is likely to continue performing the behavior. But, we don't imitate everything we observe. This may be because:

- The models aren't important to us
- The child knows that behavior isn't appropriate in that setting.
- The child has seen that the model's behavior has had unpleasant consequences

Through reinforcement, a child will internalize a model's behavior so that it would be able to act as the model would act in a situation it has never seen the model in.

Tollman (cognitive mapping)

There was a rat in a maze and had to reach the centre to get cheese. It had a mental picture of the maze to get it to it easier.

Parke (Imitating)

Got two groups of residential boys to watch a video. One group watched violent videos that week and one group watched non-violent videos. The group that watched violent videos was more violent.

Houston

Charlton

The	Tollman
Psychologist	Pavlov
Said	Skinner
What's	Watson
The	Thorndike
Point	Pavlov
Because	Bandura
He	Houston
Couldn't	Charlton
Keep	Kohler
Working	Wolpe