

Introduction to Psychology
Prof. Braj Bhushan
Department of Humanities and Social Sciences
Indian Institute of Technology, Kanpur

Lecture - 13
Learning Concepts and Applications
of Classical Conditioning

Now, that we have learnt how classical conditioning takes place. What we have done till now we have seen that bell food getting associated. (Refer Time: 00:30) experiment we saw sound and light getting paired with electric shock. What if what you call situation this association the SRC bond that we learned in one situation can that be extended to the other situation.

Remember the first lecture where we discussed while defining learning that it is a relatively stable change. If learning is a relatively stable change what would it lead to? It would lead to scenario where this SR bond repeatedly helps us arrive at a prospective decision much easily. We do not invest must time and come across most appropriate response. Given the fact that we know that in these types of situations these are what you call successful response patterns. Hence, we come to important concepts in classical conditioning. Two important concepts let us discuss and gradually we will move.

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Classical Conditioning

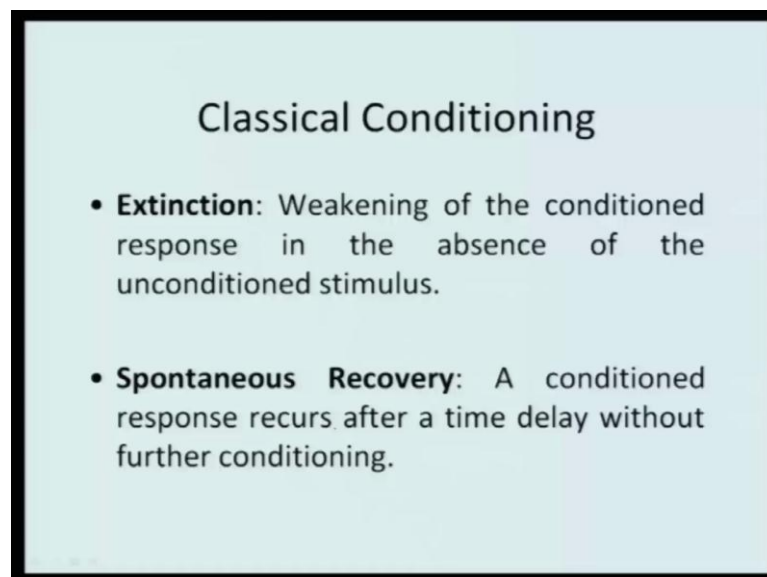
- **Generalization:** Tendency of a similar but new stimulus to elicit a response that is similar to the conditioned response.

- **Discrimination:** The process of learning to respond to certain stimuli and not to respond to others.

One generalization and two discrimination what would be generalization? A tendency of a similar but new stimulus to elicit a response that is similar to the conditioned response that is generalization. Say for example, the example we took in one of our lectures where the student will leave the seat, if the teacher comes into the class. And if this is extended not only to the teachers entering the class, but to all elderly people you have generalized it. So, what is it that is being generalized? Depending on the similarity the response is now generalized.

The reverse of it would be discrimination. In one case you are favorably responding and extending the response that is generalization. In discrimination it is basically the process of learning to respond to certain stimuli and not to respond to others. Take the same example, you have learnt to leave your chair and wish a teacher who enters the class and say instead of a teacher somebody else enters the class, somebody who has come for dusting enters the class and you immediately use your discrimination. You discriminate that although this is an adult may be the same age of that of the teacher, but because he or she is not my teacher therefore I do not have to leave my seat. This is discrimination.

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Classical Conditioning

- **Extinction:** Weakening of the conditioned response in the absence of the unconditioned stimulus.
- **Spontaneous Recovery:** A conditioned response recurs after a time delay without further conditioning.

Interesting thing that Pavlov also found in his research was two interesting things. One, what is called as extinction and other is spontaneous recovery. Now recollect the experiment. The dog in Pavlov's lab had learned to respond to the sound of the bell anticipating that every time that the bell is rung the food will definitively be presented.

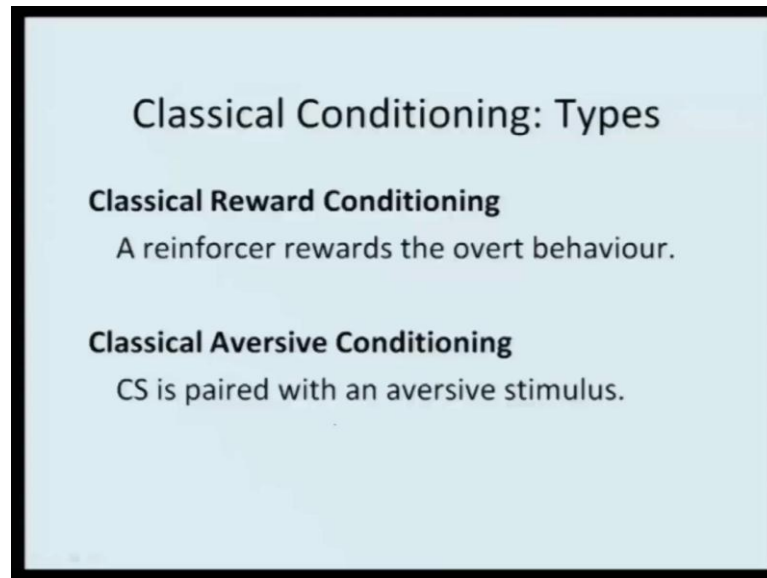
Now once this association was found and Pavlov stopped giving food to the dog and only generated the sounds from the bell, gradually what happened the amount of saliva that the dog was releasing which was being collected in the beaker started diminishing.

This means that that association which was formed and which was no longer influencing anticipation in the dog at every time that the sound will be rung food will definitely be represented it started becoming weaker and weaker. Once bell was rung but the food was not presented, twice, thrice, 10 times, 20 times and then you realize that gradually the SR bond which was initially very very strong it starts becoming weaker enough.

So, weakening of the condition responds because the unconditioned stimulus is now absent is what is called as Extinction, and Pavlov could find this in his experiment. But another interesting thing that he also observed was the fact that the dog which had forgotten to salivate on sound of the bell; could again you do it the same exercise of salivating on the sound of the bulb when the experiment was repeated for the next time. So, if in the initial trial the dog took a say for a instance 20 trials to learn to form the association in the next case the dog took substantially less number of trials; 8 9 19 trials. So, you reduce the total time taken to relearn what you had already learnt. And this is called as Spontaneous recovery. A conditioned response resurfaces after a time delay without further conditioning, without further demand at these SR resources should once again be found this is called as Spontaneous Recovery.

So, these were the important constructs and this was the first and of course one of the historical I should say mega theory in learning that Ivan Pavlov contributed. In terms of what you call the appraisal in terms of types you can say, how many types of classical conditioning you can think of. Again it has to do with the balancing; positive balancing, negative balancing.

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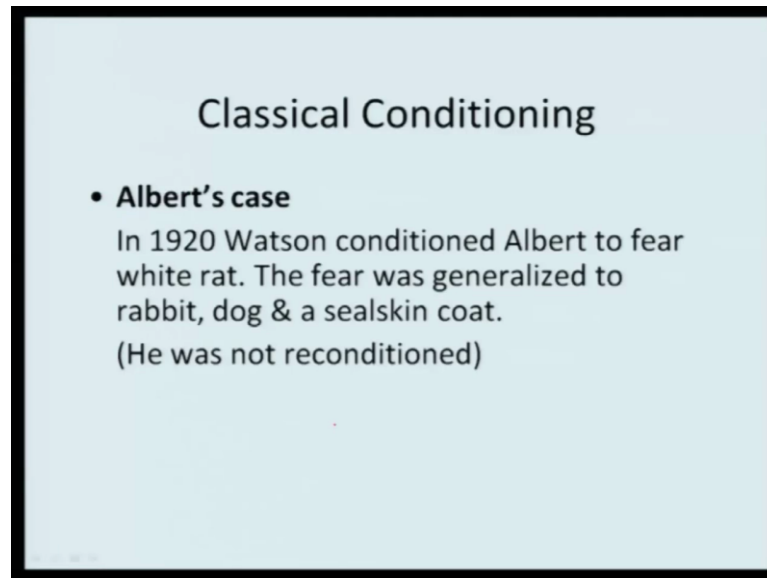


Classical conditioning can be divided into two types; two types of classical conditioning; classical reward conditioning and classical aversive conditioning. And because you can understand reward means you will be basically reinforcing the behavior. So, if you ask the dog to do a desired behavior and what you want the dog to do if the dog has done and you give food pallet you have enforce the dog. This is classical reward conditioning. So, if the student has they given the correct answer to the teacher and the teacher now praises the student, the student behavior has been reinforced this is called Classical Reward Conditioning.

What is classical aversive conditioning? This is basically the conditioned stimulus that is paired with aversive stimulus. So, if you receive a negative consequence that is the aversive conditioning. Reward then positively enforcement aversive will be negative report.

Two interesting cases, till now we have talked about only animal experimentations, two experiments are worth mentioning here.

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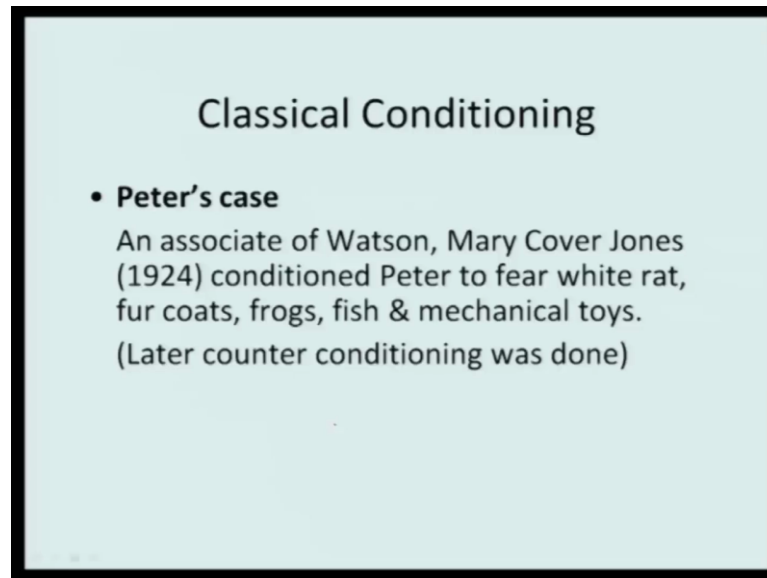
Classical Conditioning

- **Albert's case**
In 1920 Watson conditioned Albert to fear white rat. The fear was generalized to rabbit, dog & a sealskin coat.
(He was not reconditioned)

Watson in 1920 tried to condition human baby in Albert. And in all books of psychology will find Albert's case. Albert was basically no conditioned to fear white rats. So what actually happened was, Albert the small baby would crawl move to a soft toy and the moment Albert was about to hold the soft toy Watson would create a big uproaring sound in the lab. This was repeated couple of times and the human baby Albert started getting scared of that furry toy. The moment the furry toy would come there Albert would perhaps anticipate that now definitely this would result into that frightening sound. And this very fear that was initially for furry white rat got even generalized to rabbit, dogs and sealskin coats.

Remember it is a very low experiment ethical considerations were not so important in those days and Albert was not reconditioned after the experimentation. But what Watson was able to prove using Albert's case was that see even in human beings also you can induce certain types of learning using classical conditioning module.

(Refer Slide Time: 09:17)



Classical Conditioning


- **Peter's case**
An associate of Watson, Mary Cover Jones (1924) conditioned Peter to fear white rat, fur coats, frogs, fish & mechanical toys.
(Later counter conditioning was done)

One of the associates of Watson, Mary Jones in 1924, what this team did was they take another boy named Peter and Peter was basically made to fear white rats, fur coats, frogs, fishes and mechanical toys. But then this was an experiment which went one step ahead of Watsons experiment, and Peter was later counter conditioned.

And it was this success of counter conditioning which later on brought a big change even in clinical psychology in terms of intervention that all learnt behavior. If you have conditioned somebody you can recondition and you can decondition. So, in classical conditioning the entire process of behavior modification is based on this. And the credit goes to the experiments done by Watsons, Mary Jones, and all their associates.

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Thorndike's Law of Effect

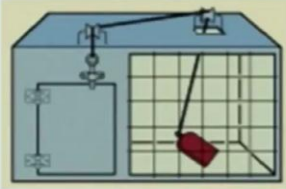


- At about the same time when Pavlov was experimenting on dog, E.L. Thorndike was conducting research on cats in puzzle box.

Around the same time when Pavlov was doing experiment on dog E L Thorndike was no conducting similar type of research using cats and this was being done in a puzzle box.

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Thorndike's Law of Effect

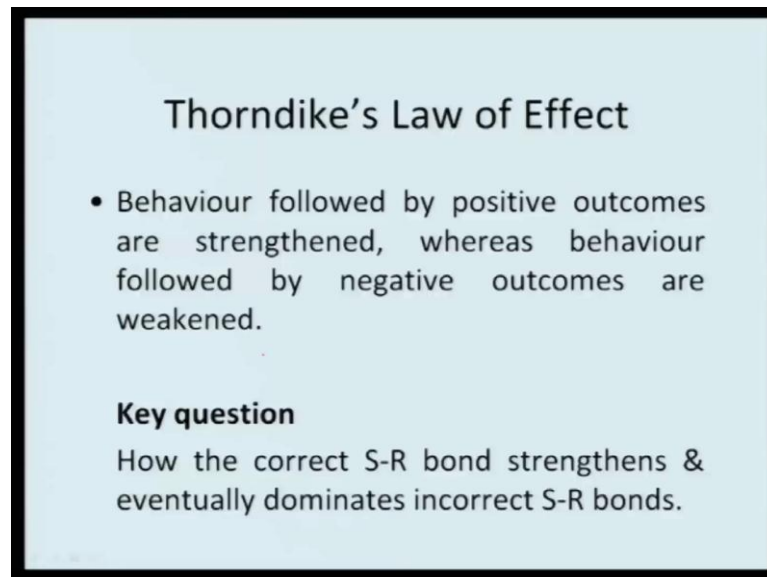


- At about the same time when Pavlov was experimenting on dog, E.L. Thorndike was conducting research on cats in puzzle box.

Now this was the puzzle box. The mechanism was very very simple. The mechanism was that a cat was put here in the cage, the cat was suppose to press this liver and the moment this liver will be pressed this board will flung open and the cat can come out. Two simple an experiment, but the cat did not know that it was supposed to press the lever.

So, accidentally while making all types of random jug movement the cat accidentally happened to press the lever. A fish was kept outside this cage, cat will press the lever, the door will flung open, the cat would come out eat the fish and this is how the experiment took place.

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Thorndike's Law of Effect

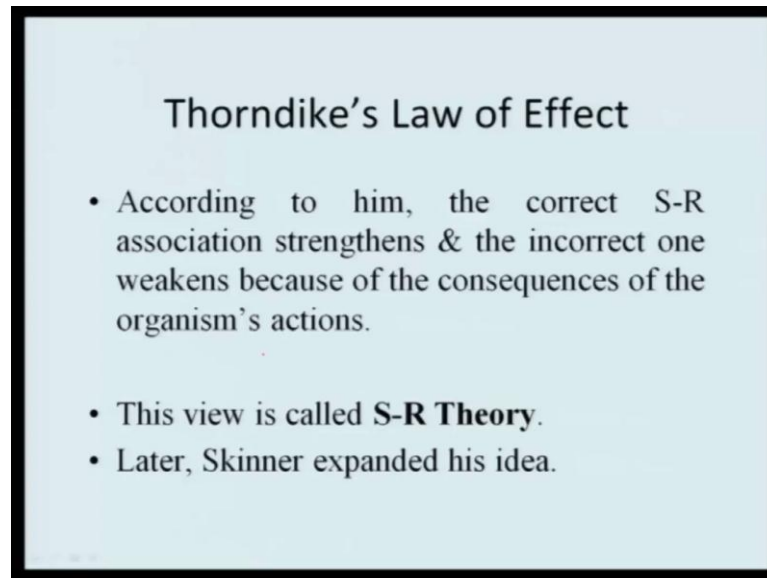
- Behaviour followed by positive outcomes are strengthened, whereas behaviour followed by negative outcomes are weakened.

Key question
How the correct S-R bond strengthens & eventually dominates incorrect S-R bonds.

But then what was being demonstrated basically was that behavior always follows a positive outcome, and behavior that is followed by positive outcomes is strengthened, whereas behavior which is followed by a negative outcome is not strengthened. Random movement leading to no consequence, but pressing of lever allows the door of the case to get open this is what the cat wanted. The cat was no attracted towards the fish kept out of the cage and it was this desired behavior that required the cat to come out of the cage.

Now the key question is that how the correct SR bond strengthens and eventually dominates the incorrect SR bonds. So, stimulus response associations will we formed if I have learnt an incorrect association, how does correction take place.

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Thorndike's Law of Effect

- According to him, the correct S-R association strengthens & the incorrect one weakens because of the consequences of the organism's actions.
- This view is called **S-R Theory**.
- Later, Skinner expanded his idea.

Now according to Thorndike the correct stimulus responses association actually strengthens and the incorrect ones become weaker enough because of the consequence of the action. If I have not learned how to respond appropriately in a given situation, every time I repeat my inappropriate behavior I do not receive a positive feedback from the environment. And this absence of feedback from the environment gives me a sense that this association, the behavior that I am demonstrating is not appropriate.

Whereas, if I change it to make it appropriate enough then the feedback that is given to me is very positive. And because I receive a positive feedback for the new SR bond this bond becomes stronger enough, and the bond that was initially learnt by me becomes weaker enough. And this is this new this is basically now called as the SR Theory; Stimulus Response Theory. Later on it was B F Skinner who expanded this idea of Stimulus Response Theory. And he came forward with again another mega theory in learning what is called as operant conditioning.

In the next lecture we would be now exclusively talking about Skinner's experimentation. And a new set of conditioning that he proposed what was what is popularly called as operant conditioning or instrumental conditioning.