

Behaviorist Learning Theory



Behaviorist Learning Theory

- Main tenet is that all behavior is caused by a corresponding external stimulus.

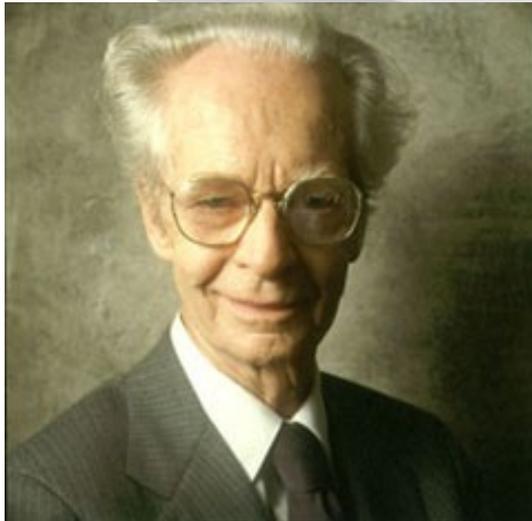


- Behavior is determined by the environment through either association or reinforcement.

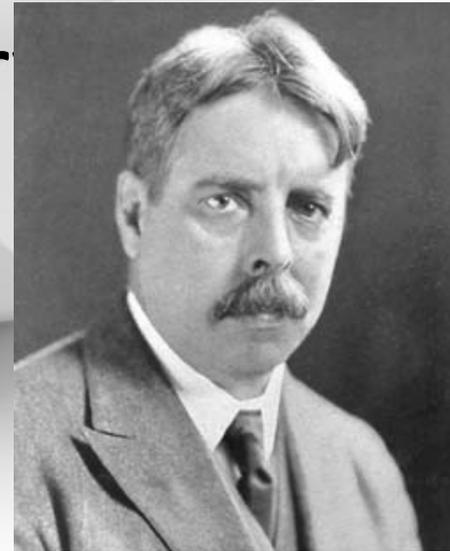


Ivan Pavlov
(1849-1936)

Proponents of the Behaviorist Learning Theory



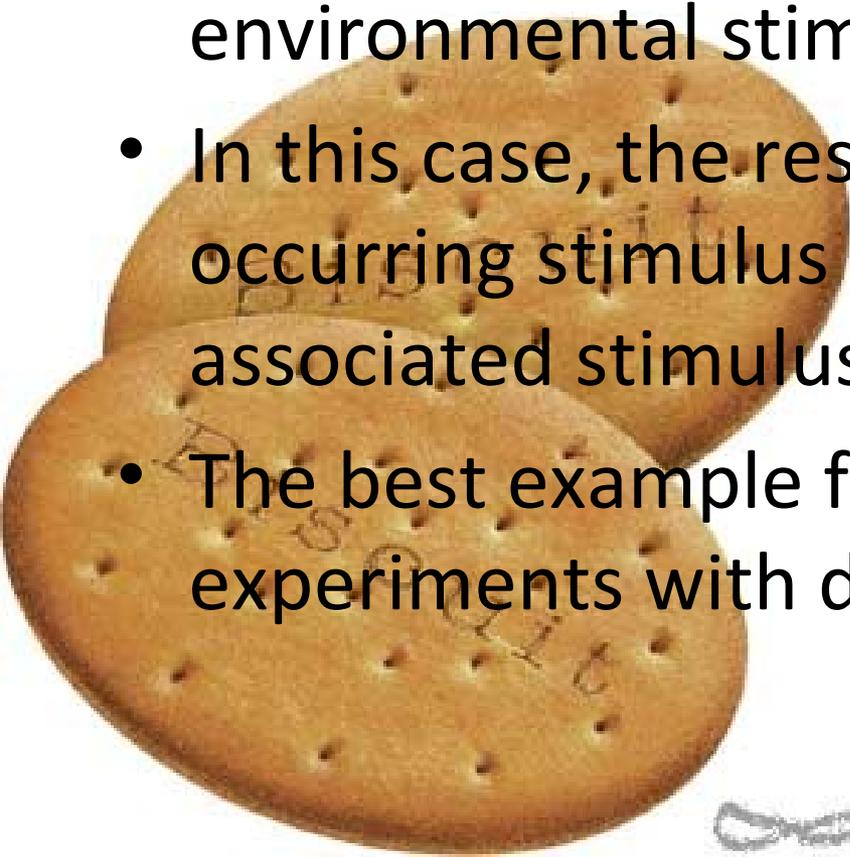
B.F. Skinner
(1904-1990)



Edward
Thorndike

Ivan Pavlov and his Classical Conditioning

- Classical Conditioning occurs when a naturally occurring stimulus is associated with another environmental stimulus.
- In this case, the response to the naturally occurring stimulus is carried over to the associated stimulus.
- The best example for this is Pavlov's experiments with dogs.



1. Before Conditioning



Food

Unconditioned
Stimulus

→
RESPONSE



Salivation

Unconditioned
Response

2. Before Conditioning



Bell

Neutral
Stimulus

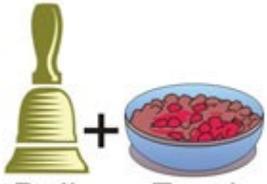
→
RESPONSE



No Salivation

No Conditioned
Response

3. During Conditioning



Bell

Food

→
RESPONSE



Salivation

Unconditioned
Response

4. After Conditioning



Bell

Conditioned
Stimulus

→
RESPONSE



Salivation

Conditioned
Response

Classical Conditioning

Pavlov's experiment with dogs taught them to associate the ringing of the bell with the arrival of food.



- Pavlov's work would later on be very influential for other psychologists like B.F. Skinner.
- His contribution to the educational system can best be seen in the rewards and punishment systems found in classrooms all over the world.





Edward Thorndike and His Law of Effect

- Edward Thorndike's experiments with a cat in a puzzle box led him to conclude that learning can be explained by the principle of Law of Effect.
- Simply put, it means that when a response to a stimulus produces a satisfying effect, the association between the response and the stimulus is strengthened.

Thorndike's Law of Effect

- In the Law of Effect, a learner on his first day of kindergarten might try different approaches of getting his teacher's attention.



- The learner, by trial and error, learns which methods earn a positive response from the teacher and which get a negative response.

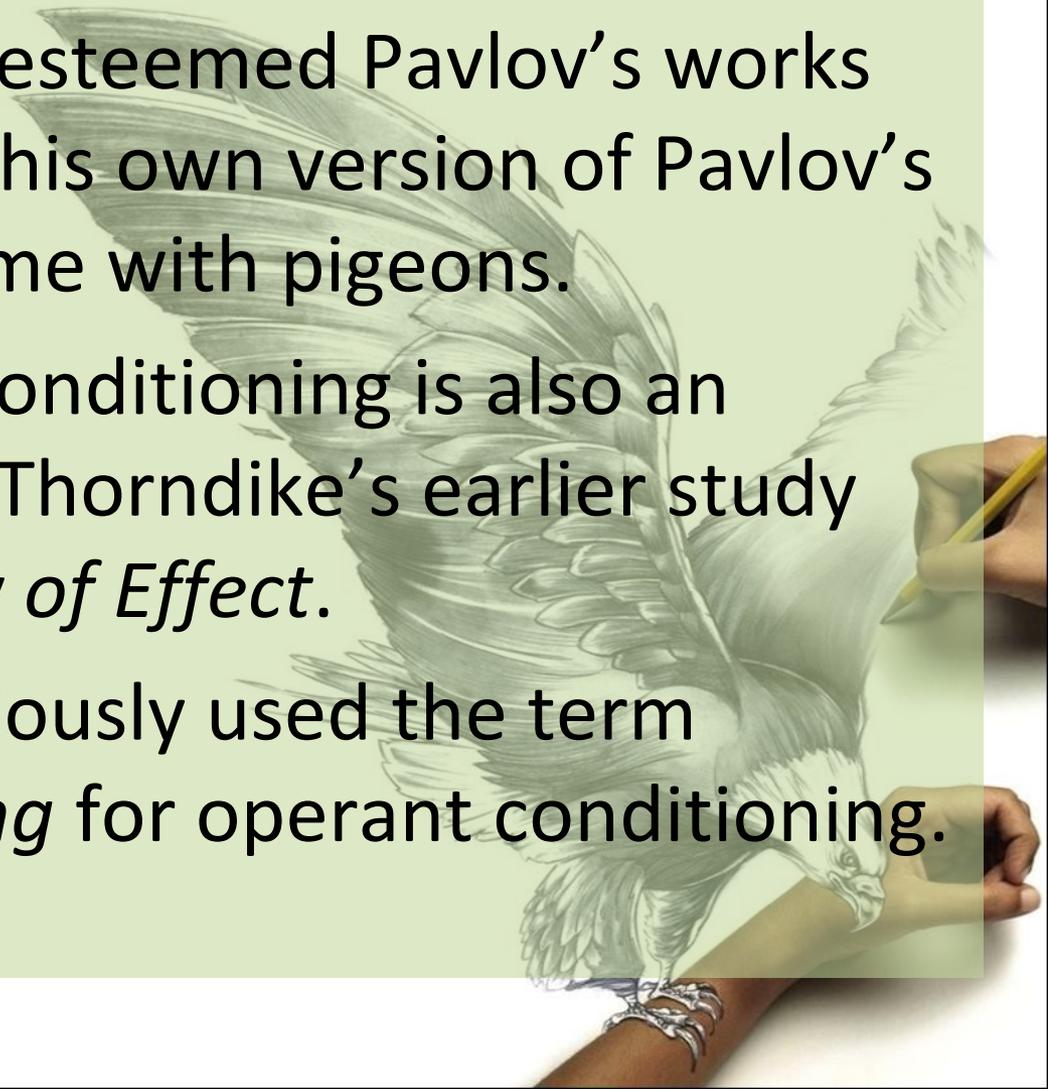
- Criticisms against the Law of Effect include its mechanistic point of view. However, one has to take into account that Thorndike's experiments first made use of cats.



- Another is that Thorndike's explanation of behavior as a series of trial and error does not give importance to the learning and thinking process of a learner.

B.F. Skinner and his Operant Conditioning

- B.F. Skinner greatly esteemed Pavlov's works and even produced his own version of Pavlov's experiments, this time with pigeons.
- Skinner's Operant Conditioning is also an offshoot of Edward Thorndike's earlier study and theory, the *Law of Effect*.
- Thorndike had previously used the term *instrumental learning* for operant conditioning.



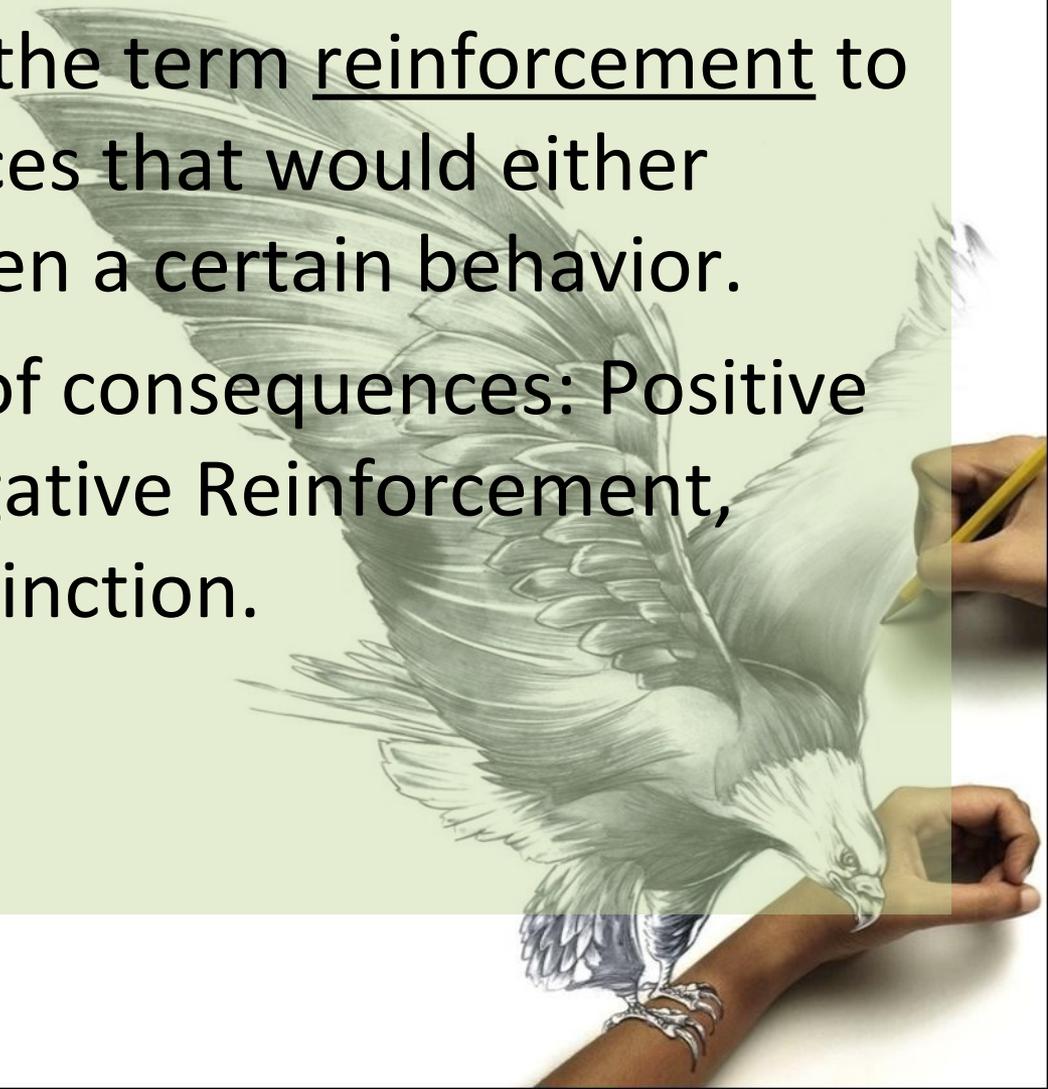
Skinner's Operant Conditioning

- Maintains that behavior is not dependent on the preceding stimulus. Rather it is dependent on the consequence to the response to the stimulus.
- In the Pavlovian case, this would mean that the dog's behavior could actually be explained better by the food presented to them.



Skinner's Operant Conditioning

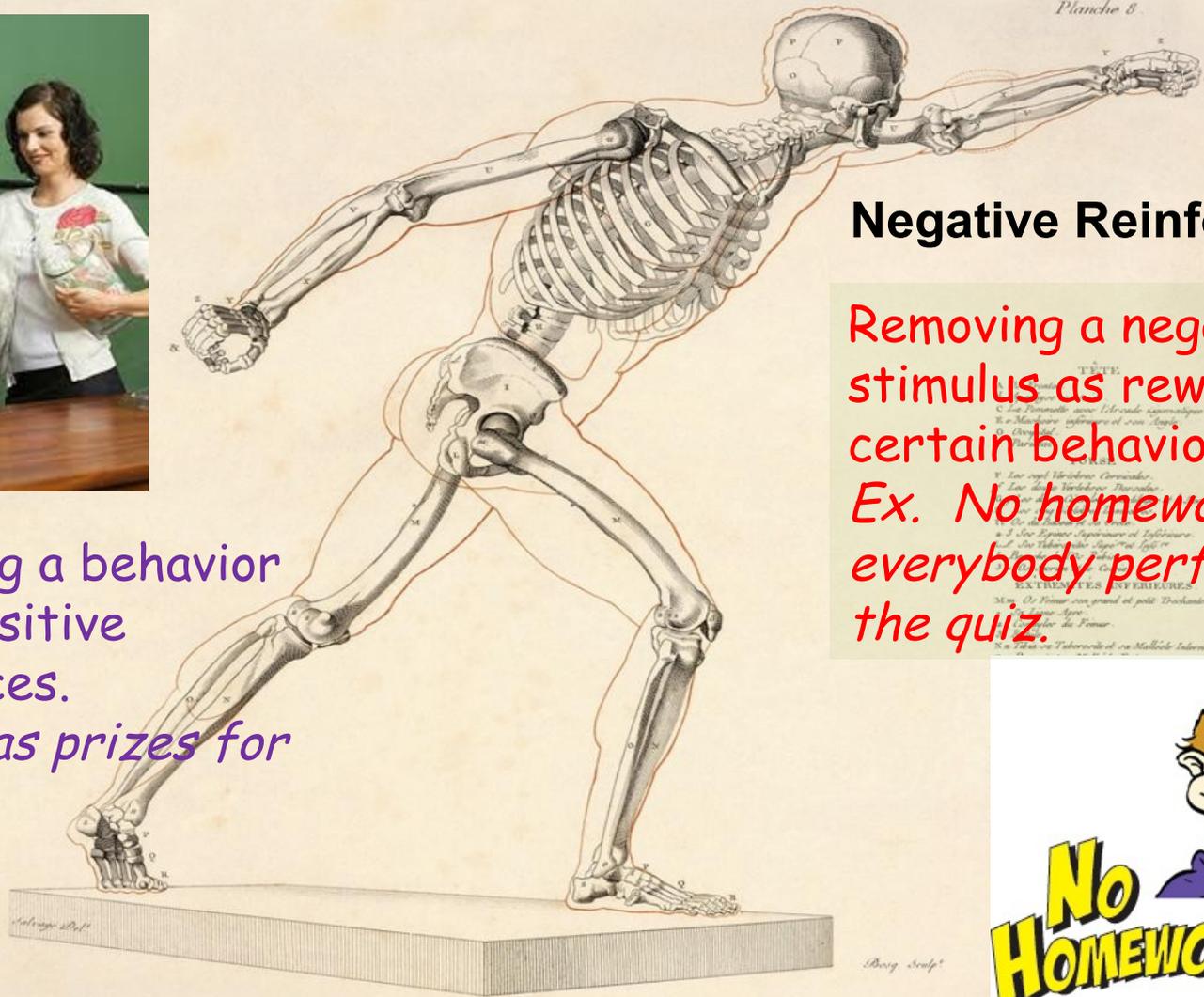
- Skinner introduced the term reinforcement to refer to consequences that would either strengthen or weaken a certain behavior.
- He gave four kinds of consequences: Positive Reinforcement, Negative Reinforcement, Punishment and Extinction.



Positive Reinforcement

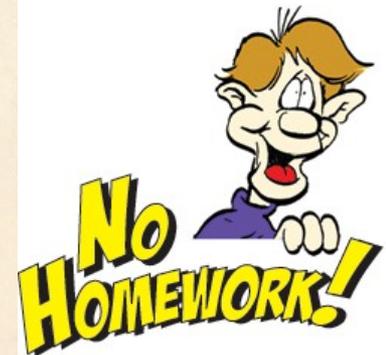


Encouraging a behavior through positive consequences.
Ex. Candy as prizes for reciting

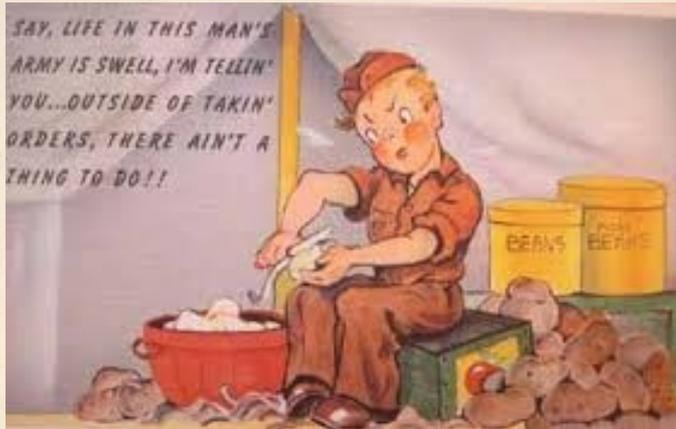


Negative Reinforcement

Removing a negative stimulus as reward for certain behavior.
Ex. No homework if everybody perfects the quiz.



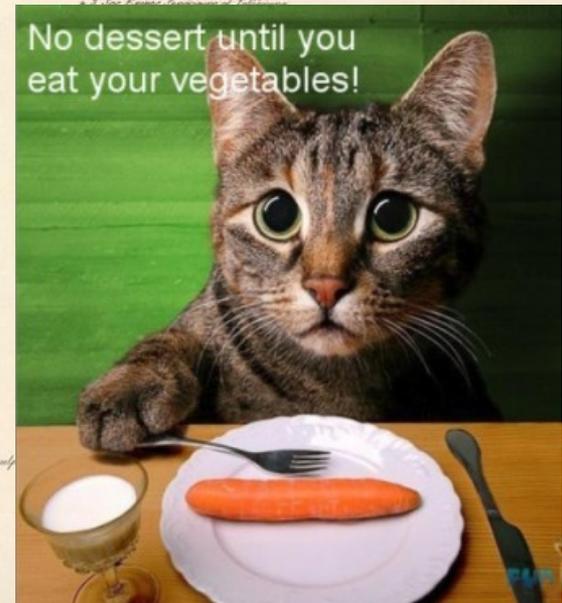
Punishment



Discouraging behavior through negative consequences.
Ex. Peeling potatoes or weeding for tardiness.

Extinction

Discouraging behavior through removal of positive stimulus.
Ex. No treats for unfinished work.



- Contentions for Skinner's Learning theory include his disregard for any introspective analysis. Skinner however explained that it is much easier to study, observe and analyze tangible, external behavior than the internal, mental workings of a person.

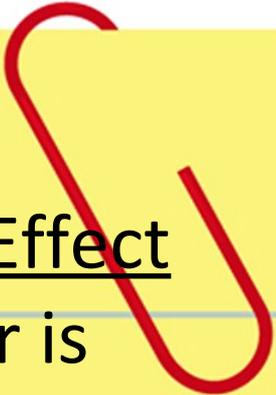


Summary



- Behaviorist Learning Theory focuses on external, tangible behavior as the object of their study. It explains behavior as a stimulus-response dynamism.
- Ivan Pavlov first showed how behavior can be manipulated through Classical Conditioning wherein association is formed between a naturally occurring stimulus-response and a neutral one.

Summary



- Edward Thorndike introduced the Law of Effect principle to explain how a certain behavior is strengthened or weakened.
- B.F. Skinner refined Pavlov's and Thorndike's ideas by introducing the term Reinforcement and by focusing more on the consequences of behavior rather than on preceding stimuli as motivation.
- See this link for a video showing the difference between operant and classical conditioning.

<https://www.youtube.com/watch?v=RTVQHhbhYbA>