
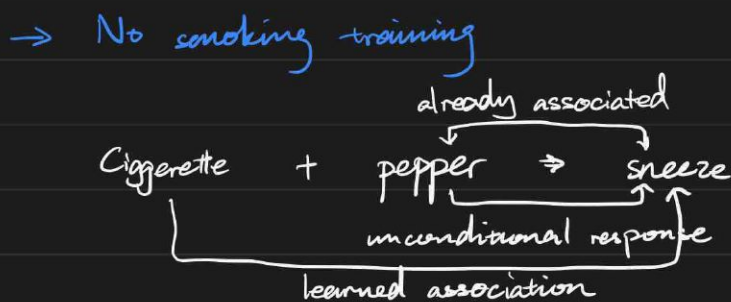


# Lecture 7 Learning

- \* The black box method - early look at stimuli & responses, cuz they couldn't see the inside back then  
→ Aka "behavioural Science"  
stimulus →  → response ← then we can predict (?) well maybe

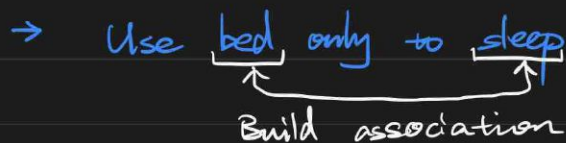
## #1 Classical Conditioning ← A black box method

- Unconditional stimulus → produce response without training (e.g. food) → unconditional response
  - Neutral stimulus (e.g. random person) (e.g. bell ring) → nothing happens
- association learning → conditional response



\* Learning not equally easy!

- Light ⇒ shock - easy!  
↳ could even be learnt in one shot.
- Light ⇒ vomit - hard!



## → Cancer & Chemotherapy

Normally: Fav breakfast + unpleasant drug ⇒ vomit, nausea  
then they hate those food

Solution: Bad food + unpleasant drug  
associate to this instead

Also black box

## #2 Operant Conditioning

↳ Specifically refers to rewards & punishments

	Reinforcement	Punishment	
Positive	Give M&Ms	Frequent mocking	← Adding sth
Negative	Take away lab worksheet	no more slides online	← Taking away sth
	↑ Encourages	↑ Discourages	

\* Shaping - train complex behaviour step by step.

→ Project Pigeon

- Reward when fly towards & attack enemy
- Reward when looking at orange (lifeboat, lifejacket, etc.)

→ Curing bedwetting

- Detect wet bed → loud alarm wakes baby

↳ lol side effects black box cares not

→ Seeing eye dogs

\* Training methods

	Interval	Ratio
Fixed reward	\$ every hour	Buy one get one
Variable reward	Fishing	Gambling

\* Generalisation - learn A → then respond differently to B (infant play fluffy stuff<sup>general</sup>)

\* Discrimination - learn A → no change to response to B.

\* Extinction - stop behaviour after training ends

\* Spontaneous Recovery - auto learn after extinction

### #3 Social Learning

→ Kid aggressive after watching vid of others aggressive

\* Learn what's socially acceptable!

\* Learned helplessness

leash a dog and shock it

↓  
runs but can't

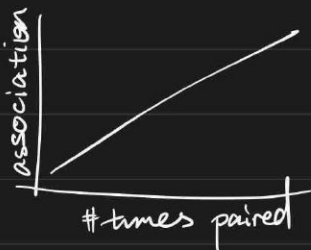
↓  
learned not to try

↓  
unleash

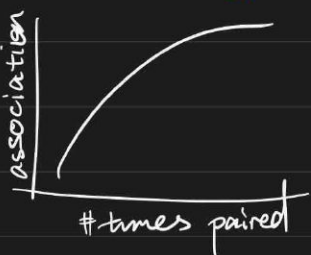
↓  
shock but no longer runs

### #4 Theory of Learning

Hebbian - or times



Rescorla-Wagner - or surprise



### #5 Demise of Black Box

Oversimplified!

- A is fun → reward A with more A → they do more A.
- Pay them to do A → take away payment → they stop doing A.

→ Cognitive Psychology looks at the process i.e. inside black box