

What are the Extensions?

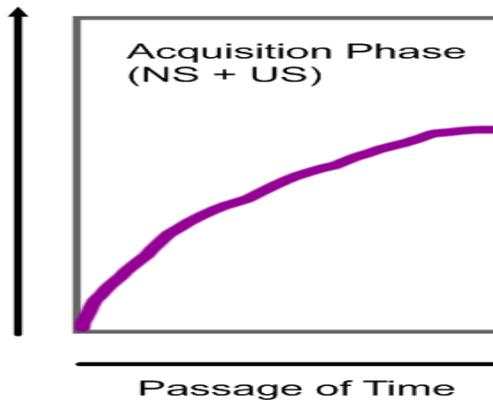
After “discovering” classical conditioning, Pavlov spent the rest of his life expanding upon his ideas. He came up with some “extensions” that further develop/add on to his theory.

- Acquisition
- Extinction
- Spontaneous Recovery
- Generalization
- Discrimination
- Higher-Order Conditioning



Acquisition

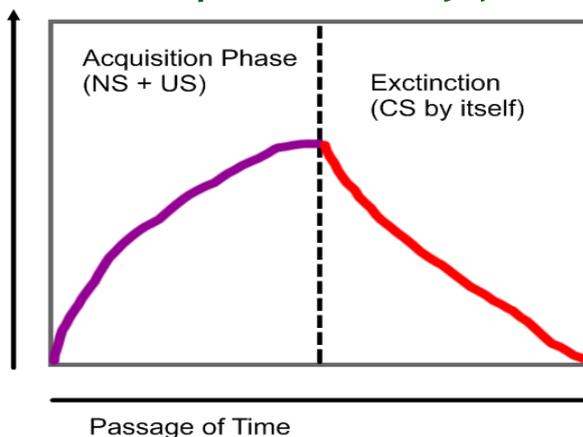
- The preliminary stage of learning.
- This is when the organism first connects the events together in its mind (it goes from unconditioned to conditioned)
 - *When Pavlov's dog figured out that a bell meant food was coming*
 - *When you watch Jaws and associate the theme song with a shark attack*



- **TIMING MATTERS!** The CS should come before the UCS
- They should be very close together in timing.
- Why????

EXTINCTION

- The withdrawing of a conditioned response.
- Occurs when you stop pairing the US & NS/CS and time passes
 - *Eventually Pavlov's dog will stop salivating to the sound of the bell*
 - *If you watch Jaws enough times with the sound muted, eventually just hearing the "theme song" won't produce any fear in you*



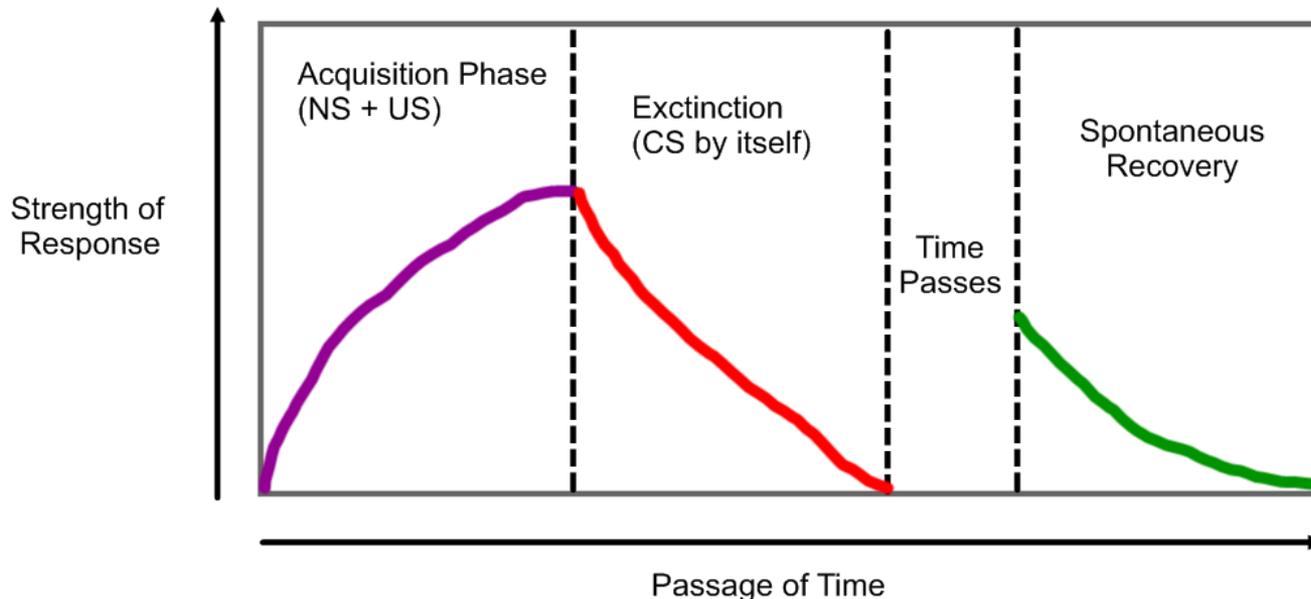
- **Is Extinction permanent?!**
No, unless you're a dinosaur.
I'll explain why on the next slide.

Spontaneous Recovery

- The **recurrence** of a conditioned response after a rest period following extinction.
- (You have to connect the CS & NS again for it to re-appear)



- *If it's already been conditioned previously, it won't take the organism as long to learn it a second time, but it also won't start out as strong of a connection*



- *You hear “Wrecking Ball” on the radio and love it. Then it plays five million times over the next week. Now you hate it. It stops playing. Ten years from now it randomly comes on the radio—what will your reaction be?*

Generalization

- When stimuli similar to the neutral stimulus bring forth similar responses as the neutral stimulus
 - Usually happens to “less intelligent” animals
 - My cat Gretta is conditioned to come running if she hears her canned food opening. She also comes running when I open a soda can sometimes.



***“Yay! I love when Mr. O feeds me canned food!
NOM NOM NOM NOM NOM NOM NOM NOM”***



***“Wait a second...
IS THAT A CAN I HEAR???”***



***“Yay! I’m about to get food!
...Where is it???”***

Discrimination

- When an organism doesn't respond to similar stimuli as the neutral stimulus
- Opposite of generalization
- Don't confuse this with social psych's discrimination
 - Usually happens to “more intelligent” animals; the opposite of generalization
 - You've been conditioned through school to leave when the bell rings. If I rang my own personal bell in front of the class, I doubt anyone would leave.
 - If Gretta was smart instead of dumb, she wouldn't get excited when my soda can opens.



***“Yay! I love when Mr. O feeds me canned food!
NOM NOM NOM NOM NOM NOM NOM NOM”***



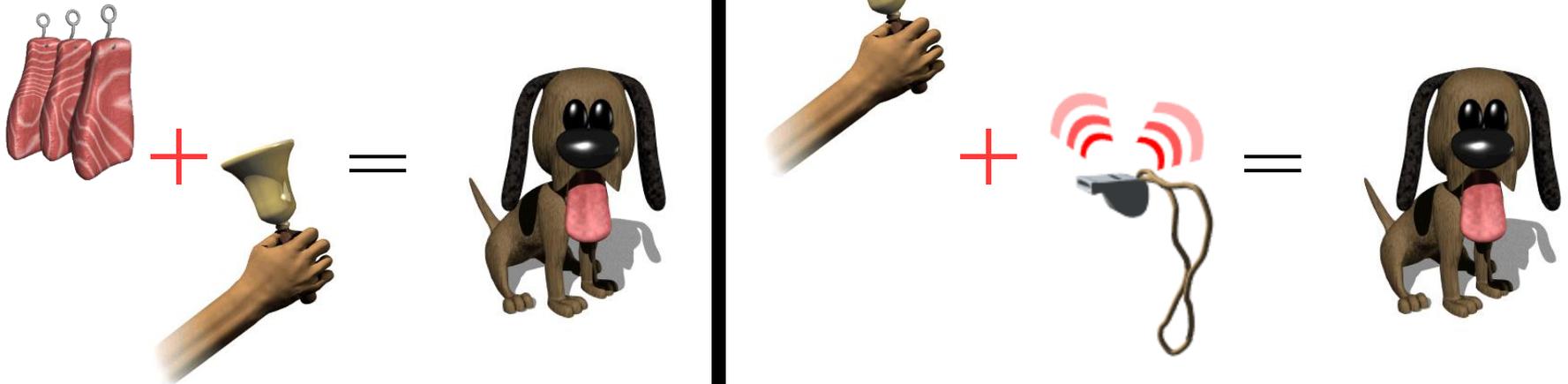
***“I just heard Mr. O open a can of soda.
Not gonna fall for that one, bro.”***



***“Since I'm not being fed I think
I'll go spin instead.”***

Higher-Order Conditioning

- After classical conditioning has successfully been established, the pairing of a second neutral stimulus with the previously conditioned stimulus
 - Often called “second-order conditioning”; typically produces a weaker response
 - After Pavlov conditioned his dog to salivate at the sound of a bell, he could then pair up the bell with a whistle, causing the dog to salivate at a whistle as well.



Cognitive Processes Of CC

- Does classical conditioning work as well on humans as it does on animals?
- **NO**, because of our **cognition and intelligence**
 - *Let's say we want to “cure” an alcoholic through alcohol therapy. We put a nausea-inducing drug in their beer. Through classical conditioning, we hope they begin to associate the beer with feeling sick.*
 - *Unfortunately, people are too smart. Their experiences/knowledge prevent it from being effective.*



Biological Predispositions Of CC

- An animal's capacity for conditioning is restrained by its **biology**.
 - *Certain species are predisposed to learn particular associations that enhance their survival*
- **John Garcia** : researched the effects of radiation on rats
 - *If we CC a rat to associate radiation with water, would it condition the radiation quickest to a TASTE, a SIGHT, or a SOUND?*
 - *Answer: TASTE*
 - *Makes adaptive sense: rats rely on their sense of taste more to survive*

