**Lecture 8 Pedagogy**

**Behaviorism**

In the broadest sense, learning occurs when experience causes a relatively permanent change in an individual knowledge or behavior.

Some psychologists tend to emphasize the change in knowledge, they favor cognitive learning theories. Others favor behavioral learning theories assuming that outcome of learning is change of behavior and emphasize the effects of external events on the individual.

J.B.Watson, father of behaviorism, stressed that inborn characteristics play no role in a person’s development, and as a result, convinced many psychologists that it was important to study how changes in the environment influenced what was learned.

**John Broadus Watson**

(January 9, 1878 – September 25, 1958) was an [American](https://en.wikipedia.org/wiki/United_States) [psychologist](https://en.wikipedia.org/wiki/Psychology) who established the [psychological school](https://en.wikipedia.org/wiki/List_of_psychological_schools) of [behaviorism](https://en.wikipedia.org/wiki/Behaviorism). Watson promoted a change in psychology through his address *Psychology as the Behaviorist Views it*, which was given at [Columbia University](https://en.wikipedia.org/wiki/Columbia_University) in 1913.[[3]](https://en.wikipedia.org/wiki/John_B._Watson) Through his behaviorist approach, Watson conducted research on animal behavior, child rearing, and advertising. In addition, he conducted the controversial "[Little Albert](https://en.wikipedia.org/wiki/Little_Albert)" experiment and the [Kerplunk experiment](https://en.wikipedia.org/wiki/Kerplunk_experiment). Watson popularized the use of the scientific theory with behaviorism.

Classical conditioning was discovered by I. Pavlov.

Pavlov repeatedly rang the bell at the same instant he fed his dog. After a number of such stimulus-stimulus pairings (bell-food), the dog came to expect food when it heard the bell. The dog quite naturally began salivating to the sound of the bell even when it was not followed by food.

To the dog the bell became a signal that food was about to be served. The important circumstance for classical conditioning was the contiguity of the bell stimulus with the food stimulus. They occur together, so they became mentally associated. Therefore classical conditioning is also called contiguity learning or stimulus-stimulus learning.

The food is unconditioned stimulus (UCS).

The salivation is unconditioned response (UCR)

The bell was called a conditioned stimulus because it elicited a particular response after conditioning. (CR)

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The learned salivation response to the bell alone is the famous conditioned response (CR)

*Repetition*

A number of learning principles evolved from Pavlov’s research.

He noted that the strength of the conditioned reflex-measured in the number of the drops of saliva-increased with the number of stimulus-stimulus pairings.

This was the first scientific demonstration that repetition systematically strengthens learning.

*Extinction*

If the bell were repeatedly presented without the food, the conditioned salivation to the bell would diminish and eventually stop.

We would say that the response was extinguished. The process itself is called extinction.

The extinction is not the same as forgetting. The dog might have remembered that the bell used to be followed by food. However, after hearing the dissapointing bell all day without receiving the meat powder, the dog learned to ignore the bell and suppress the useless salivation.

Extinction might include forgetting, eventually, but not necessarily.

*Overlearning*

Pavlov also noted that the greater the degree of original learning-the more times the food stimulus was paired with the bell stimulus the longer it would take to extinguish the well-learned conditioned response. Thus hatched the principle of overlearning. Overlearning is means of slowing the rate of extinction.

Overlearning also reduces forgetting.

Let’s assume the dog’s salivation response was extinguished. One day passed. The dog is returned to the laboratory. He is again strapped in the experimental apparatus.

What happens when Pavlov rings the bell?- The dog salivates.

**Spontaneous recovery**

**Generalization and discrimination**

Both generalization and discrimination are necessary adaptive phenomena.

Example of generalization-whenever students apply a math or physics skill to a new problem correctly or incorrectly-they are generalizing.

Discrimination are difficult when stimuli are very similar, but must be associated with different ideas or responses. For example, young children have to look more than twice to discriminate **p** from **q**.

In the lecture –room such concepts as:

Contiguity

Repetition

Overlearning

Generalization

Discrimination

Spontaneous recovery

run through all forms of human learning including classroom learning.

**Operant conditioning**

The essence of operant conditioning is that reward strengthens behavior, while punishment weakens it. Parents, teachers, police and others have been dishing out spankings, threats, hugs, grades, praise, kisses, lashes, money for a long time in order to teach appropriate responses to the appropriate stimuli, whether it’s handing up a coat, paying attention, etc.

Edward Thorndike, one of the earliest American learning theorists, summarized the actions of rewards and punishments in his work “Laws of Effect”: Responses leading to satisfying effects (that is to rewards or satisfiers) will be strengthened.

Responses (punishment or annoyers) will be weakened.

B.F. Skinner coined the name “operant conditioning”. The prototype operant conditioning situation includes a hungry white rat and a Skinner box, a small cage in which a food pellet drops into a cup each time a lever is pressed.

The rat initially knows nothing about pressing levers for pellet. Skinner sits quietly near the box with a finger on a remote control button for dispensing pallets. He rewards the rat for getting closer and closer to the lever. Before long, Skinner rewards the rat only for sniffing, biting, nosing, or placing its little paw on the lever. The rat soon will accidently press the level with enough force to release a pellet. After a little more preliminary bumbling, the rat will learn to press the lever with confidence and dash to the food cup for his reward. Skinner used the word shaping to describe this successive approximation method of rewarding only behaviors which come closer and closer to the desired final behavior.

**Intrinsic reinforcement**

In classroom learning, intrinsic reinforcement (enjoyment) is a very desirable form of reward. Playing games, solving puzzles, completing a challenging task

***Motivational and Feedback Functions of Reinforcement***

A student rewarded for completing a report on time knows that he did the correct thing (feedback function).

He is pleased by the reward and is more likely to repeat the rewarded behavior (motivational function).

**Primary and secondary reinforcement.**

**Partial Reinforcement Effect**

**Punishment**

**Complexities of using punishment**

**Four types of Reinforcements and Punishments**