Great Experiments in Psychology
Professor Rajlakshmi Guha
Centre for Educational Technology
Indian Institute of Technology Kharagpur
Module 03
Lecture No 11
Case Studies and Experiments in Clinical and Health Psychology

Hello and welcome back, today we are getting into the third week of Great experiment in psychology and this week we shall focus on clinical and health psychology. So there are as I told you earlier there are just too many important experiments and case studies that have happened in psychology over the century and beyond, but it is very tough for me to select the cases and specially the case studies and clinical and health psychology, so have just selected some of them focusing on different aspects of clinical and health psychology and today in today's lecture we are going to focus on conditioned emotional reaction.

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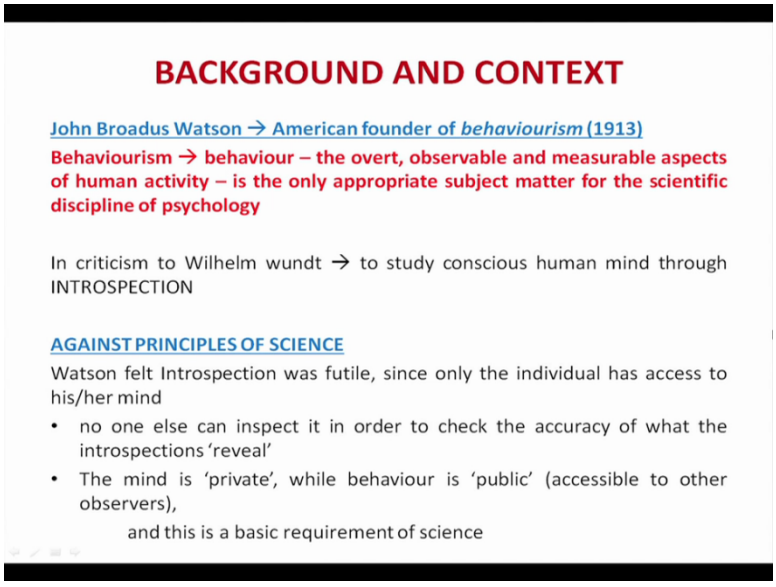

This is the major study that was done by Watson and Rayner, J B Watson being the father of experimental behavioural psychology and this was published in 1920 in the Journal of experimental psychology. Now, many of you have already heard of J B Watson and he is known for his work on behaviourism and he had written behavioural manifesto and he is known to be American founder of behaviourism in 1913. And according to Watson he believed that behaviour should be the ultimate discipline matter a subject matter of the for the discipline of psychology and behaviour, so what is behaviour, behaviour is overt, observable and measurable aspect of human activity. So this was in direct contrast to what William Wundt in Germany was trying to study.

So we have seen earlier at Wundt's major scope of psychology was focused on conscious human mind through introspection. But J B Watson was a very verbal critic of Wundt's theory especially introspection and he believed that this was introspection was basically against the principle of science. One of the reasons being that he felt Watson felt that introspection was futile, since only the that very individual who is introspective has access to that information that he receives through introspection. So the individual only has access to his or her mind and nobody else can check the accuracy of introspection unless the individual himself reveals or herself reveals what he was undergoing and this is private.

So behaviour on the other hand is public, so according to Watson that if we are talking about science, then it should be expressed and it should be studied by others as well. So it cannot be limited to an individual, so it should be accessible to other observers and this being the basic requirement of science, introspection did not meet the basic tenet of being a part of a scientific discipline and as we have spoken about earlier, psychology has emerged into a scientific discipline. So according to J B Watson introspection had no role to play in psychology as a science.

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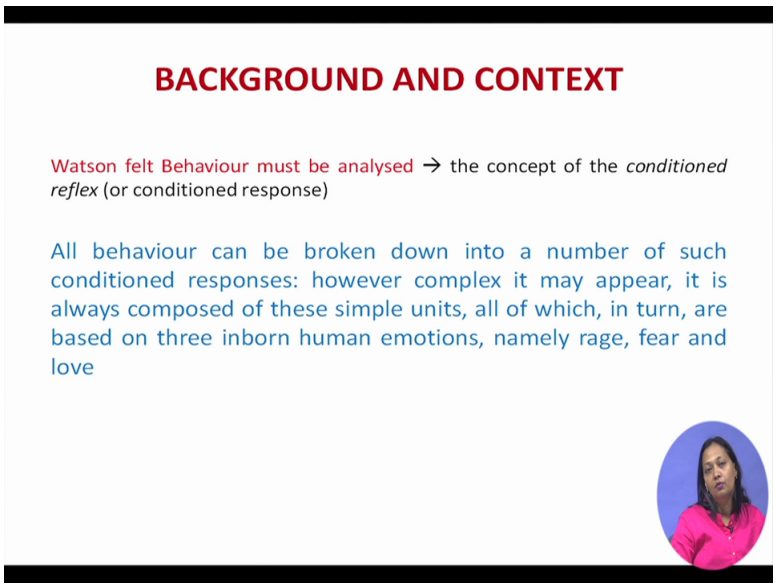

So he focused on behaviour and Watson felt that behaviour must be analysed and this is where he focused on for analysing behaviour he refocused on condition reflects or condition responses and he felt that all behaviour can be broken down in to a number of condition responses. However complex may it appear, it is always composed of these simple units all of which in turn are based on three inborn human emotions.

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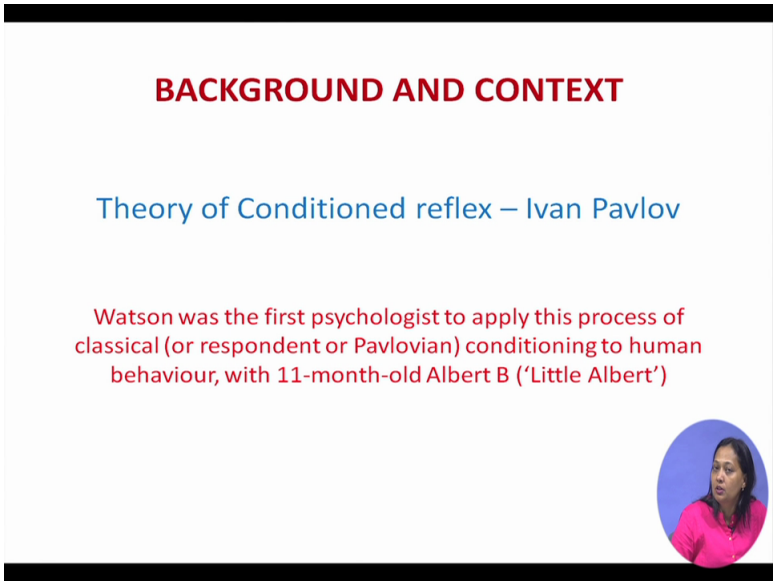

So he spoke of the three major emotions being range, fear and love and this actually when you talking about the theory of condition reflects this was given by Ivan Pavlov he was a Russian physiologist in 1904 and Watson was really influenced by this theory impressed and influenced by this theory and he was the first psychologist to apply this process of classical conditioning or respondent or Pavlovian conditioning as it is called to human behaviour and he did this through experimentation on a on 11 month old child name Little Albert.

So basically his name was Albert B and as we get through Watson's cases and reports on Albert he has been mentioned as little Albert. Now when we are talking I need to tell you a little about Ivan Pavlov and his experiments, most of you may be similar about with it your classroom study of learning may be in your school days. But I will just for little debriefing let us talk about what Pavlov was saying. So Pavlov was actually working on salivation responses of dogs and there he chanced upon this behaviour pattern of dogs and he saw that if the stimulus when the dog was hungry he would the response in behaviour will be salivation.

But if there was the sound of a bell which was produced when the dog was hungry then gradually that sound of the bell would be paired with that hunger and then it would also produce salivation and with time if the only the sound of the bell, so basically when the dog is hungry the food is given and that brings in salivation so when the food and a hungry dog when the food is produced with the sound of a bell that brings in salivation. So gradually with the couple of pairings with the food and the bell, it was seen that the dog would salive it only at the sound of the bell.

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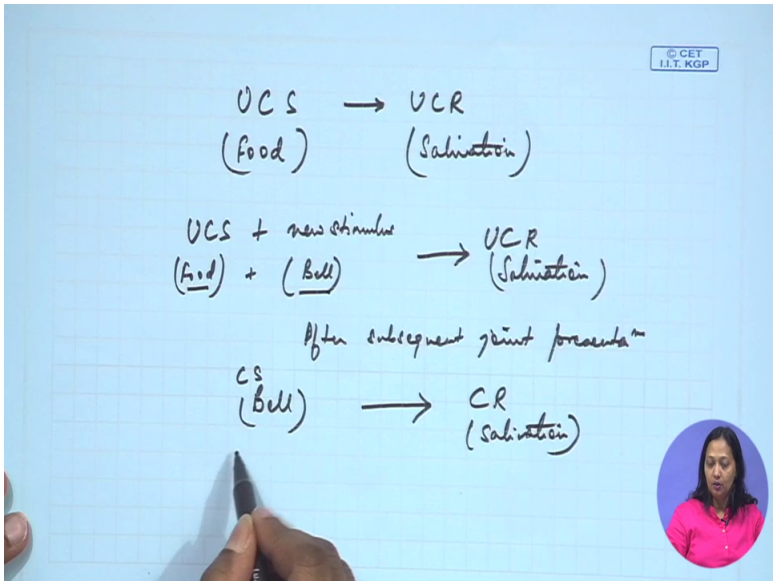

So now if we just put Pavlov's theory (())(6:35) we see that the unconditioned stimulus produces an unconditioned response, so here for a hungry dog it is the food and this produces the salivation. Now, the unconditioned stimulus plus the new stimulus or the novel stimulus in this case, so here is the food that is the unconditioned stimulus why unconditioned, because by itself the food can produce salivation for a hungry dog. So food plus the sound of the bell that is the new stimulus was producing the condition response. So here also initially you get the salivation. So, after a couple of pairings so after subsequent joint presentations it was seen that only the bell so which is the conditioned stimulus is producing the conditioned response that is salivation.

So only the bell is being able to produce the salivation so what has happened the bell and the food have been paired together and that is why the attribute of the food to be able to produce salivation has transferred to the bell and now the bell can actually produce salivation. Now this was Pavlov's experiment. Now Watson tried to show that it is the same way that human being also learn and as I mentioned just before that, he tried this classical conditioning with human behaviour. So basically he tried to see it through a child whether the child was also learning to conditioned to learning something through conditioned behaviour.

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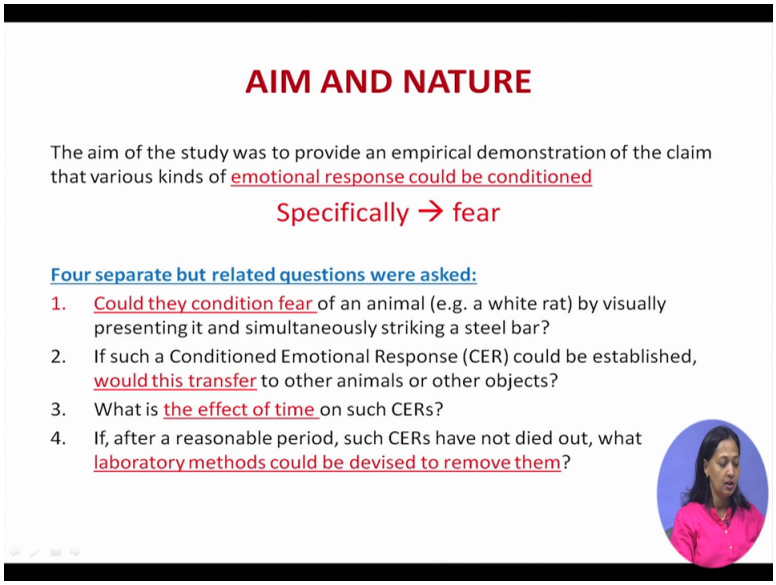

So here he chose little Albert and what he tried to condition was he tried to see whether fear which is an emotion could be conditioned. So there were four primary questions that he was asking himself during the study. Number one is could they conditioned fear of an animal that is a white rat by visually presenting it and simultaneously striking a steel bar? If such a conditioned emotional response could be established, would this transfer to other animals or other objects?

So basically could the conditioning of fear be transferred to other animals as well? So could actually fear be induced in a white in a child the fear of a rat be introduced induced in a child and after that could that fear of the rat be transferred to other objects or animals and what is the effect of time on such condition emotional responses? So that means how long is that conditioning going to learn last, so how long is that learning going to last? And if, after reasonable period, such conditioned emotional responses have not died down, what laboratory methods could be diverse to remove them?

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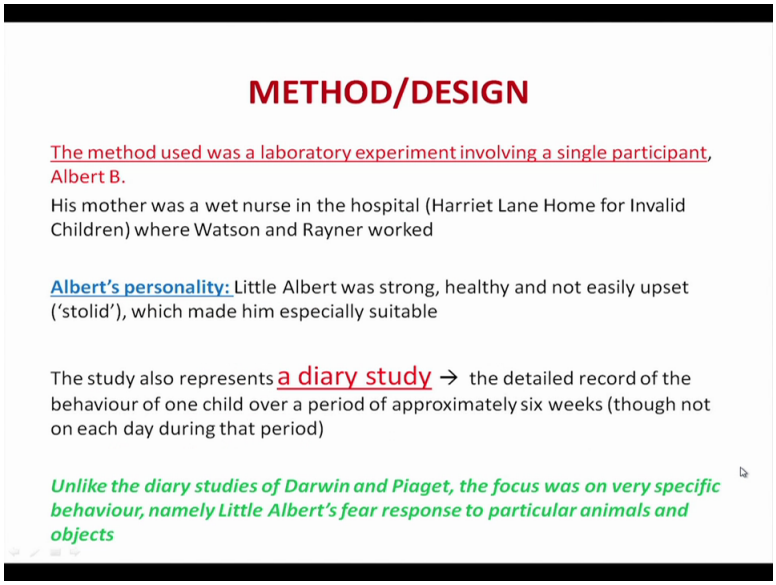

So you see the final question is also trying to answer that if anybody has an emotional response of fear and we assume that fear has been learned then what are the ways of actually removing that fear. So now getting to the experimental design as I mentioned that this experiment was conduct on only one subject the subject was 11 month old child named Albert B. His mother how he came happened to be a subject was, his mother was a vet nurse in the hospital where Watson and Rayner worked and Alberta talking about Albert's personality Albert was a very strong, healthy child and especially his reports that is been phlegmatic that is he was not easily upset by anything he was a calm child and which made him a specially suitable for this experiment.

This study also represents a diary study, now what is a diary study? It is a detailed record of the behaviour of the child over a period of approximately 6 weeks not of course daily but it was followed whenever the experimentation was done all the records were kept on hold. So unlike the diary's study of Darwin and Piaget, the focus was on the very specific behaviour, so basically about the induced fear and namely little Albert's fear response to particular animals and objects.

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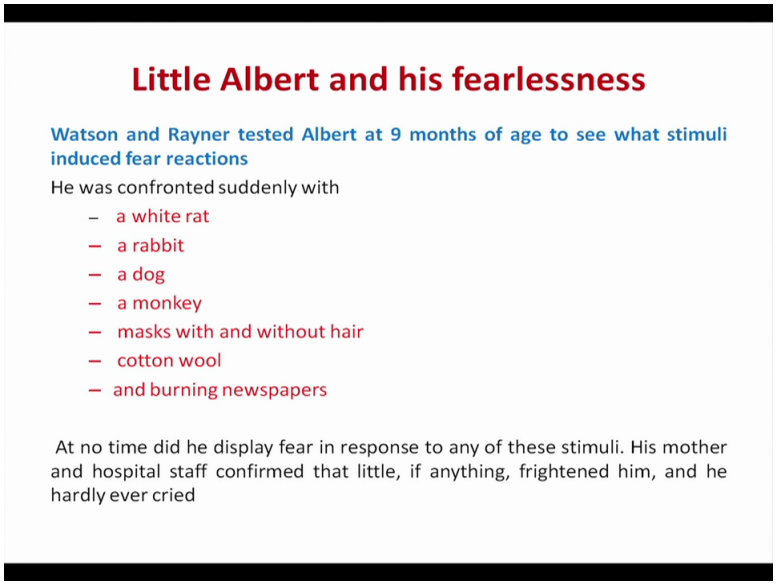

So as I mentioned that it was not a diary study of everyday affairs of Little Albert's life, but it was primarily related to his reactions to specific animals and objects that were related to that was related to the induced fear. So let us see how Albert was as an individual. So little Albert who was nine months of age then what he whenever he was confronted he was actually confronted with a white rat, a rabbit, a dog, a monkey, mask with and without hair, cotton wool and burning newspapers.

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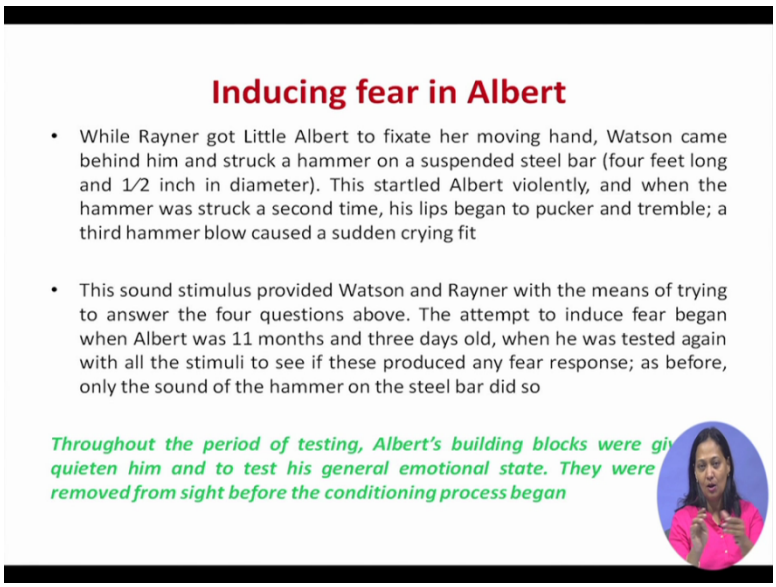

So it was seen that Albert showed no response of fear at all to any of this stimuli and his mother and other hospital staff also confirmed that Albert was hardly frightened by anything and he hardly ever cried. So that made him more suitable for the experiment, so what did

Watson and Rayner do to induced fear in Albert? So while Rayner got little Albert to fixate her moving hand so she kept moving her hand and he was supposed to and Albert was made to hold it and keep it still. Watson came behind the child and suddenly struck a hammer on a suspended steel bar.

So what is it doing? He is creating a loud sound and this startled Albert violently, mind you he is a 9 month old child, okay and when the hammer was struck a second time his lips began to pucker and tremble and after the third blow he started to cry. This sounds stimulus provided Watson and Rayner with the means of trying to answer the 4 questions, so what were they trying to do? So they were trying to induce the fear of the loud sound to other animals and objects. Now it is we already know that the things Albert is not afraid of and as if I just go back to the list there are so many things that Albert Little Albert is not afraid of.

So first they found out what he was actually afraid of, so we saw that he was Albert was afraid of the loud sound. Now the next, so inducing fear to induced fear the experiment started when Albert was 11 months old and basically precisely 11 months and 3 years old and on this time on that day he was tested again on the same stimuli and see if he was actually afraid of any of these stimuli, so all that we have all the animals and things we have mentioned before objects that we mentioned before and it was seen that little Albert was only afraid of the loud sound produced by the hammer on the steel bar. And throughout this period mind you Albert was a quiet and down or soothened by his building blocks which were given to him to quieten him and to test his general emotions emotional state.

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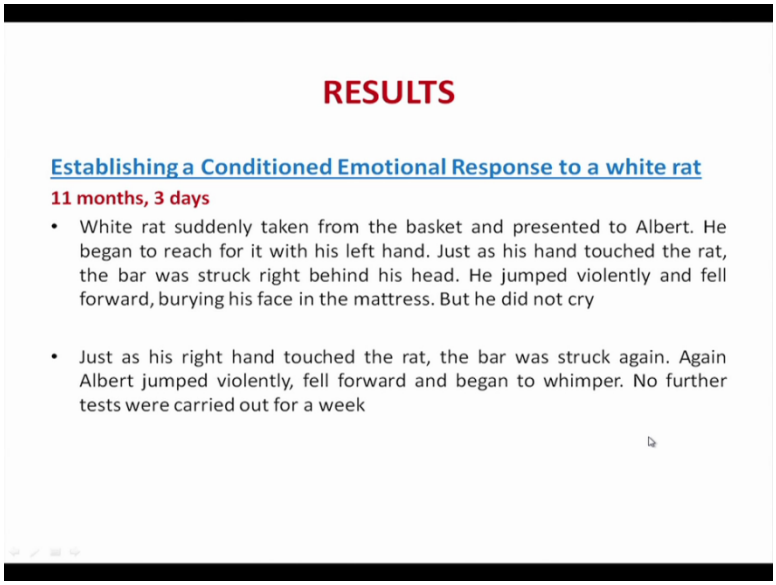

They were always removed from sight whenever the experiment began, okay so that was his way of calming down. So when he was given the building blocks as you will see he would calm down gradually. So now what were they doing, it was… So the results show that a conditioned… they were trying to establish a conditioned emotional response to a white rat, so first thing was done with a white rat, so the conditioned emotional response of fear. So what are they trying to do? So let us just do this graphical representation again, so in this case the unconditioned stimulus that will produce and unconditioned response so it is what produces? So it is the loud sound.

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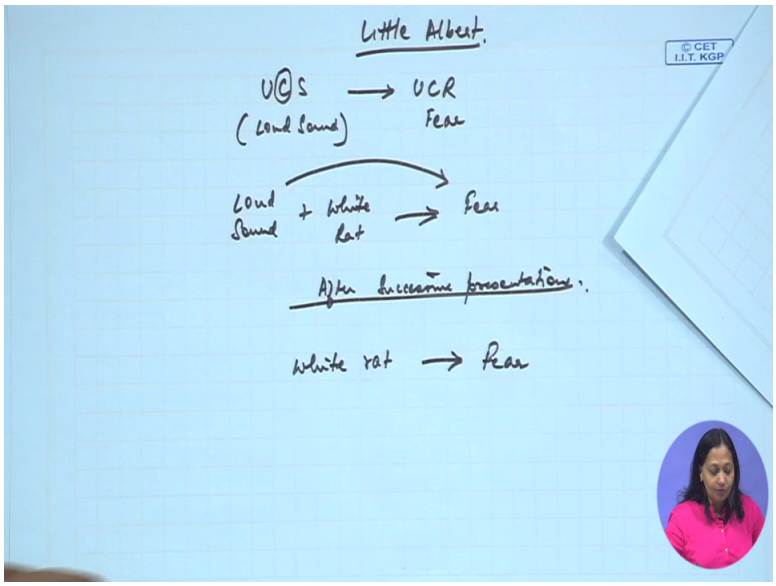

The loud sound, naturally so it need not be learned, so if you just substitute the word conditioning with learning will see that it is unlearned stimulus that produces an unlearned response. So the loud sound produces the response of fear in Albert in little Albert. So then the loud sound was paired with a white rat and this produced fear. So now initially the fear is being produced by the sound but not by the rat, okay as we know that he preferred rats after he preferred all sorts of animal he was not really afraid of anything. After successive presentations, so after successive presentations Watson and Rayner wish to see what would happen? And they actually saw at the white rat also induced created fear, so let us see how they did that, okay.

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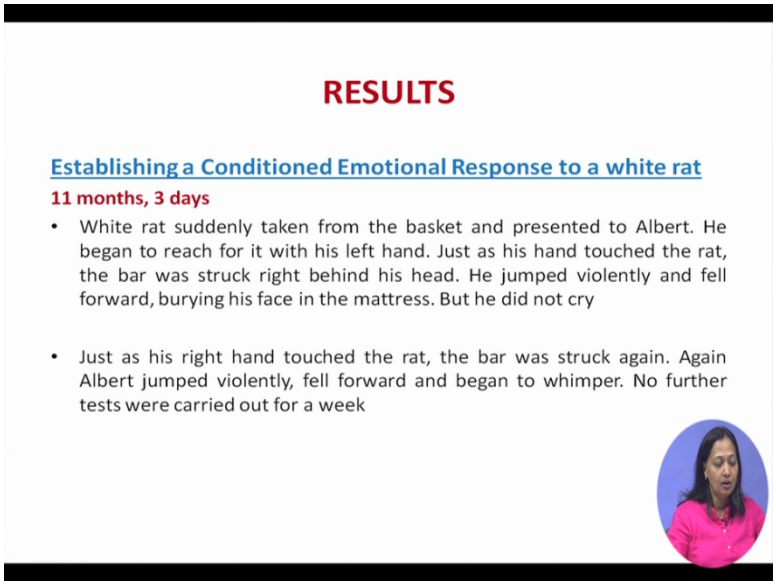

So first on 11th months and 3 days when the white rat suddenly was taken from the basket and given to Albert and he began to reach for it with his left hand, just as he touched the rat the bar was struck behind right behind his head, so basically the loud sound was produced. He jumped violently and fell forward, burying his face in the mattress. But he did not cry. So just as his right hand touch the rat again the bar was struck again and again Albert jumped violently, fell forward and began to whimper. Now no test was carried out for a week, so this was the first week.

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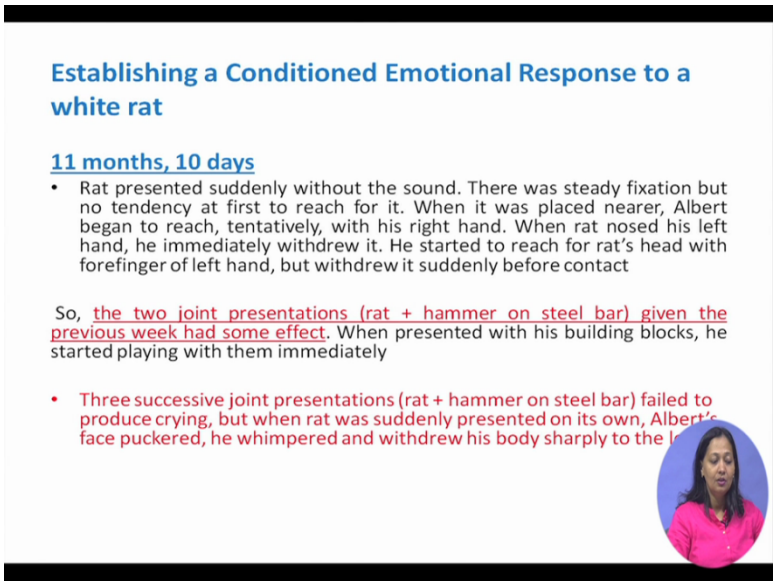

So in the next week so that is 11 month 10 days, so again a rat was present sudden presented suddenly but without the sound and already you see how Albert responds, Albert looked at it

steadily but did not try to reach it, so see just by the two presentations a week before Albert was cautious and mind you, he is only 11 months old, 11 months 10 days, so he had whatever he had experienced a week before, so that is on 11th month 3 days he remembers it and when he was presented with the white rat, he looked at it cautiously steadily but did not reach for it. But when it was placed near him he tentatively reached it with his right hand and when the rat nosed his left-hand, he immediately withdrew it.

So when the rat came forward he immediately withdrew it, but again sees there is ambivalence in the response. He started to reach for the rat's head with the forefinger of the left-hand, but withdrew it suddenly before contact, so there is an amount of suspicion or cautions at was already building up in the small child. So after the two joint presentations given the previous it was seen that, that presentation was actually having some effect and when he was presented with his building blocks he started playing with them immediately.

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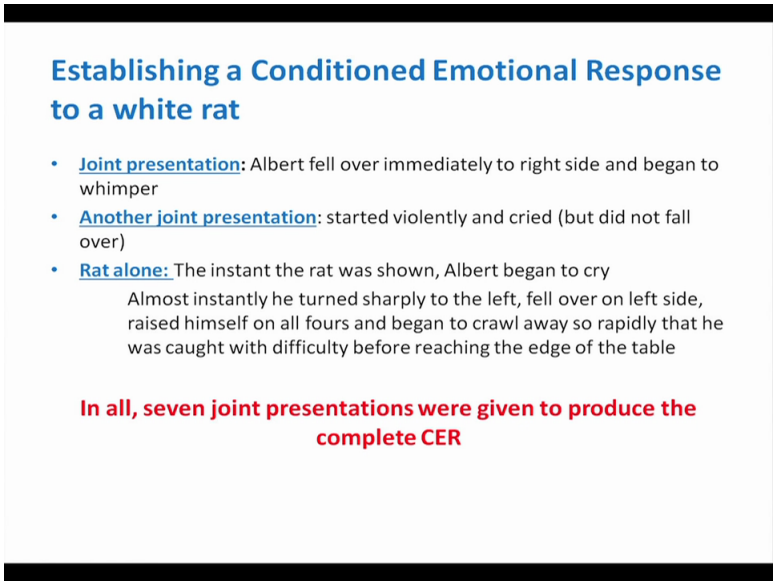

So 3 successive joint presentations the rat and plus hammer on steel bar failing to produce crying but when rat was suddenly presented on its own Albert's face puckered, he whimpered and withdrew his body sharply to the left. So, though Albert was not crying as he would do to the sound loud sound, but after three successive presentations he was already cautious of the rat and he was trying to avoid the rat. Again when the joint presentation was made that is the rat and the loud sound, Albert fell over immediately to the right side and began to whimper and another joint presentation he started violently and cried.

When the rat alone was presented, now the sound was removed and only the rat was presented, the moment the rat was presented, Albert started to cry and almost instantly he turned sharply to the left fell over on the side and raised himself and all fours and crawl towards crawl away almost by reaching the edge of the table. So basically it was seen that in all, seven joint presentations were required to create the conditional emotional response of fear.

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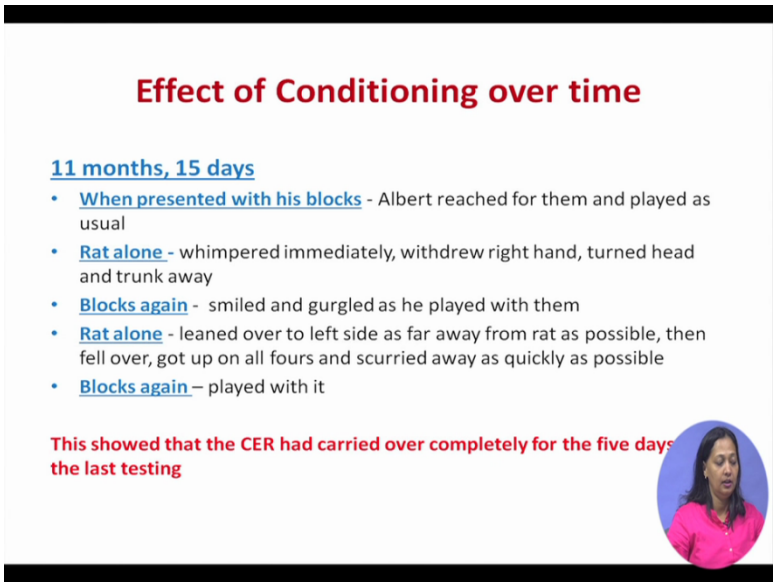

Now the next question to answer was whether what happened to the conditioning overtime, so once a response of fear has being induced, then does it continue overtime? So next it is, Albert was presented with the blocks, the next set of experimentation happened in on 11th month 15 days and when he was presented with the blocks, he played with them as his usual way. When the rat alone was presented he whimpered withdrew the right hand, turned his head and trunk away, so he moved away from it. When the blocks again were presented, he smiled and played with them.

Again when the rat was presented he leaned over to the left side as far away from the rat as possible and then fell over and hurried away, again when the blocks were presented he played with it. So for the next the previous experiment was carried out on 11th months 10 days and we see after 5 days that the conditioning effect still carried over and it was still present, though probably the intensity has gradually reduced. Albert was not trying anymore when he saw the rat alone, but he was still avoiding it and he was running away from it.

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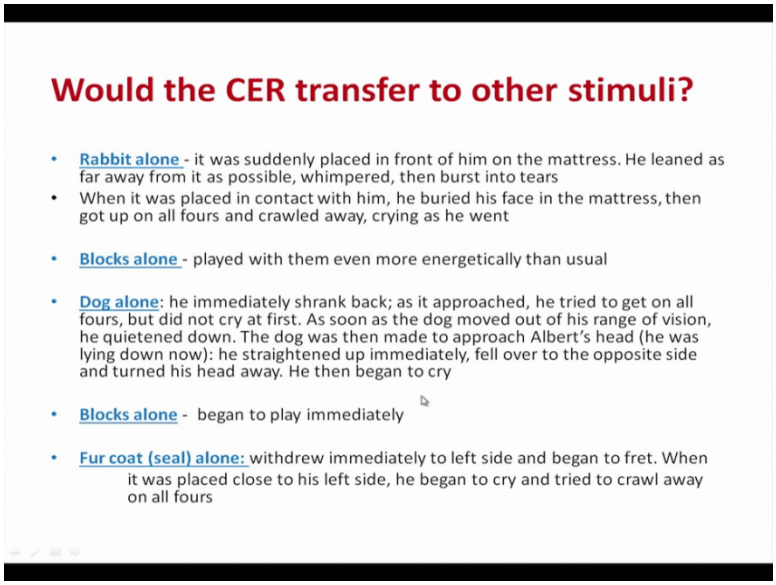

Now would the condition emotional response transferred to other stimuli? Now the Albert was presented with a rabbit, so mind you we know that he was not afraid previously before the experiment began he was not afraid of any of these animals or objects, now when he was presented with a rabbit after 11 months 15 days and later he was it was seen that he leaned far away from it as possible and whimper and then burst into tears. When it was placed in contact with him, he buried his face on the mattress and got up on all fours crawl away and crying as he went. So it had actually been transferred to the fear of the white rat had been transferred to the rabbit.

Now when he was presented with his favourite blocks again he played with them more energetically than usual. Next he was presented with a dog and mind you there is no paired presentation with a loud sound, but even when it was when he was presented with the dog alone, he shrank back as it approached and tried to run away crawl away but did not cry at first, but as soon as the dog moved out of his vision he quietened down so just the visual effect created quite an impact on him. The dog was then made to approach Albert's head and he straighten up immediately and turn his head away began to cry, so the moment he saw dog he was again afraid and started to cry.

But the moment again when the blocks were presented to him alone, he began to play with it. Now after that a fur coat was presented and he withdrew immediately from it and began to fret. When it was placed close to his left side, he began to crawl away and cry. So as we see that he was afraid the pairing was done with the white rat, but it transferred to the rabbit, to

the dog and also to the fur coat, so anything that was furry, Albert has generalized it the fear of the rat to all these other furry animals. Now after 11 months 20 days, so we see this was 11 months 15 days and 11 months 20 days, what happens is, when he is presented with the block alone he played with them as usual.

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When he was presented with the rat alone, he withdrew from it but now there is no crying, so you see as time passed the intensity also of fear also reduce but he followed it cautiously with his eyes. The responses as I mention was much weaker than the previous week and again it was the since it had weakened down, Watson and Rayner decided to freshen up the memory and there was another loud bang and immediately the rat alone basically the conditioned emotional response became stronger so that is he started avoiding it more but still there was no crying and thereafter when the rat was presented over alone he fell over on all over fours when after the freshened up presentation so means when it was presented jointly after that he started crawling away from it.

When the rabbit alone was present he moved as far away from it, but whenever the blocks were given to him, he began to play with it immediately. So now you will see that he has not been really disturbed so he has not generalised little Albert though he is such a small child, he has not generalised his fear response to everything around him. So he has not generalised it to the blocks that he was playing with, he had only related the fear of the loud sound he has transferred it to the white rat as it was being paired and then transferred it to the all the furry animals thereby, so that is how he was probably thinking that these are together.

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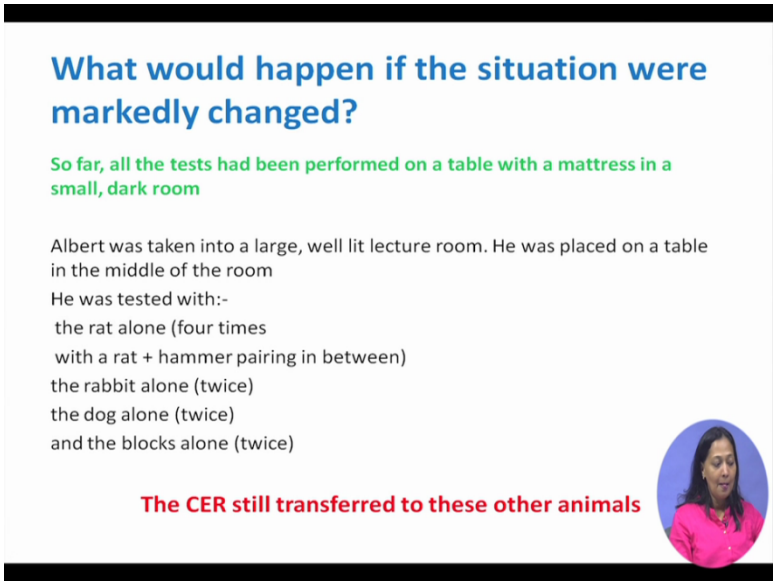

Now thereafter we see that all these tests were conducted on a in dark rooms, small darkroom on the table with a mattress. Now what would happen if the situation were markedly changed? So would the condition emotional response still be present, so that is whether fear towards these objects would be present in another place. Watson and Rayner wish to check it out and Albert was taken into a large, well led lecture room and he was placed on a table in the middle of the room, he was tested with the rat and alone four times with the rat and hammer, the rabbit alone twice, the dog alone and the blocks alone.

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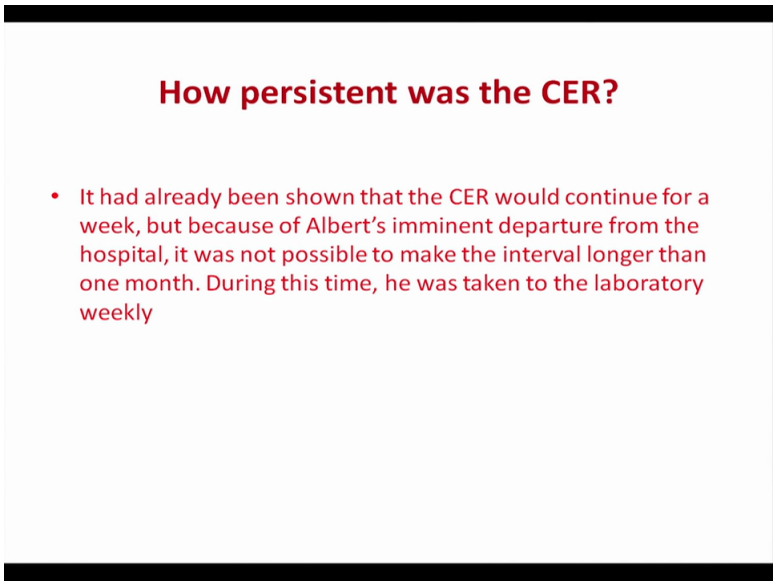

The conditioned response emotional response still transferred to these other animals. So when they were present in a different room, the fear still remain. So we see that even when the

situation is changed, the fear of the objects as not change, so it still remained. Now how persistent was the conditioned emotional response? We have seen that previously that the intensity would wane away after a week but it would not completely be gone. Now, it was shown that if the conditioned response from the previous two weeks that it still remained. But further studies on Albert to see how long it remained was not possible by Watson and Rayner as Albert was removed from the hospital and they was not available for the research any further.

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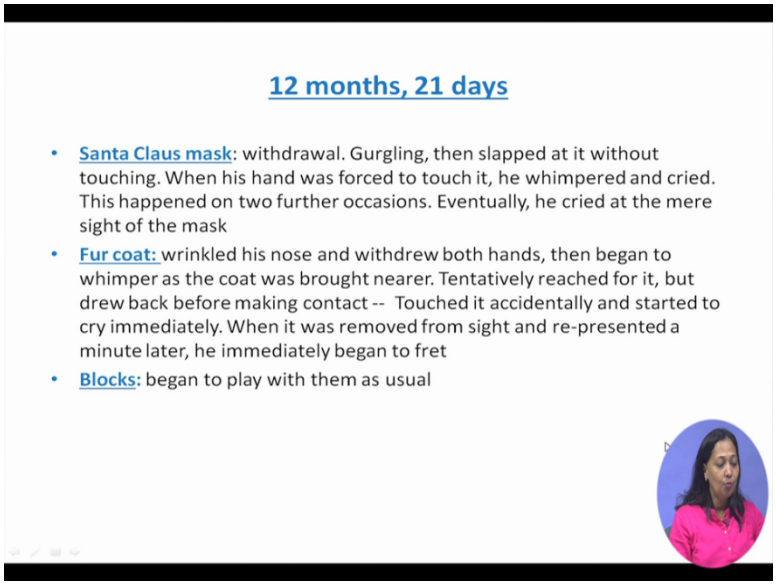

So this time during this time he was taken to the laboratory weekly, so thereafter a long time long-term longitudinal study following the persistence of the fear response could not be done by Watson and Rayner. But later on he presented after a month so that is basically he would come after every week and on 12 month 21 days we see that when a Santa Claus mask was produced in front of Albert, mind you he was never afraid of Mask with or without hair, but this time on when he was 12 months 21 days, when a Santa Claus mask was produced, he (()) (29:25) immediate withdrawal there was gurgling but he slapped it without touching and slapped at it without touching and his hand when his hand was forced to touch it, he started crying and this happened on 2 further occasions. Eventually, he started crying at the sight of the mask.

So you see from furry animals it has also shifted to a furry object, something that was perceived as a furry object and the mask so it had transferred to the mask. Now with the fur coat was seeing that he withdrew both his hands, then began to whimper as it the coat was brought nearer and when it touched him accidentally he started crying. So when but when the

blocks were presented to him he played with them as usual. So now on 12 months 21 days we see that when the rat was produced, he allowed it to crawl towards him without withdrawing he sat very still and fixated it intently, but gradually when it was placed on his arms he withdrew his body and began to fret, but if you just noticed that he did not start to cry.

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And when again with the blogs he started playing with them. For the rabbit initially there was no avoidance what with time when it was placed on his lap, he began to cry. With the dog again, so you see when the Albert kept cautiously looking at it, but did not when the dog was motionless, he had no problems with it. So what we are actually seeing is that which time the intensity of the stimulus is being weekend. So as I mention that the longitudinal study with little Albert not be continued as he was removed and only for a couple of days, he was for the next one month, he could be brought on a weekly interval.

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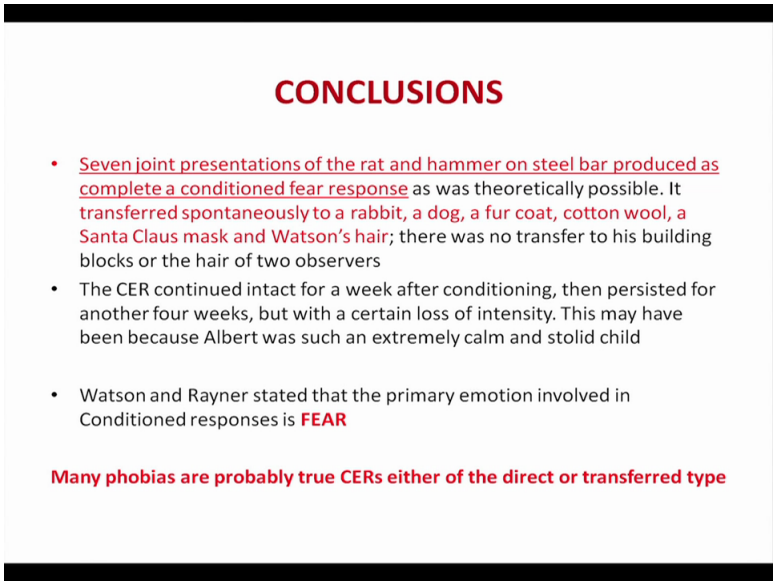

So the experiment had to be ended there and the conclusion that Watson and Rayner withdrew from it, were that it conditioned fear response could be produced on a child at on a human being that is and it could easily be transferred to a Rabbit, to a dog, a fur coat, cotton wool, Santa Claus mask and also Watson's hair, but there was no transfer to the child's building block or the hair of other two observers, so it was completely dependent on how the child perceive as you know similar to the object that he was initially induced fear with. So then the conditional emotional response continued intact for a week after conditioning, then persisted for another four weeks, but with a certain loss of intensity.

This may have been one of the reasons Watson and Rayner thought was because Albert was a very stolid and calm child. So probably with other individuals, the response would not lose intensity, the fear response would not lose intensity so quickly and Watson and Rayner as I mentioned earlier showed that fear could be conditioned and this is the way later on it was seen that phobias are created and phobias are either true condition emotional responses or they are directly or transferred to you know to different objects. And they showed, so this study basically showed that emotions are actually learned.

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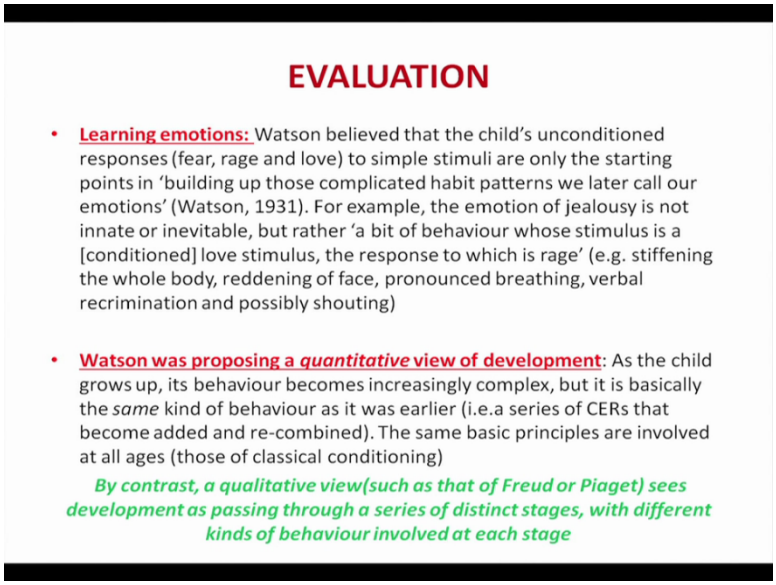

So basically you conditioned it with some other neutral response, neutral stimulus and that is how you create an emotional response of say fear or love and with time these become more complex and this gradually that is how this we would that would answer for how the emotions are created and as the child grows up with the increasing complexity of behaviours, the other conditions emotional responses become added and combined with it and he says that all our emotions all our behaviours are learned.

This is a quantitative view towards you know human psychology as compared to the qualitative view that was given by Freud and Piaget and where there saw development was in a series of different stages and phases and they were different kinds of behaviour that were related to a particular stage. Watson the father of behaviourism saw it in a different way, Watson thought that these were actually whatever we are learning with time are basically conditioned responses and that is, so all our behaviours or all our expression or all our the our personality is basically learned behaviour, so as compared to Freud and Piaget, Watson's theory spoke about a quantitative view while this was a qualitative one.

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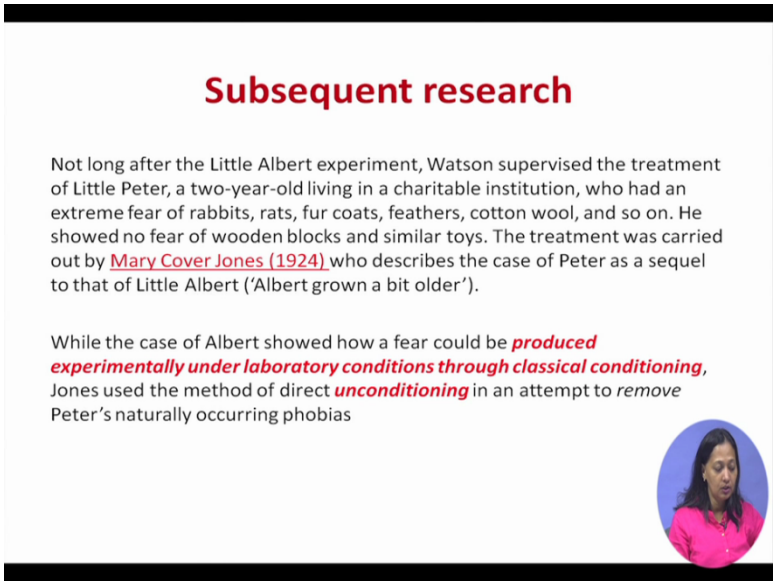

After Watson's research, another research was carried out by Mary Cover Jones in 1924 and primarily it was monitored by Watson and this was on removing the fear from another child and this was on Little Peter and Little basically Little Peter had fear on all the furry animals that and it seems that as if he is just another as Cover Jones explain it as if it was Albert grown a bit older and he had a fear of all the other animals furry animals that was actually induced in Albert and this child, so basically Mary Cover Jones showed that fear, it could be unlearned with the presentation of the feared object with the pleasant stimuli.

So earlier the neutral object or in this case the rat, the rabbit and the Santa Claus mask all these later on, it was transferred to Santa Claus mask but initially the neutral object the rat was paired with the fear stimulus and to un-condition a fear, so the stimulus had to be present the stimulus had to be present with the pleasant stimuli, so basically the feared object this case the rat to be produced with a pleasant stimuli and again Mary cover Jones showed that this could be done and she published a paper about the experiment stated a laboratory study of fear the case of Peter Little Peter that is in 1924 and later on it was seen that this study actually led to the way and this use actually Wolpe in 1958 showed that this is the way that phobias can be treated with.

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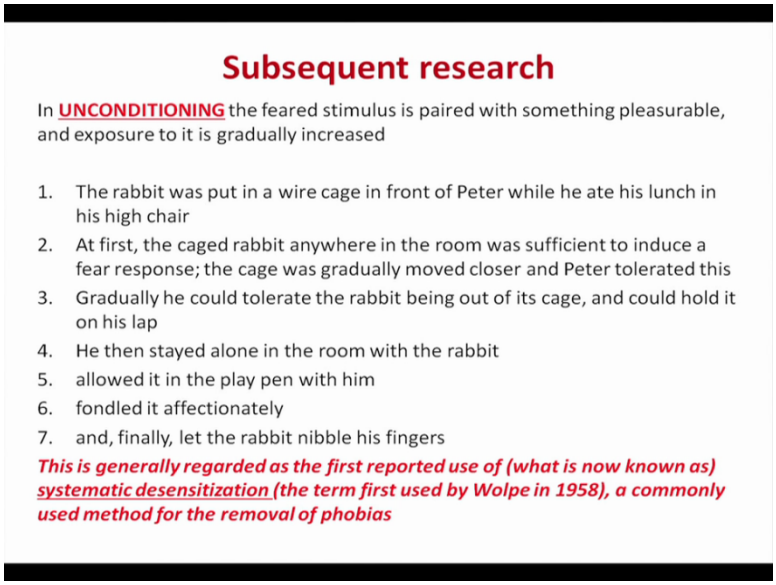

So basically the treatment of phobia, specific phobia is done through systematic desensitisation and this actually follows the behaviour the treatment procedure follows the principles of conditioning and un-conditioning that was actually introduced by J B Watson in 1920. So this is one of the major (())(37:21) I believe that this is one of the major research in psychology which shows that how learning principles can be applied in clinical psychology and this till date we talk about systematic desensitisation when you are trying to treat (teach) treat specific phobias and is still in use today. Thank you.