# Classical Conditioning

## Paradigm

## Development

## Types

## Examples

## Autoshaping

## Predictability & Probabilities

## Summary

Paradigm

## US=Unconditioned Stimulus

## UR=Unconditioned Response

## NS=Neutral Stimulus

## CS=Conditioned Stimulus

## CR=Conditioned Response

|  |  |  |
| --- | --- | --- |
| Pairing of NS with US | US →meatelicits | URsalivation |
| NS →tone | CS →tone | CRsalivation |

Development

## The CR is acquired gradually over trials.

Types

## Trace

### CS-US Gap is called the *“trace interval”.*

### A *“Gap filler”* increases effectiveness of conditioning.

### Shorter delays are more effective.

## Delay

### Shorter delays are more effective.

## Simultaneous

### Need *“test trial”* to see if learning has occurred.

### This technique doesn’t work.

### This was a surprise to many, as the closeness or *“contiguity*” of the 2 stimuli was believed to be responsible for learning.

## Backward

### Produces the opposite of excitation (called inhibition).

### In this case, the CS signals the absence of the US. Exs. “Closed”, “Out of *Order”*, *“No Entry”*.

### This is why it is important to give the praise cue before, rather than after the reward.

## Temporal

### This form of conditioning produces both excitation & inhibition.

Examples

## Dinner time → excitement (will give handler reminders)

## Dinner preparation routine (handling bowls, etc.) → salivation

## Leash unclipped → freedom

## Tracking line → nose to ground

## Men (to some dogs) → fear (perhaps abuse history)

## Handler corrections → avoidance &/or aggression to handler

## Toy → fun, excitement

## Putting on my running shoes → fun, excitement

## Traveling to familiar training areas → whining just before getting there

## Words:

### Feedback – *good* &/or *yes*, *eh/no*

### Activity – *play*, *swim*, *go* *outside*

## Doorbell/knock → stranger

## Equipment used in training → eagerness/excitement

## Helper/Decoy freezes → automatic out

## *“This is the \_\_\_ police department, come out now or I’ll send my dog”* → dog (& handler) get “pumped”

Autoshaping (& Sign Tracking)

## Pigeon “*teaches*” itself to peck a disc.

|  |  |  |
| --- | --- | --- |
| Pairing of NS with US | US →foodelicits | URpecking |
| NS →lighted disc | CS →lighted disc | CRpecking |

## Animals tend to approach & contact stimuli that signal the availability of food, hence the term *“sign tracking”*.

## This is part of what is going on in *“luring”*.

## Can also be done with rats - The rat treats the bar as if it was the food and tries to eat and chew the bar resulting in it being pressed.

## Can also be done dogs - Pamela Reid with retrieve.

Predictability & Probabilities

## Issue is whether the CS predicts the US. A *contingency* refers to a dependence of one event upon another.

## Consider the probability of an event:

### If P=0, event will not happen.

### If P=1 event will happen.

### If 0>P<1, event may happen. Most events fit in here.

## Now, there are 2 probabilities we need to consider:

### P(US/CS) - probability of the US occurring given that the CS has occurred.

### P(US/NoCS) - probability of the US occurring given that the CS has not occurred.

## Possible Emotions - Possibilities for what is going on inside the black box:

|  |  |  |
| --- | --- | --- |
| US Type | CS+ Excitation | CS- Inhibition |
| Pleasant | Joy | Sorrow |
| Aversive | Distress | Relief |

Summary

## CC is concerned with “*what predicts what*”. More specifically, it is concerned with events (stimuli) in the world that predict the occurrence of biologically important events (food, pain, fun). Thus, CC deals with relations between stimuli (S-S relations).

## CS comes to be treated as if it were the US.

## There is an emotional component.