

# UNIT 6 OPERANT CONDITIONING



<https://www.youtube.com/watch?v=vlbZB6rNLZ4>

# Rat Boy



<https://www.youtube.com/watch?v=8PWH745MMMY>

# Operant Conditioning

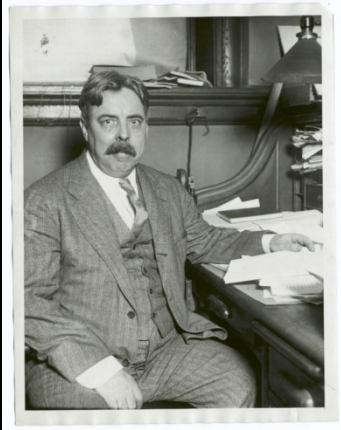
A type of learning in which behavior is strengthened if followed by reinforcement or diminished if followed by punishment.

Classical conditioning forms associations between CS and US. It involves RESPONDENT BEHAVIOR – actions that are automatic responses

Whereas classical conditioning is a type of learning based on association of stimuli, operant conditioning is a kind of learning based on the association of consequences with one's behaviors.

- Let's travel through time with the Tardis to one of the first founders of Operant Conditioning...Edward Thorndike....





# The Law of Effect

rewarded behavior is likely to recur.



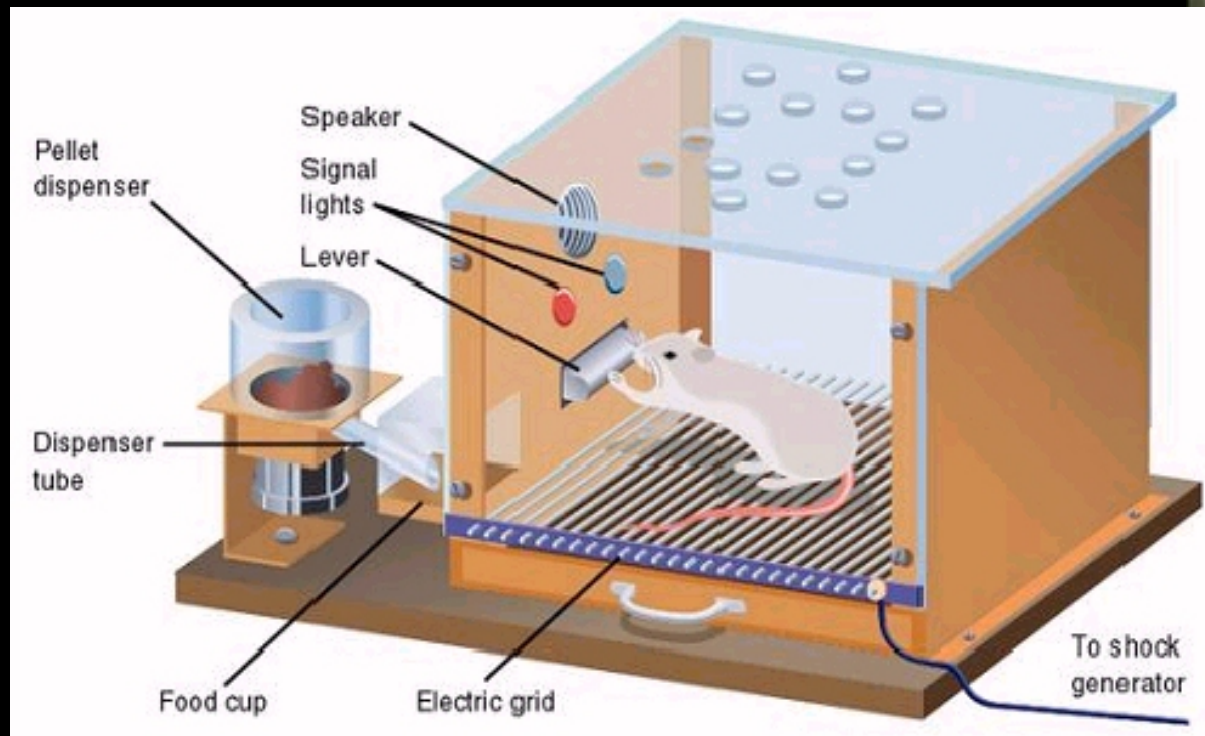
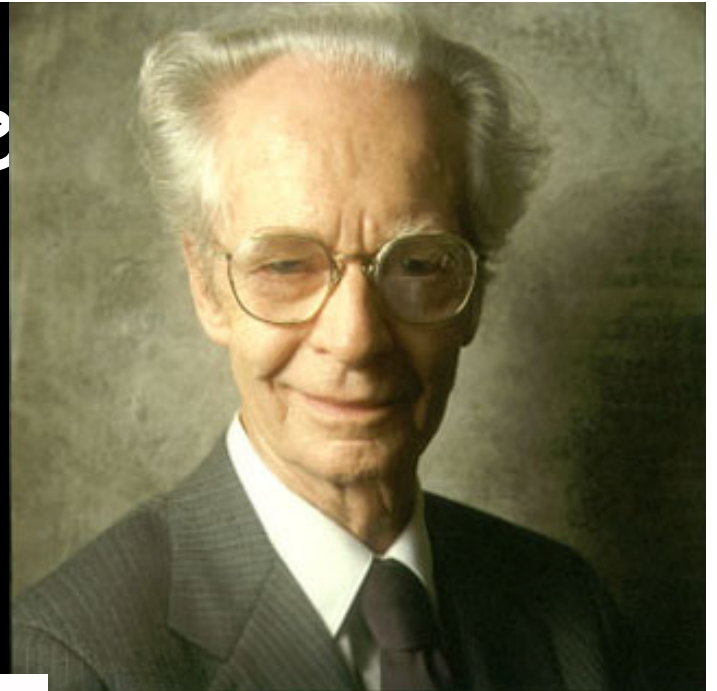
- **Edward Thorndike**
- One of the 1<sup>st</sup> to research this kind of learning (operant) Locked cats in a cage
- Behavior changes because of its consequences
- Rewards strengthen behavior.
- If consequences are unpleasant, the Stimulus-Reward connection will weaken.
- Called the whole process **instrumental learning**.

<https://www.youtube.com/watch?v=y-g2OmRXb0g>



# B.F. Skinner

- Used a Skinner Box (Operant Chamber) to prove his concepts. Skinner used a method called shaping to get his animals to do what he wants. Let's try it.....



Shaping, a procedure in which reinforcers, such as food guides the animals actions closer and closer approximations of the desired behavior.

- **Side Note:** Skinner also came up with **The Air-Crib**. Skinner tried to mechanize childcare through the use of this “baby box,” which maintained the temperature of a child’s environment. Crib was humidity and temperature controlled. Skinner believed it would keep his second daughter from getting cold at night and crying. A fan pushed air from the outside through a surface, adjusting the temp. Major Failure and critics said it was cruel.



- **Side Note:** Teaching Machine. Basically a computer that would give immediate feedback whether they got the answer right or not. Students would be able to move at their own pace. As with Classical timing is very important in Operant conditioning.





# Feel free to volunteer now..

- Shaping Behavior: An operant conditioning procedure in which reinforces guide behavior toward closer and closer approximations of the desired behavior.



<https://www.youtube.com/watch?v=teLoNYvOf90>

The classical music functions as a discriminative stimulus in the presence of which pressing the lever will be reinforced with water. The techno music functions as a discriminative stimulus in the presence of which spinning will be reinforced with water.

This original experiment was created and implemented by Garrett Marsh in Dr. Richard Malott's PSY1000 honors class at Western Michigan University. Matt Brodhead was the graduate student instructor for this course.

- Discriminative stimulus: In operant conditioning where a stimulus that elicits a response after association with reinforcement.



<http://www.youtube.com/watch?v=S2SqKRCa1a8>

# Chaining Behaviors

- Chaining is used to establish a specific sequence of behaviors by initially positively reinforcing each behavior in a desired sequence and then later rewarding only the completed



[lick to see a cool example of chaining behaviors.](#)

Positive  
Applies Stimulus

Negative  
Removes Stimulus



Reinforcement

Increases the  
frequency of  
desirable  
behavior



**Positive**  
Reinforcement

**Negative**  
Reinforcement

Punishment

Decreases the  
frequency of  
undesirable  
behavior



**Positive**  
Punishment

**Negative**  
Punishment

# Reinforces

- A reinforcer is anything the INCREASES a behavior.

## Positive Reinforcement:

- The addition of something pleasant.
  - Candy for pushing a lever.

## Negative Reinforcement:

- The removal of something unpleasant.
  - Hitting the alarm snooze.

<http://www.youtube.com/watch?v=JA96Fba-WHk>



# Which one is this?

- Imagine a teenager who is nagged by his mother to take out the garbage week after week. After complaining to his friends about the nagging, he finally one day performs the task and to his amazement, the nagging stops. The elimination of this negative stimulus is reinforcing and will likely increase the chances that he will take out the garbage next week.

# Continuous v. Partial Reinforcement

## Continuous

- Reinforce the behavior EVERYTIME the behavior is exhibited. Usually done when the subject is first learning to make the association.

## Partial also called Intermittent

- Reinforce the behavior only SOME of the times it is exhibited.
- Acquisition comes more slowly.
- But is more resistant to extinction.
- FOUR types of Partial Reinforcement schedules.

# Ratio Schedules

## Fixed Ratio

- Provides a reinforcement after a SET number of responses.



**Fixed Ratio-** She gets a manicure for every 5 pounds she loses.

## Variable Ratio

- Provides a reinforcement after a RANDOM number of responses.
- Very hard to get acquisition but also very resistant to extinction.



# Interval Schedules

## Fixed Interval

- Reinforces the FIRST Desired response made after a specific length of time.

Like people checking more frequently for the mail as the delivery time approaches, or checking to see if the Jell-O has set.



## Variable Interval

- Requires a RANDOM amount of time to elapse before giving the reinforcement. There is no way of knowing when the waiting time will be over. For example, you've got mail.

# Punishment

Meant to decrease a behavior.

## Positive Punishment

- Addition of something unpleasant.



## Negative Punishment (Omission Training)

- Removal of something pleasant.



Punishment works best when it is immediately done after behavior and if it is harsh!



# Many psychologists note four drawbacks of physically punishing children:

- 1. Punished behavior is suppressed, not forgotten
- 2. Punishment teaches discrimination. Was the punishment effective removing cussing or just not get caught
- 3. Punishment can teach fear. Most European countries and most US states now ban physical punishment.
- 4. Physical punishment may increase aggressiveness by modeling aggression as a way to cope with problems.

- Punishment tells you what not to do, reinforcement tells you what to do. 😊

# Identify which schedule is being used and whether it is the ratio or interval.

- 1. The "pay out" of money on the slot/poker machines

2. A teacher ignores Tim's "calling out" of the answers almost every time.

3. Tasha, a young woman with moderate mental retardation, is given a "credit" (equal to \$1) for every 100 labels she glues to bottles in the sheltered workshop setting.

4. Every time Antonio, a student with autism, says his name and address when prompted to do so by the teacher, he is given his favorite reinforcement; a raisin

5. A bell goes off at random times in the classroom. Tina is rewarded if she is "on task".

# Primary v. Secondary Reinforcers

## Primary Reinforcer

- Things that are in themselves rewarding.



## Secondary Reinforcer

- Things we have learned to value.
- Money is a special secondary reinforcer called a generalized reinforcer (because it can be traded for just about anything)

# Omission Training:



• **Omission training** – a response by the learner is followed by taking away something of value

This works well because the learner can change their behavior and get back to the positive reinforcer

Example: Time Out (crate)

**Key** – You need to find out what is rewarding / isn't rewarding for each individual





# Superstitious Behavior



BLACK CATS

Your preposterous human  
superstitions are quite illogical.

- How do people develop superstitions?
- Comes from Partial Reinforcement.
- “I won the lottery when I wore these jeans.”

[http://www.google.com/imgres?resuperstition+funny&start=163&hl=en&sa=X&tbid=1&pcor=1&it=1T4ADFA\\_enUS393US394&biw=1024&bih=540&itbmeisch&itbnid=PGSmYBDM-ldxNM&imgrefurl=http://www.bigblueview.com/2012/11/15/2705299/what-are-your-game-day-superstitions&docid=SVGGgLLJC0r2M&imgurl=http://cdn2.sbnation.com/imported\\_assets/948230/black-cats-cats-spock-star-trek-superstition-demotivational-poster-1274151429.png&w=640&h=563&ei=y-mnULewHqy90QH84oHoBQ&zoom=1&iact=hc&vpx=191&vpy=175&dur=1141&hovh=209&hovw=242&tx=142&ty=103&sig=111240191638333240454&page=12&itbnh=146&itbnw=174&ndsp=15&ved=1t:429,r:6,s:163,i:273](http://www.google.com/imgres?resuperstition+funny&start=163&hl=en&sa=X&tbid=1&pcor=1&it=1T4ADFA_enUS393US394&biw=1024&bih=540&itbmeisch&itbnid=PGSmYBDM-ldxNM&imgrefurl=http://www.bigblueview.com/2012/11/15/2705299/what-are-your-game-day-superstitions&docid=SVGGgLLJC0r2M&imgurl=http://cdn2.sbnation.com/imported_assets/948230/black-cats-cats-spock-star-trek-superstition-demotivational-poster-1274151429.png&w=640&h=563&ei=y-mnULewHqy90QH84oHoBQ&zoom=1&iact=hc&vpx=191&vpy=175&dur=1141&hovh=209&hovw=242&tx=142&ty=103&sig=111240191638333240454&page=12&itbnh=146&itbnw=174&ndsp=15&ved=1t:429,r:6,s:163,i:273)

- Power point was adapted from :
- <http://www.apppsychology.com/apppsychPP/apppsychology/APpresentationshome.htm>
- <http://www.actfl.org/images/Aprilo8TLEMarkParisiCartoonOffTheMark.jpg>
- [http://www.sangrea.net/free-cartoons/phil\\_joy-of-learning.jpg](http://www.sangrea.net/free-cartoons/phil_joy-of-learning.jpg)
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