LEARNING

Learning

Learning is a relatively permanent change in behavior or knowledge that occurs as a result of experience or practice.

- RELATIVELY PERMANENT CHANGE
- CHANGE IN BEHAVIOR OR KNOWLEDGE
- DUE TO EXPERIENCE OR PRACTICE

Relatively Permanent Change

- Learning creates a lasting effect, not just a temporary one.

- If someone forgets something immediately, or acts differently just once, it may not be considered learning.

- However, learning doesn't mean permanent forever it just lasts longer than a momentary reaction.

Example: You ride a bicycle once and fall. After a few tries and practice, you can ride it smoothly. Even if you don't ride a bike for years, you'll likely remember how — that's learning.

Change in Behavior or Knowledge

- Learning can be behavioral (something we can observe) or mental (something we know or think).

- You might learn how to do something (like swimming), or learn facts (like the capital of France is Paris).

- Example (Behavior): A child learns to tie shoelaces after being shown multiple times.

- Example (Knowledge): A student learns that water boils at 100°C from science class.

Due to Experience or Practice

1. Learning doesn't just happen automatically

2. It comes from interaction with the world through experiences, practice, studying, observing, or even mistakes.

3. Example: You touch a hot stove (experience) and burn your hand. You learn not to touch it again that's learning through experience.

Anderson’s Definition

Learning is any process through which experience at one time can alter an individual's behavior at a future time (Anderson, 1990)

Any experience you have today can change how you act later that’s learning.

Example: You’re bitten by a dog once. Later, you feel scared around dogs. That fear is a learned behavior.

Perspectives of Learning

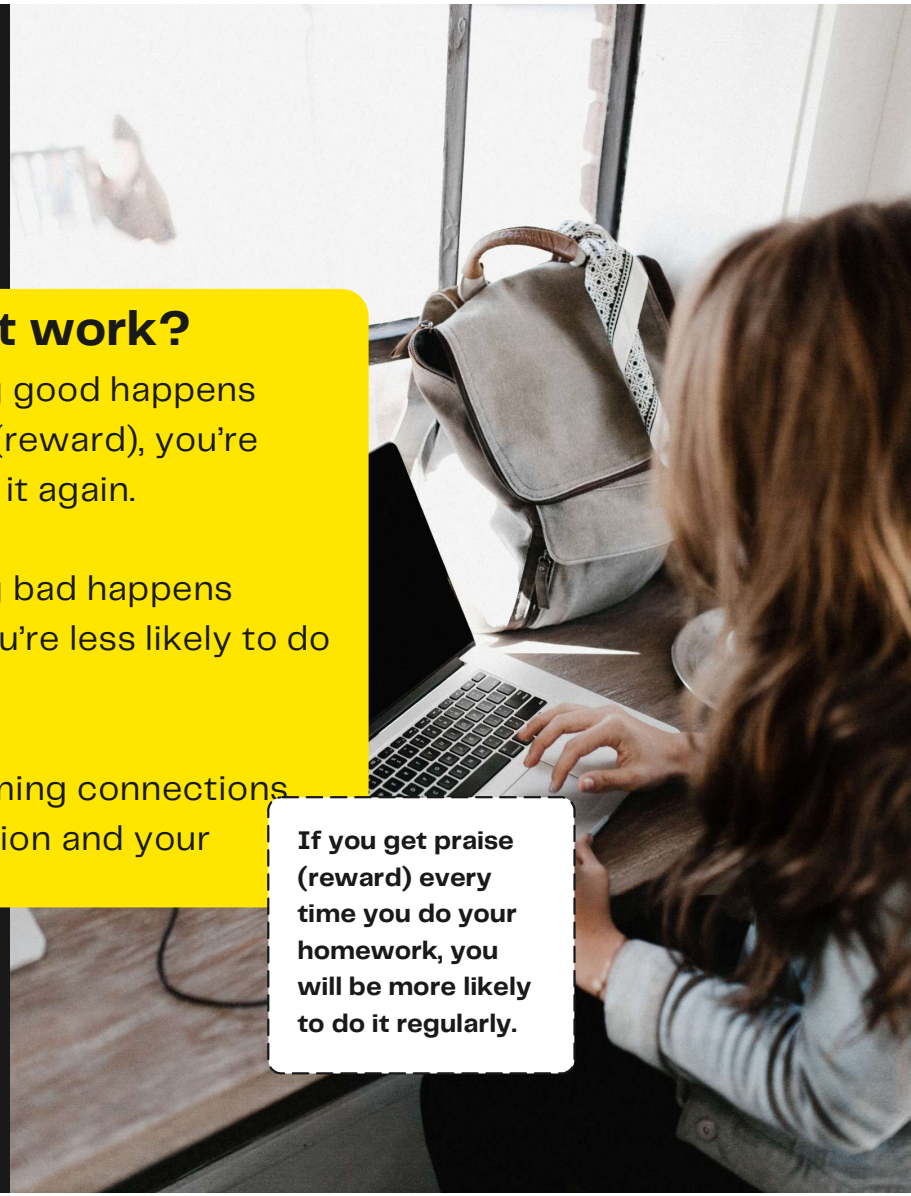
Learning is how we gain knowledge or skills and change our behavior. Different psychologists have different ideas about how learning happens. These ideas are called perspectives or theories of learning.

Behavioral Perspective

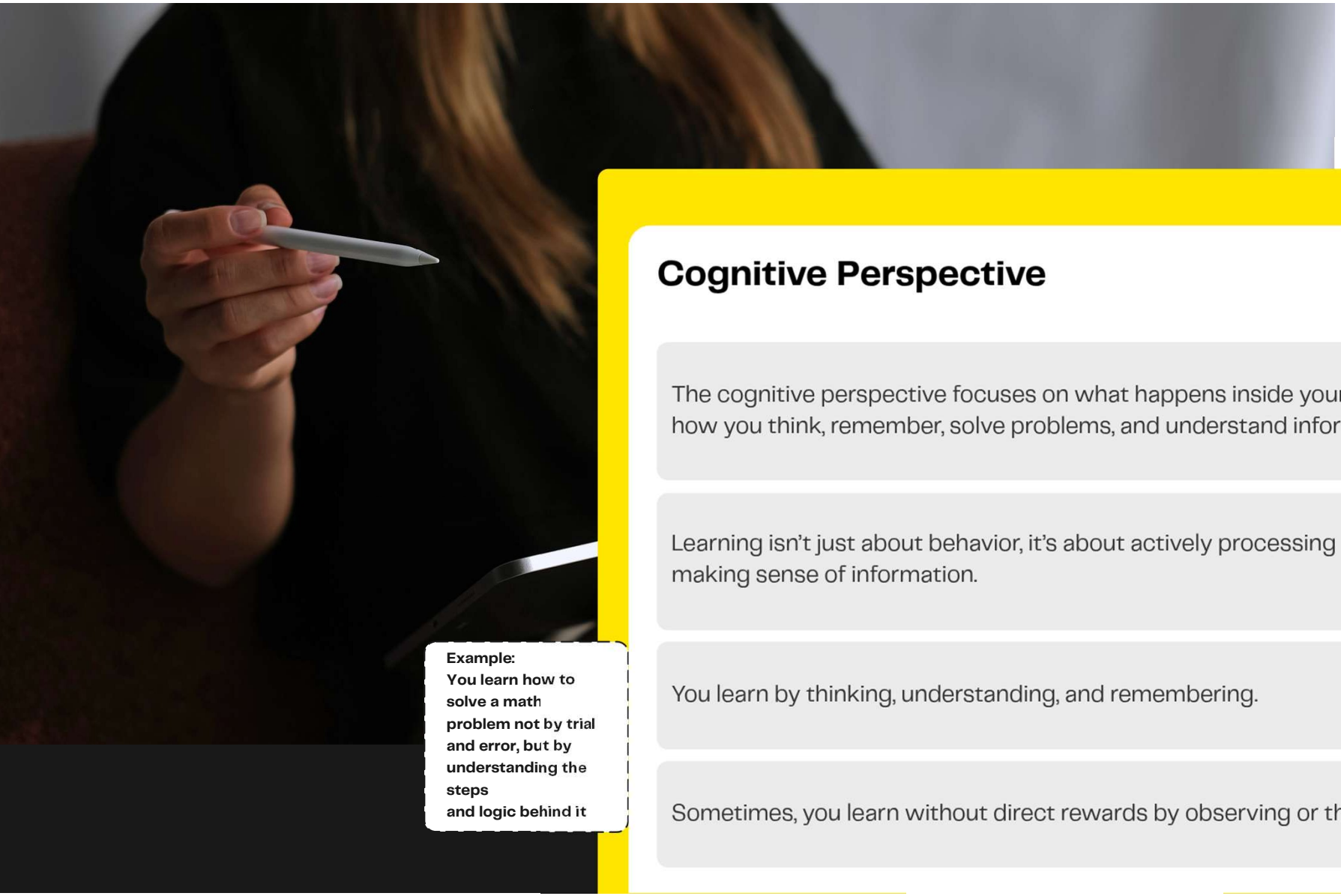
- The behavioral perspective focuses on what you can see – the behaviors or actions.
- It says learning happens when our behavior changes because of things happening around us (stimuli) and the way we respond to those things.

How does it work?

- When something good happens after a behavior (reward), you're more likely to do it again.
- When something bad happens (punishment), you're less likely to do it again.
- You learn by forming connections between a situation and your response.



If you get praise (reward) every time you do your homework, you will be more likely to do it regularly.



Example:
You learn how to solve a math problem not by trial and error, but by understanding the steps
and logic behind it

Cognitive Perspective

The cognitive perspective focuses on what happens inside your mind — how you think, remember, solve problems, and understand information.

Learning isn't just about behavior, it's about actively processing and making sense of information.

You learn by thinking, understanding, and remembering.

Sometimes, you learn without direct rewards by observing or thinking.

Constructivist Perspective

The constructivist perspective believes learning is an active process where you build your own knowledge by connecting new information to what you already know. It values personal experience and social interaction.

HOW DOES IT WORK?

- Learning happens by exploring, experimenting, and reflecting.
- Social interactions (talking with others) help build understanding.
- The teacher guides but students construct knowledge themselves.

EXAMPLE

- When kids work together on a science project, they discuss ideas and build knowledge by sharing and experimenting, rather than just listening passively.

Focus

Observable behavior

Mental processes

Active knowledge construction

Key Idea

Behavioral →

Learning by stimuli and responses

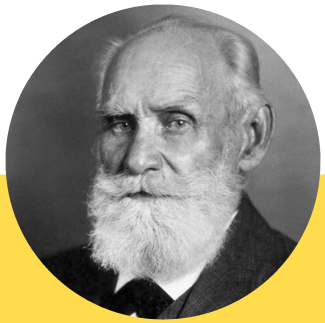
Cognitive →

Learning by thinking and memory

Constructivist →

Learning by building understanding

Theorists



BEHAVIORAL

Pavlov, Thorndike, Skinner

COGNITIVE

Piaget, Tolman, Bandura

CONSTRUCTIVIST

Piaget, Vygotsky

Examples

Behavioral

Dog salivating to bell

Rat pressing lever

Cognitive

Problem solving

Learning by watching

Constructivist

Children experimenting and learning socially

Learning Theories

Classical Conditioning

- Classical conditioning is a type of learning where a neutral stimulus (something that initially doesn't cause any special reaction) becomes linked or associated with a meaningful stimulus (something that naturally causes a reaction).

- After this association, the neutral stimulus alone can trigger a similar reaction.

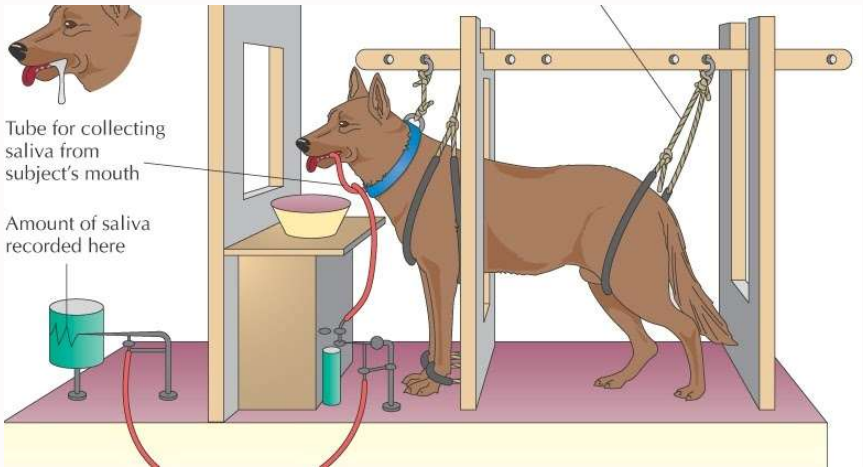
- Imagine you hear a certain sound that normally means nothing to you. But if that sound is repeatedly played before something important happens (like getting food or something scary), eventually, that sound alone will make you react as if the important thing was happening.

Pavlov's Dogs Experiment: Classical Conditioning

- Pavlov designed an apparatus, that could measure how much a dog's mouth waters in response to food or other things in its environment.

- At the beginning of his experiment, Pavlov noted that no saliva flowed when he rang a bell.

- He then trained the dog by sounding the bell and, shortly afterward, presenting food. After the sound of the bell had been paired with food a few times, he tested the effects of the training by measuring the amount of saliva that flowed when he rang the bell and did wor present food.



Pavlov's Dogs Experiment: Classical Conditioning

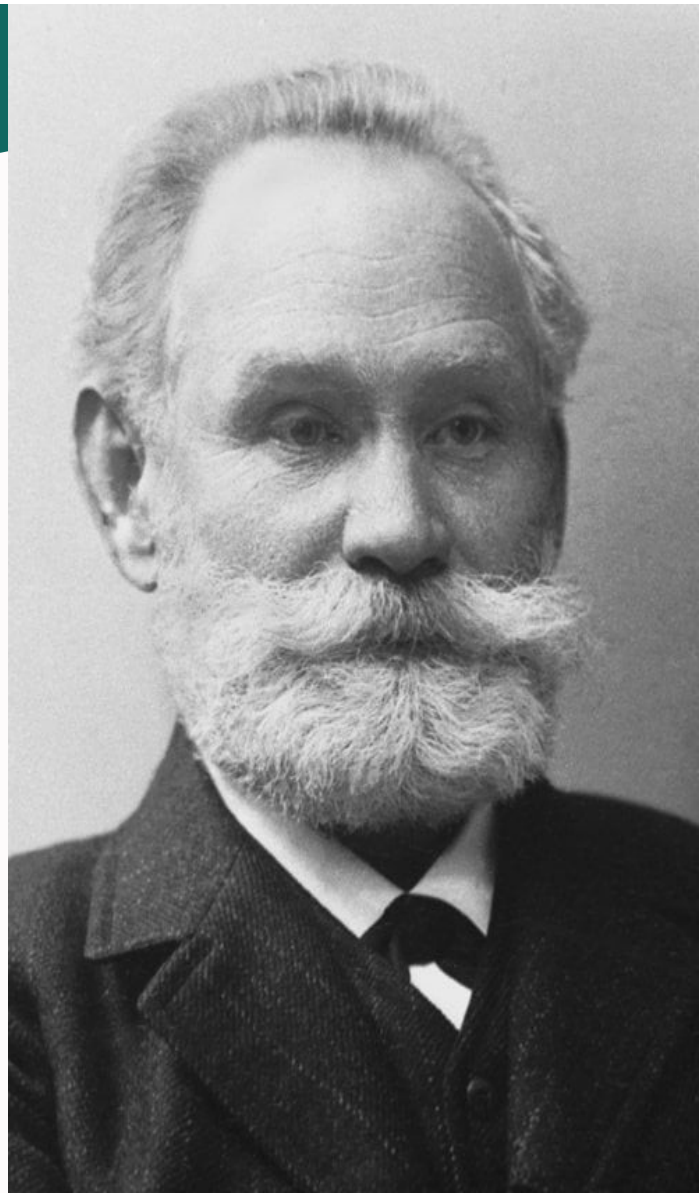
- He found that some saliva was produced in response to the bell alone. He then resumed the training—paired presentations of bell and food—a few more times and then tested again with the bell alone.

- As training continued, the amount of saliva on tests with the bell alone increased (up to a point, of course).

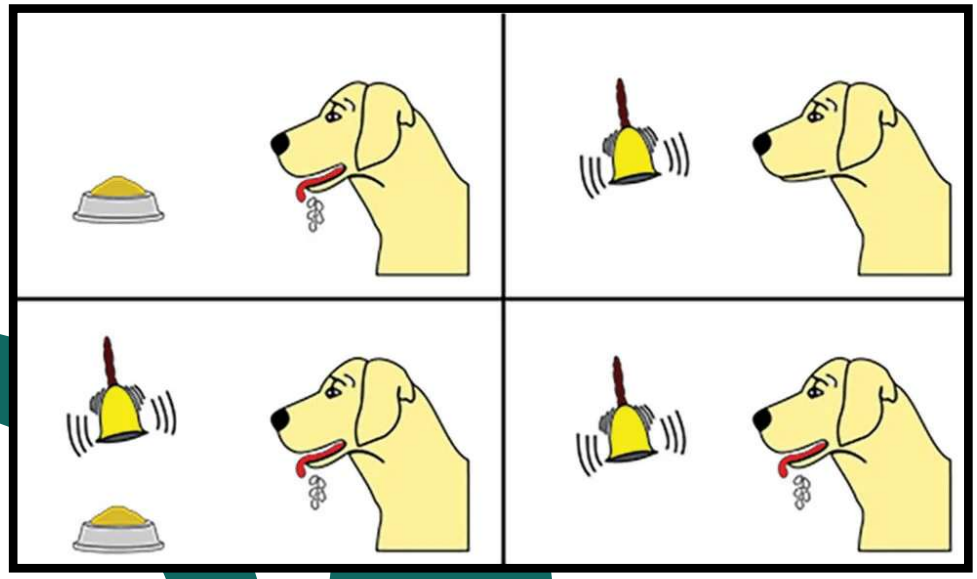
- Thus, after training, the dog's mouth watered—salivated—whenever the bell was sounded.

- This is what was learned; it is the conditioned response.

- Classical conditioning gets its name from the fact that it is the kind o learning situation that existed in the early "classical" experiments of IvarP. Pavlov (1849-1936).



Pavlov’s Dogs Experiment: Classical Conditioning

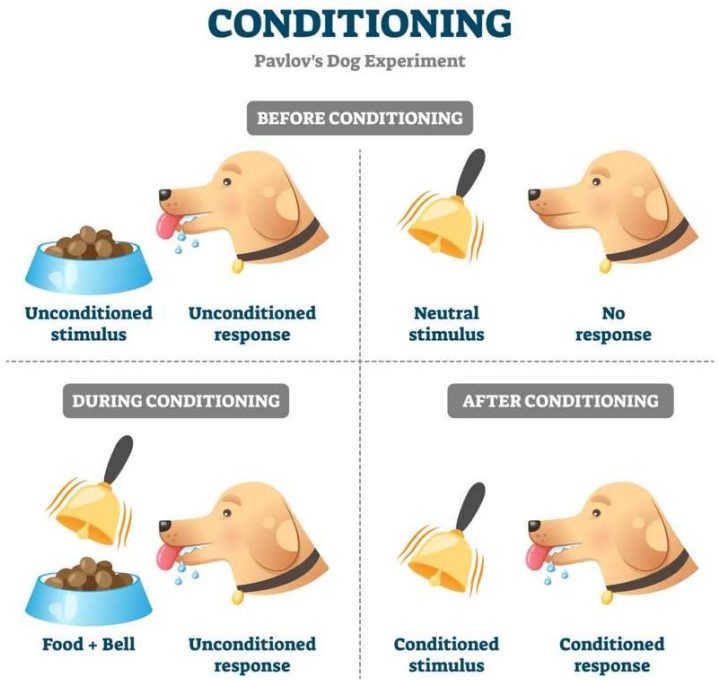


Pavlov noticed dogs naturally salivate when they see or smell food. This salivation happens automatically.

He rang a bell (which was a neutral stimulus it didn’t cause salivation on its own right before giving the dogs food.

After doing this many times, the dogs started to salivate just when they heard the bell, even if no food was presented.

TERM	EXAMPLE IN EXPERIMENT	MEANING
Unconditioned Stimulus (UCS)	Food	Naturally causes a response (no learning needed)
Unconditioned Response (UCR)	Salivation to food	Natural response to UCS
Conditioned Stimulus (CS)	Bell	Initially neutral, but becomes associated with UCS
Conditioned Response (CR)	Salivation to bell	Learned response to CS



Examples in Daily Life

- A child goes to the dentist and hears the drill sound (neutral stimulus).
- The dental work causes pain (unconditioned stimulus), making the child cry or feel scared (unconditioned response).
- After several visits, the child feels anxious or scared just by hearing the drill sound (conditioned stimulus), even before any pain happens.

This anxious feeling is the conditioned response.

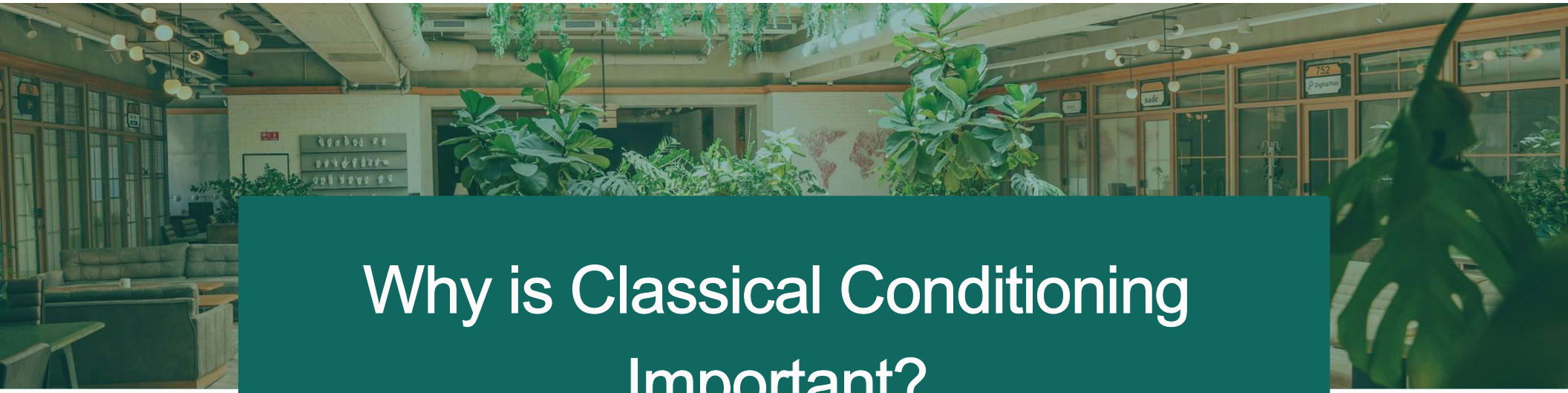
Examples in Daily Life

Advertising

A soft music tune (neutral stimulus) is played before showing a favorite product (meaningful stimulus). After repeated exposure, just the music alone can make people feel good about the product.

Phobias

Someone bitten by a dog (pain = UCS) feels fear (UCR). Later, just seeing a dog (CS) causes fear (CR) even without being bitten again.



Why is Classical Conditioning Important?

It explains how many automatic reactions are learned, like fears, preferences, and emotional responses.

It helps us understand habits and how certain cues can trigger behaviors.

Principles of Classical Conditioning

Classical conditioning works based on several key principles that explain how and when learning happens.

Unconditioned Response
(Salivation)

Neutral Stimulus
(Bell Ringing)

Unconditioned Stimulus
(Food)

ACQUISITION

This is the initial phase where the neutral stimulus (NS) is repeatedly paired with the unconditioned stimulus (UCS) to create an association. During acquisition, the neutral stimulus gradually becomes a conditioned stimulus (CS) that triggers a conditioned response (CR).

Example

In Pavlov’s experiment, the bell (NS) is repeatedly paired with food (UCS). Over time, the bell alone causes the dog to salivate (CR).

EXTINCTION

When the conditioned stimulus (CS) is presented repeatedly without the unconditioned stimulus (UCS), the conditioned response (CR) gradually weakens and disappears. Extinction is not forgetting; the learned behavior is suppressed but can return.

Example

If Pavlov kept ringing the bell but never gave food afterward, eventually the dogs would stop salivating to the bell.

SPONTANEOUS RECOVERY

After extinction, if some time passes and the conditioned stimulus (CS) is presented again, the conditioned response (CR) may suddenly reappear. This shows that extinction doesn't erase learning completely.

Example

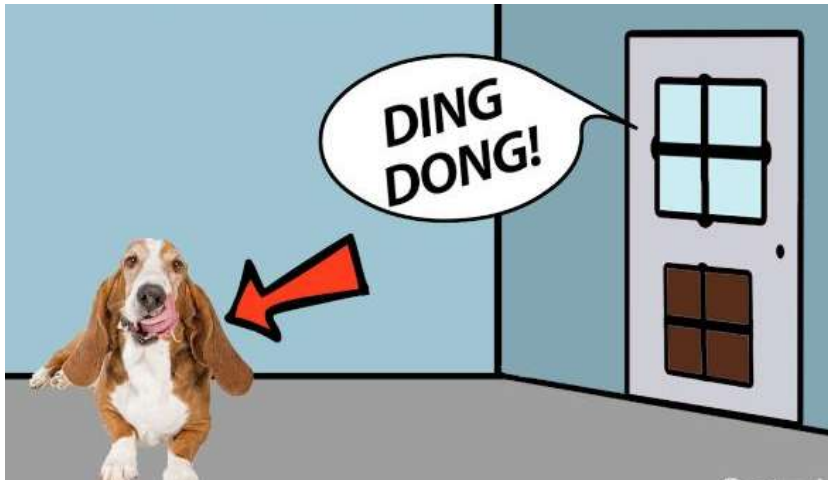
Days after the bell stopped producing salivation, ringing the bell once again causes the dog to salivate, though usually less strongly.

GENERALIZATION

The conditioned response (CR) happens not just to the original conditioned stimulus (CS) but also to similar stimuli. The organism responds similarly to stimuli that resemble the CS.

Example

If a dog is conditioned to salivate to a specific bell tone, it may also salivate to other bell tones that sound similar.

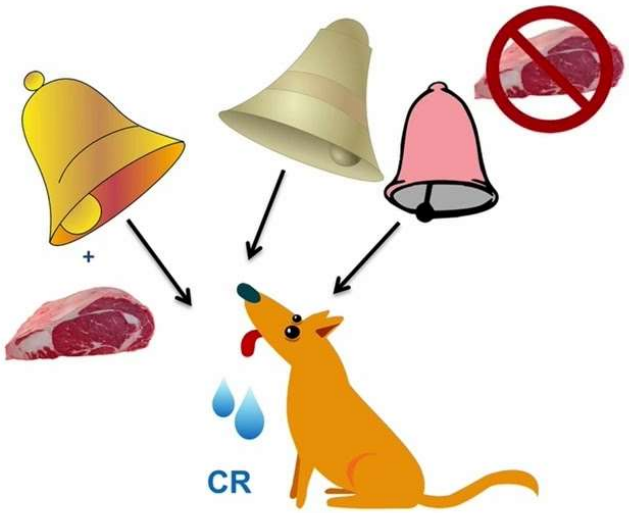


DISCRIMINATION

The ability to distinguish between the conditioned stimulus (CS) and other similar but different stimuli, responding only to the specific CS. Learned by only reinforcing one particular stimulus and not others.

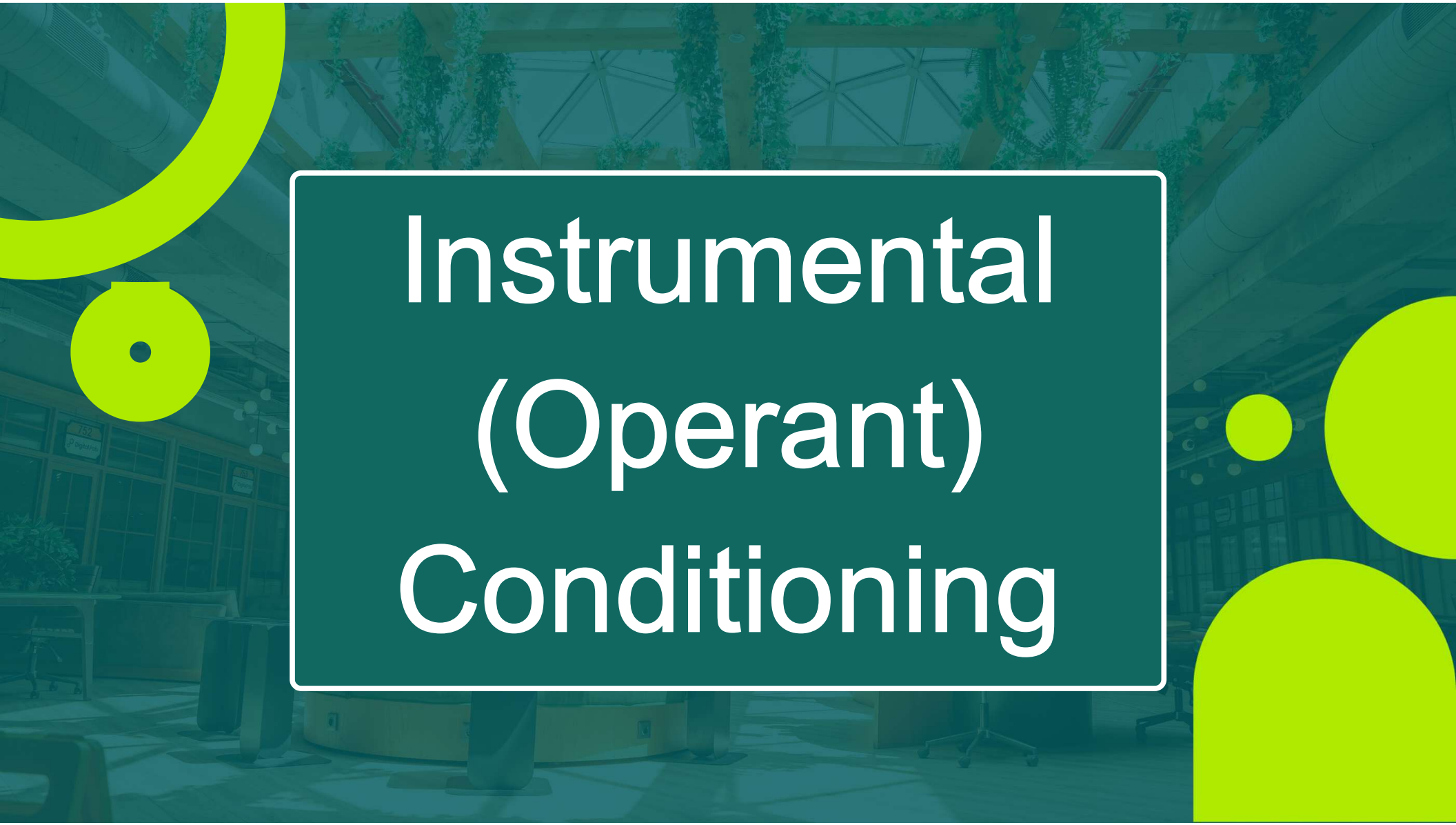
Example

A dog learns to salivate to a specific bell tone but not to different tones that are dissimilar.

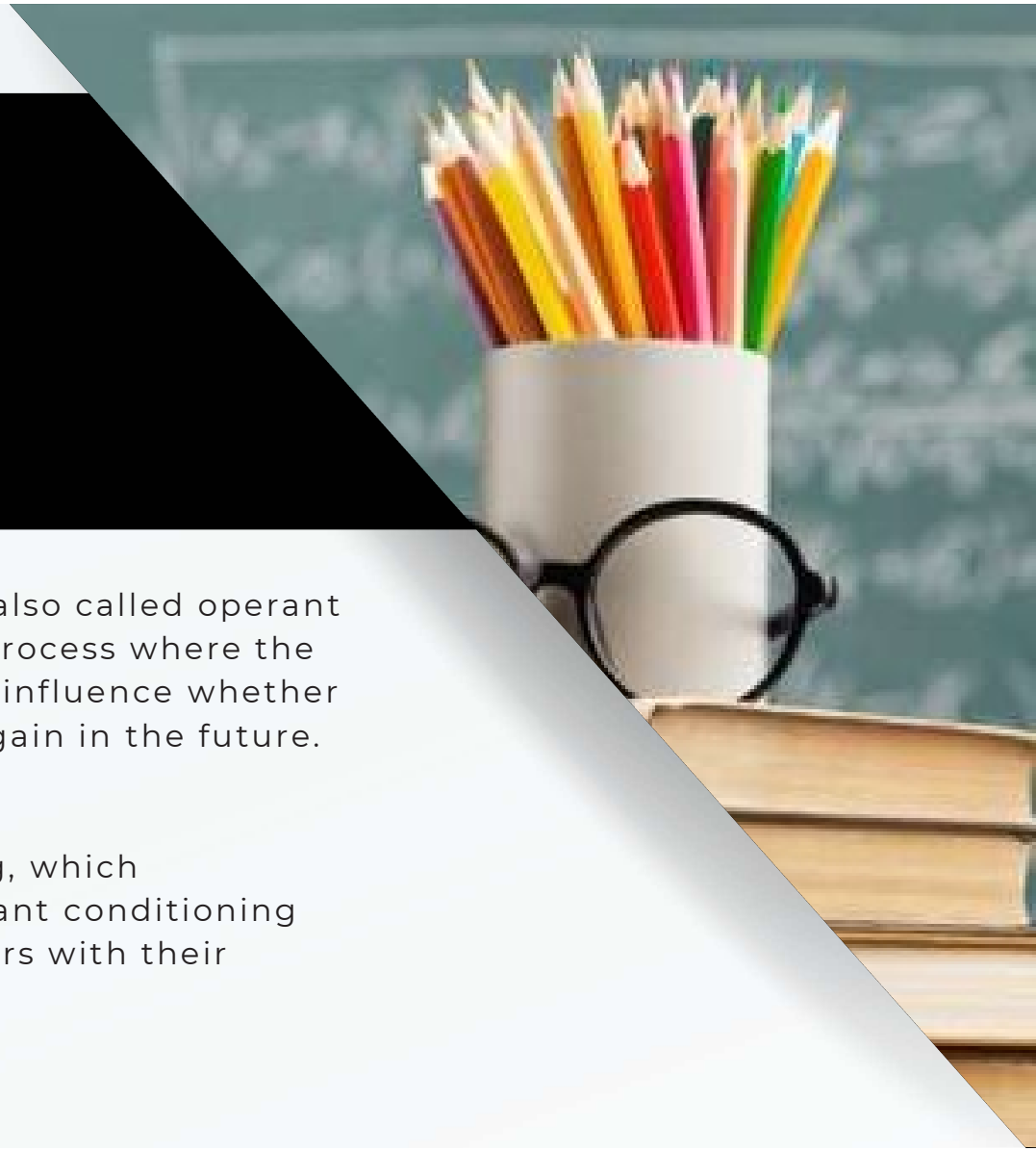


SUMMARY

01	02	03	04	04
Acquisition	**Extinction**	**Spontaneous Recovery**	**Generalization**	**Discrimination**
Learning phase when CS is paired with UCS	CR weakens when CS no longer paired with UCS	Sudden return of CR after rest following extinction	Responding to stimuli similar to the CS	Learning to respond only to a specific CS
Eg: Bell+Food = Salivation	Eg: Bell without food → Salivation stops	Eg: Bell causes salivation again after a break	Eg: Salivating to similar bell tones	Eg: Salivating only to one bell tone


Instrumental
(Operant)
Conditioning

INSTRUMENTAL (OPERANT) CONDITIONING



Instrumental conditioning (also called operant conditioning) is a learning process where the consequences of a behavior influence whether that behavior will happen again in the future.

Unlike classical conditioning, which associates two stimuli, operant conditioning is about associating behaviors with their consequences.

INSTRUMENTAL (OPERANT) CONDITIONING

If a behavior leads to a good consequence (reinforcement), the behavior becomes more likely.

If a behavior leads to a bad consequence (punishment), the behavior becomes less likely.

B. F. SKINNER & OPERANT CONDITIONING

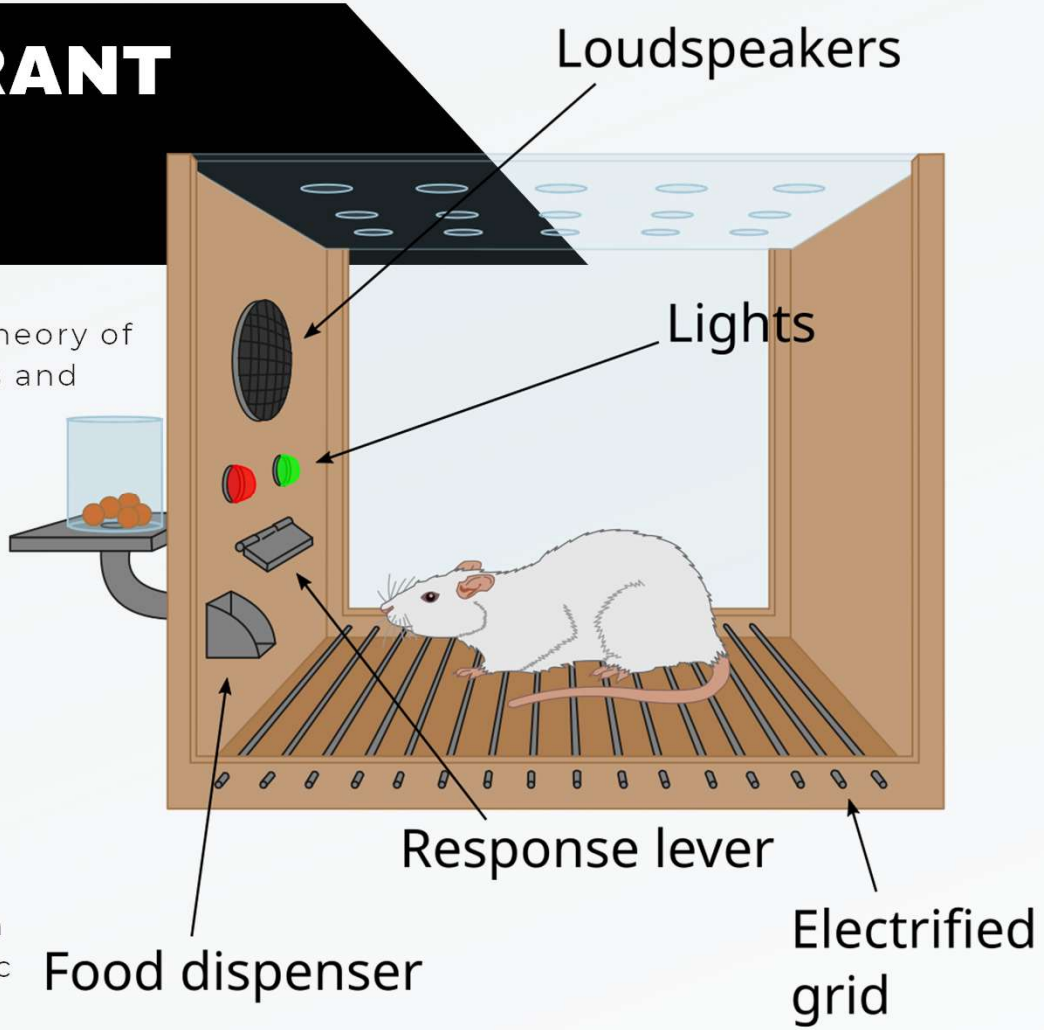
Building on Thorndike, Skinner developed a systematic theory of operant conditioning. He focused on how reinforcements and punishments shape voluntary behavior

SKINNER BOX (OPERANT CHAMBER

01 Skinner designed a special box for controlled experiments.

02 Inside the box, an animal (often a rat or pigeon) could perform an action, like pressing a lever or pecking a key.

03 The box was connected to a mechanism that could deliver food or a mild electric shock.



SKINNER'S KEY FINDINGS

Reinforcement

Its introduced and extensively studied by B.F. Skinner. It refers to any consequence that increases the probability that a specific behavior will occur again in the future. Reinforcement strengthens the behavior it follows.

Positive reinforcement

Positive reinforcement involves adding a stimulus (like praise, money, or treats) to make a behavior more likely.

Negative reinforcement

Involves taking away something unpleasant (like a loud noise or discomfort) when the desired behavior occurs, increasing that behavior.

Punishment

Introducing a consequence to decrease a behavior.

POSITIVE REINFORCEMENT

Adding a pleasant stimulus after a behavior to increase its occurrence.

EXPERIMENTAL EXAMPLE

A rat receives food after pressing a lever.

REAL LIFE EXAMPLE

A student gets praise or candy for completing homework.

NEGATIVE REINFORCEMENT

Removing an unpleasant stimulus after a behavior to increase its occurrence

EXPERIMENTAL EXAMPLE

A rat presses a lever to stop an electric shock.

REAL LIFE EXAMPLE

A person takes painkillers to remove a headache.

PUNISHMENT

Applying an unpleasant consequence (or removing a pleasant one) to decrease a behavior.

EXPERIMENTAL EXAMPLE

A rat receives a shock after pressing the wrong lever.

REAL LIFE EXAMPLE

A child is scolded for misbehaving, or loses privileges like screen time

NEGATIVE REINFORCEMENT IS NOT PUNISHMENT

Negative reinforcement increases behavior by removing an aversive stimulus. Punishment decreases behavior by adding or removing a stimulus (more on punishment later).

Reinforcement: Increases the likelihood of the behavior happening again.
- Positive = Add something good.
- Negative = Remove something bad.

Punishment: Decreases the likelihood of the behavior happening again. It can involve adding something unpleasant (like a shock or scolding), or removing something pleasant (like a toy or reward).

EXAMPLES OF OPERANT CONDITIONING

Animal Training: Dogs learn to sit to get treats (positive reinforcement).

Education: Students get praise or good grades (positive reinforcement) for studying, making them study more.

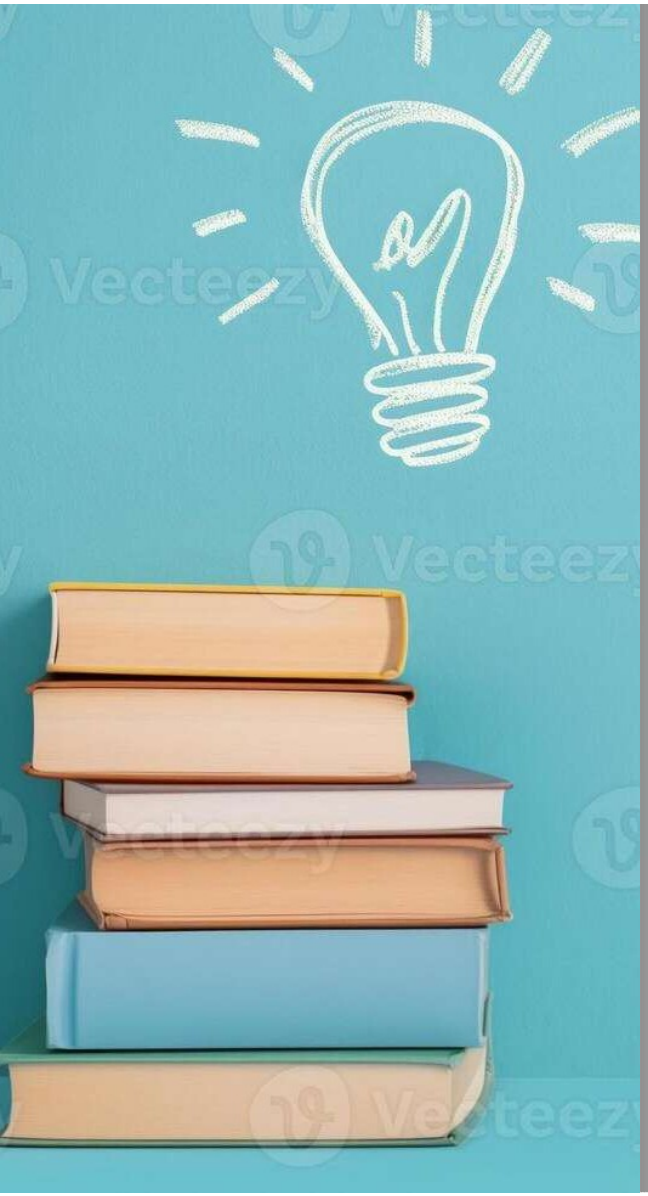
Workplace: Bonuses or raises increase productivity (positive reinforcement), while warnings or demotions decrease poor performance (punishment).

WHY IS OPERANT CONDITIONING IMPORTANT?

01 It explains how voluntary behaviors are acquired and maintained.

02 It has practical uses in behavior modification, education, therapy, and training animals.

03 Unlike classical conditioning (which explains reflexes), operant conditioning explains complex behaviors based on consequences.



SCHEDULES OF REINFORCEMENT

Schedules of reinforcement are rules that determine when and how often a behavior is followed by a reward (reinforcement).

These schedules affect:

- How quickly a behavior is learned
- How often it is repeated
- How resistant it is to extinction (when the reinforcement stops)

Understanding reinforcement schedules is key to behavior training, motivation, habit formation, and even addiction.

4 TYPES

01
FIXED RATIO (FR)

Given after a set number of responses

02
VARIABLE RATIO (VR)

Given after a random number of responses (average known)

03
FIXED INTERVAL (FI)

Given after a fixed amount of time, regardless of response count

04
VARIABLE INTERVAL (VI)

Given after varying, unpredictable time intervals

EXAMPLE BEHAVIOR: STUDYING FOR EXAMS

Imagine a student preparing for exams. The way the student's studying behavior is reinforced (rewarded) will differ depending on the schedule of reinforcement.

FIXED RATIO (FR) SCHEDULE

Reward: After studying for a fixed number of hours, the student gets a reward.

EXPLANATION

- Suppose the student decides to study for 5 hours and then gets to watch their favorite TV show as a reward.
- After every 5 hours of study, they get the same reward.
- This encourages the student to study hard and fast because they know exactly when the reward will come.
- After watching TV, the student might take a short break before starting the next 5 hour study session.

BEHAVIOR PATTERN

- The student studies intensively to reach 5 hours quickly.
- Then takes a brief pause to enjoy the reward.
- Motivation remains high because the reward is predictable.

VARIABLE RATIO (VR) SCHEDULE

Reward: The student gets rewarded after a random number of study hours (sometimes after 3 hours, sometimes 6, sometimes 2, etc.).

EXPLANATION

- The student doesn't know exactly when the reward will come.
- Maybe after 3 hours of study, they get a small treat. Another time, it might be after 7 hours.
- Because the reward is unpredictable but based on the number of study hours, the student keeps studying, thinking, "Maybe if I study just a little more, I'll get a reward."
- This keeps the student motivated and studying steadily without long breaks.

BEHAVIOR PATTERN

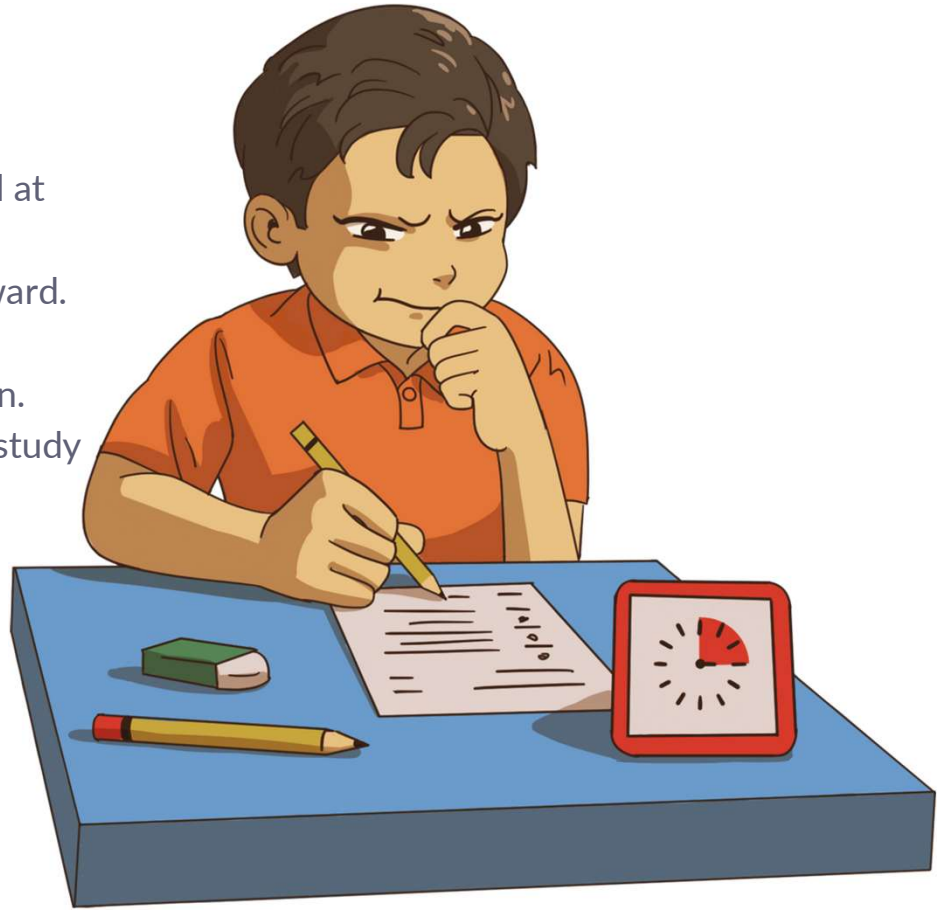
- The student studies at a high and steady rate.
- The unpredictability makes the behavior persistent and hard to extinguish.

FIXED INTERVAL (FI) SCHEDULE

Reward: The student gets a reward after a fixed time period, regardless of how much they study during that time.

EXPLANATION

- Suppose the student is rewarded every Sunday if they have studied at least once during the week.
- They don't get any reward if they study on Monday but stop afterward.
- As the week progresses, the student might start studying more frequently closer to Sunday because that's when the reward is given.
- After receiving the reward on Sunday, the student might relax and study less early in the week.



BEHAVIOR PATTERN

- The student's studying starts slowly after the last reward.
- It increases as Sunday (the reward day) approaches.
- This creates a "scalloped" pattern of effort.

VARIABLE INTERVAL (VI) SCHEDULE

Reward: The student gets rewarded for studying, but the rewards come at random time intervals.

EXPLANATION

- The student might be randomly checked by their parents or teachers anytime during the month.
- If caught studying at that time, they get a reward.
- Because they don't know when the next check/reward will happen, the student keeps studying consistently throughout the month.
- This prevents the student from only studying right before exams or specific times.

BEHAVIOR PATTERN

- The student studies at a steady, moderate pace.
- The behavior is consistent because the reward could come at any time.

SUMMARY TABLE

Schedule Type	When Reward is Given	Student's Behavior Pattern	Realistic Example
Fixed Ratio (FR)	After every set number of study hours (e.g., 5)	Studies intensively, then takes breaks after reward	Watches TV after every 5 hours of study
Variable Ratio (VR)	After random number of study hours (e.g., 2, 4, 7)	Studies steadily, motivated by unpredictable reward	Gets random treats after varying hours of study
Fixed Interval (FI)	After fixed time periods (e.g., every Sunday)	Studies more as reward day approaches, relaxes after	Reward every Sunday if studied during week
Variable Interval (VI)	After random time intervals (e.g., random checks)	Studies consistently, not knowing when reward comes	Parents randomly check and reward study habits

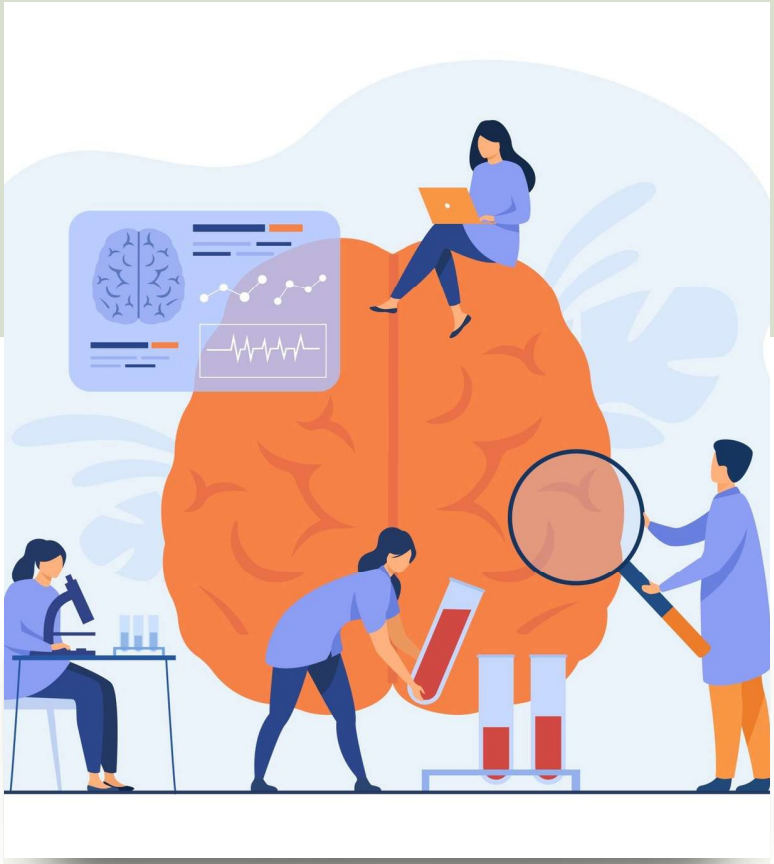
COGNITIVE LEARNING

Cognitive learning is about how our brain learns new things by thinking, understanding, remembering, and solving problems not just by reacting to rewards or punishments.

It means learning is happening inside your mind. It's about how you process information, make sense of it, and use it.

Why is Cognitive Learning Important?

- It shows that learning is more than just doing things for rewards or to avoid punishments.
- You can learn even if no one is watching or rewarding you.
- It helps explain how people figure out tricky problems by thinking carefully, not just by guessing or trying things randomly.



Types of Cognitive Learning

- Latent Learning
- Insight Learning
- Observational Learning

Latent Learning

- Edward Tolman was an American psychologist in the early 20th century.
- He didn't agree with the strict behaviorists of his time (like B.F. Skinner), who believed learning only happens when there's a reward or punishment.
- Tolman believed that animals and people can learn things without being rewarded right away and he set out to prove it.

The Maze Experiment

Purpose of the experiment:
Tolman wanted to see whether rats could learn the layout of a maze even if they weren't given any food or reward. He wanted to prove that learning could happen without reinforcement and stay "hidden" until needed.

Setup of the Experiment

- Tolman used a maze with several paths and turns.
- He used three groups of rats to test his ideas.
- 3 groups are as follows:

Always got food

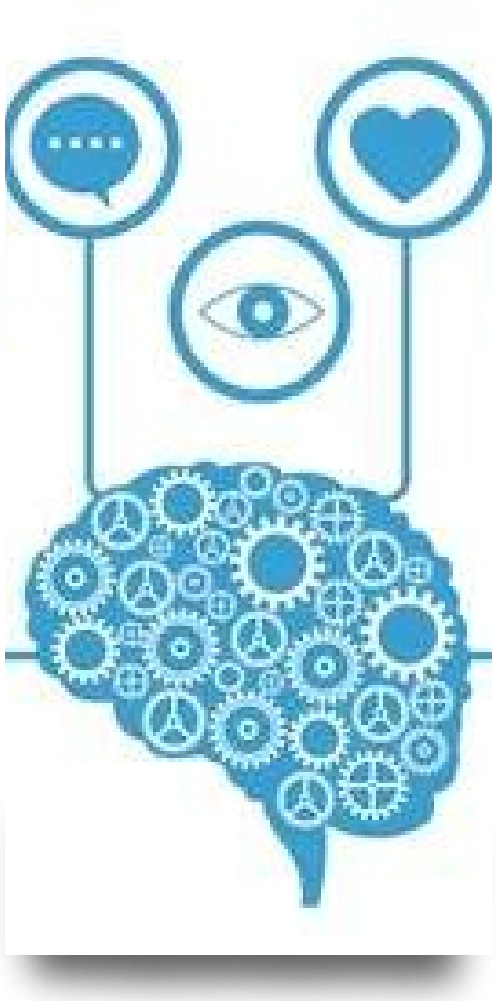
Never got food

Food starts on Day 11

Procedure

GROUP 1 - ALWAYS GOT FOOD

- Rats were given food at the end of the maze every day.
- These rats quickly learned the maze because they had food waiting at the end.
- Their performance improved steadily over the days.



Procedure

GROUP 2 - NEVER GOT FOOD

- Rats never received any food in the maze.
- These rats wandered in the maze.
- They didn’t improve much because they had no motivation to find the goal.

Procedure

GROUP 3 - FOOD STARTS ON DAY 11

- Rats got no food for the first 10 days, but on Day 11, they started getting food at the end.
- For the first 10 days, these rats behaved like Group 2 just wandered around.
- But on Day 11, when food was added, they suddenly ran the maze almost perfectly!
- Their performance was as good as or even better than Group 1.

Findings

- The rats in Group 3 had been quietly learning the maze the whole time, even without a reward.
- They formed a mental map of the maze - what Tolman called a “cognitive map.”
- Once they had a reason to use that knowledge (the food reward), they performed very well.
- This kind of learning is called latent learning - learning that is stored in the brain but not shown until there's a reason or motivation to use it.

Example

Imagine you explore a new neighborhood with your parents just walking around. You aren't rewarded or told to remember the paths. Later, when you need to find a shortcut to your friend's house because you're late, you realize you already know the way! You learned the routes earlier but didn't show it until the moment mattered.

Insight Learning

- Wolfgang Kohler was a German psychologist who wanted to understand how animals solve problems.
- In the early 1900s, most scientists believed animals only learn through trial and error trying things randomly until something works.
- But Kohler believed that animals (and humans) could also solve problems through thinking and understanding something called insight.

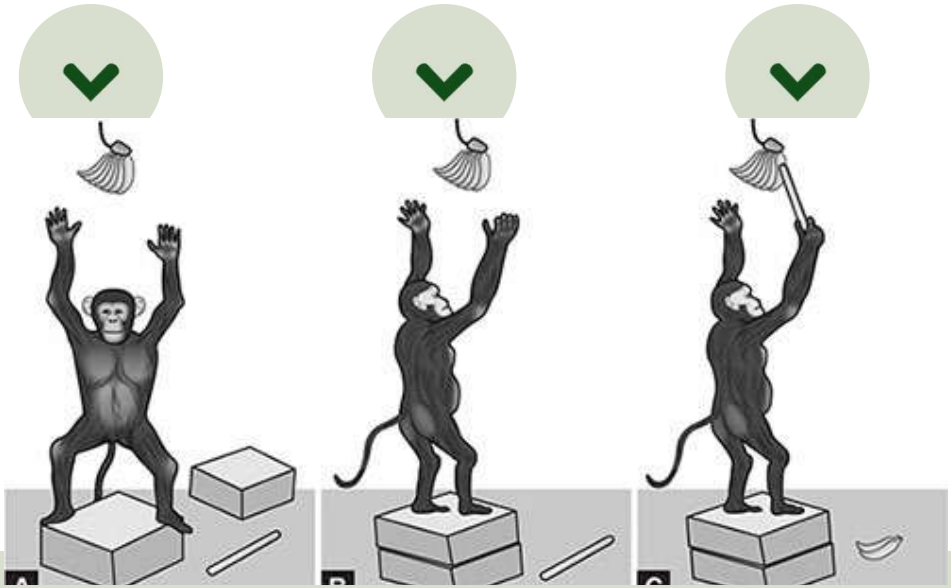
Kohler's Experiment

Purpose of the experiment:
Kohler wanted to see if chimpanzees could:

- Solve problems using thinking not just by trial and error.
- Show signs of intelligence and understanding.

Setup of the Experiment:
Kohler worked with chimpanzees on the island of Tenerife (in Spain). He placed them in a room with the following challenge:

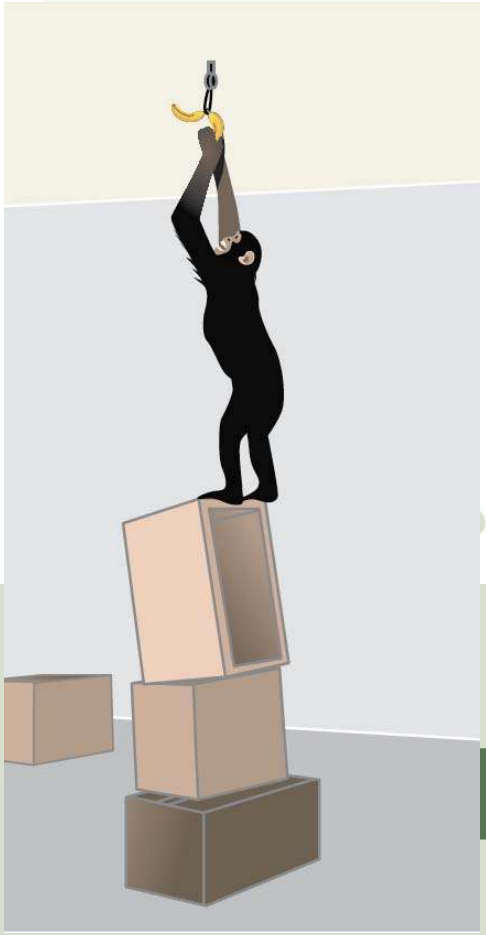
- Bananas were hung from the ceiling — out of the chimp's reach.
- Inside the room were some wooden boxes and sticks.
- The chimps could see the bananas, but they couldn't jump high enough to get them.



The Most Famous Chimp: Sultan

Sultan was one of Kohler's smartest chimpanzees. At first, he jumped and tried to reach the bananas but he failed. Then something interesting happened:

- Sultan looked around.
- He noticed the boxes in the room.
- Suddenly, he had an idea: he stacked the boxes, climbed up, and grabbed the bananas
- In another version, he used two sticks, joining them together to make one long stick to reach the banana outside the cage.



Sultan did not randomly try different things - he sat, thought for a moment, and then acted with purpose.

What Did This Prove?

- This experiment showed that Sultan did not rely on trial-and-error.
- Had a moment of insight- a sudden “Aha!” or “Eureka!” realization.
- He could understand the problem and come up with a solution using logic and tools.
- This is what we call insight learning - solving a problem by suddenly understanding the solution.
- You suddenly understand how to solve a problem without trial and error.

Example

You are stuck trying to open a tricky jar lid. You try many ways but nothing works. Suddenly, you realize you can tap the lid gently on the table, and it opens easily. You didn't get there by trying every way; you just had a sudden idea that worked.

Key finding of Insight learning

Wolfgang Kohler studied chimpanzees that couldn't reach bananas hanging high. One chimp suddenly stacked boxes and used sticks to get the bananas - not by random trying, but by suddenly figuring out the solution.

Observational Learning

Albert Bandura was a Canadian-American psychologist. He wanted to understand how people learn behaviors, especially aggressive ones.

In the 1960s, he developed the idea of observational learning, also known as modeling which means we can learn just by watching other people, even if we're not rewarded or punished ourselves.

Bandura's Famous Bobo Doll Experiment (1961)

Bobo doll

Purpose of the Experiment Bandura wanted to find out:

- Do children learn behavior by watching others, even without direct rewards or punishments?
- Will children copy aggressive actions if they see adults doing them?

What Is a Bobo Doll?

A Bobo doll is a large inflatable toy shaped like a clown. If you hit it, it falls over and bounces back up perfect for testing aggressive play.

The Experiment

Bandura worked with a group of young children (around 3 to 6 years old) and divided them into three groups:

Watched Aggressive Model

- Children watched a video of an adult hitting, kicking, punching, and shouting at a Bobo doll.
- The adult used a mallet (toy hammer) and aggressive words like “Boom” or “Sock him”

Watched Non-Aggressive Model

- Children watched a video of an adult playing calmly with toys no aggression at all.

Control Group

- Children didn’t watch any video before playing.

Outcome

All children were then placed alone in a room with:

- A Bobo doll

Watched Aggressive Model

Many of these children copied the aggressive behavior almost exactly hitting the doll, shouting similar phrases, even using the mallet.

Other 2 Groups

These children were less aggressive, and played more calmly.

Children learn behaviors by watching others, even if they aren't personally rewarded or punished.

Aggression can be learned just by observing a role model.

This learning happens through four key mental processes:
1. Attention – Watching the model carefully
2. Retention – Remembering what was seen
3. Reproduction – Being able to copy the behavior
4. Motivation – Wanting to imitate the behavior

Examples

At Home:

A child sees their parent politely say “thank you” and starts doing the same.

A younger sibling copies how their older brother ties shoelaces.

On Social Media or TV:

A teenager sees a YouTuber using certain slang or doing a dance and copies it.

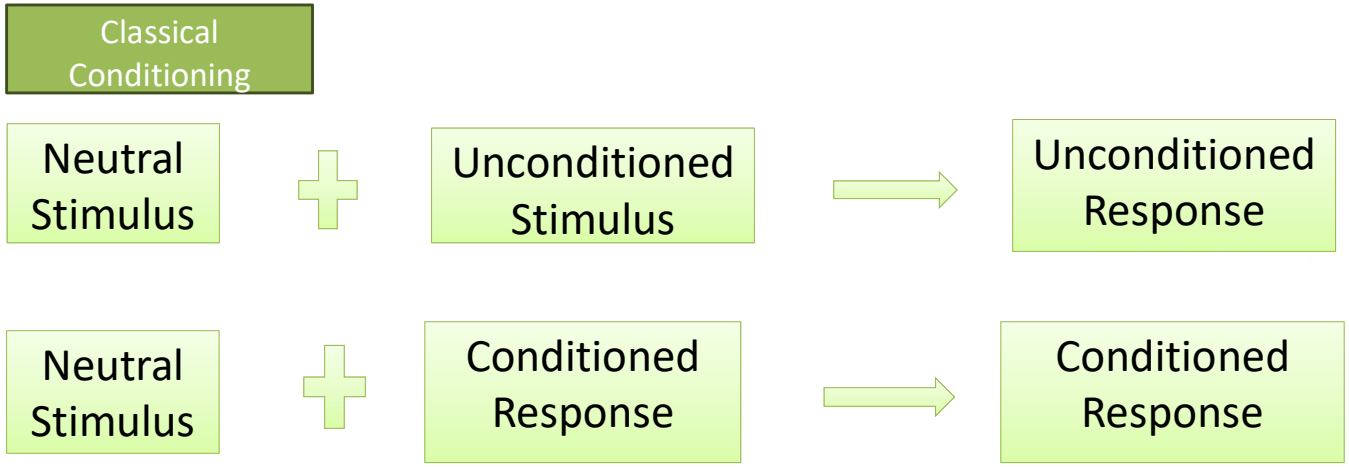
Watching fights or bad behavior on TV may lead some children to act more aggressively.

SUMMARY

Type of Learning	Definition	Real-Life Example	Key Researcher
Latent Learning	Learning that happens but stays hidden until there's a reason to use it	You know a shortcut to school even though you never used it before	Edward Tolman
Insight Learning	A sudden "Aha!" moment when you figure out a solution without guessing	You suddenly realize how to solve a tricky puzzle or open a stuck jar	Wolfgang Kohler
Observational Learning	Learning by watching and copying others	A child learns how to tie shoes by watching their older sibling	Albert Bandura

Summary and Conclusion

Learning is defined as any relatively permanent change in behaviour that occurs as a result of practice or experience.



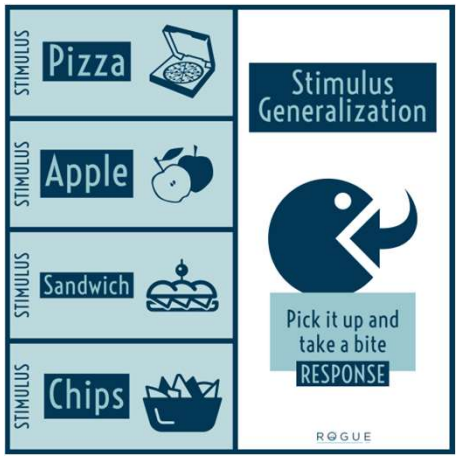
As a result of repeated pairing of Neutral stimulus with Unconditioned stimuli, the Neutral stimuli begins to show the response, which is called as conditioned response.

Classical conditioning plays a large role in the formation of conditioned emotional responses to previous neutral stimuli. Some forms of treatment for psychological disorders use classical conditioning.

Summary and Conclusion

Extinction in classical conditioning

Extinction in classical conditioning is the process of presenting the conditioned stimulus alone without the unconditioned stimulus for a number of trials. When this is done, the strength or likelihood of the conditioned response gradually decreases. After a response has been extinguished, it recovers some of its strength with the passage of time; this is known as spontaneous recovery



The tendency to give conditioned responses to stimuli that are similar in some way to the conditioned stimulus but have never been paired with the unconditioned stimulus.

Discrimination is the process of learning to make one response to one stimuli or no response to another stimulus.

Summary and Conclusion

Operant Conditioning

	Reinforcement (Increase / maintain behavior)	Punishment (Decrease behavior)
Positive (add stimulus)	**Add** pleasant stimulus *to* **Increase / maintain** behavior	**Add** aversive stimulus *to* **Decrease** behavior
Negative (remove stimulus)	**Remove** aversive stimulus *to* **Increase / maintain** behavior	**Remove** pleasant stimulus *to* **Decrease** behavior

In Operant conditioning, the learning is contingent on the reinforcement or punishment

Shaping refers to the process of learning a complex response by first learning a number of simple responses leading up to the complex one.

Summary and Conclusion

Schedules of Reinforcement

Schedule of reinforcement	*Example*
Fixed Ratio	A student receives a reward after a fixed number of times they perform a desired behaviour (e.g. a merit every time they attempt an extension question)
Variable Ratio	A student receives a reward after a variable number of times they perform a desired behaviour
Fixed Interval	A student receives a reward after a fixed period of time in which they perform the desired behaviour(e.g. a merit for working hard for 5 minutes)
Variable Interval	A student receives a reward after a variable period of time in which they perform the desired behaviour

Summary and Conclusion

Primary and secondary reinforcers

Primary & Secondary Reinforcement

- Primary are necessary
  ex. Food

- Secondary – can be turned into primary
  Ex. Money or grades

Primary reinforcers are effective without any previous special training.

The ability of secondary reinforcers to influence the likelihood of response depends upon learning. Stimuli becomes conditioned by being paired with primary reinforcers.

Summary and Conclusion

Cognitive learning refers to changes in the way information is processed as a result of experience a person or animal has had.
e.g. Cognitive maps, latent learning, insight learning and imitation are described as examples of cognitive learning.

Cognitive process involved in learning

Other 2 Groups

e.g.
A students learns to tie shoelaces
1) Watching someone tie laces (**Selecting information**)
2) Understanding the movements they see (**Altering information**)
3) Think about high tightly to pull the loops (**elaborating**)
4) Remember the steps after practicing (**storing**)
5) Tie the shoes on their own without help (**retrieving**)