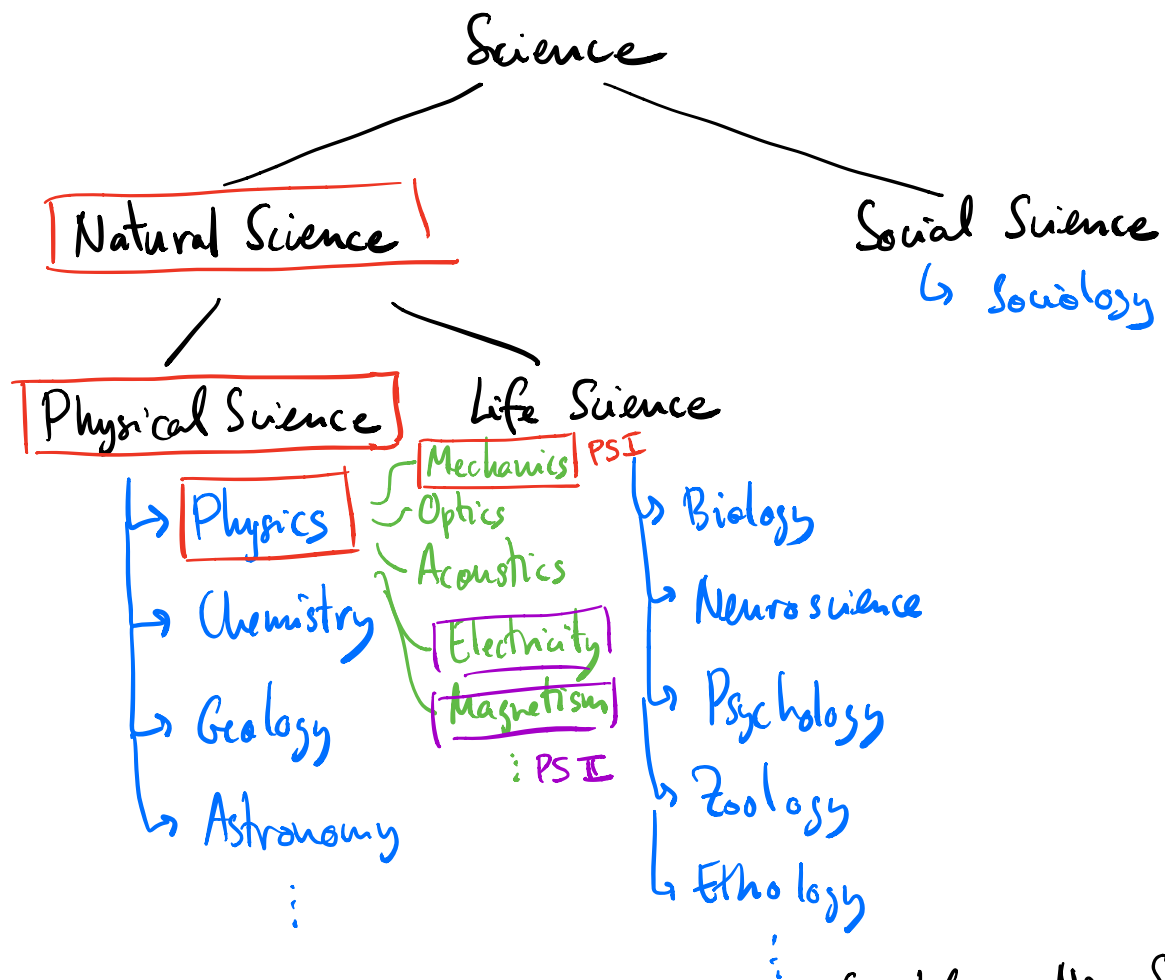


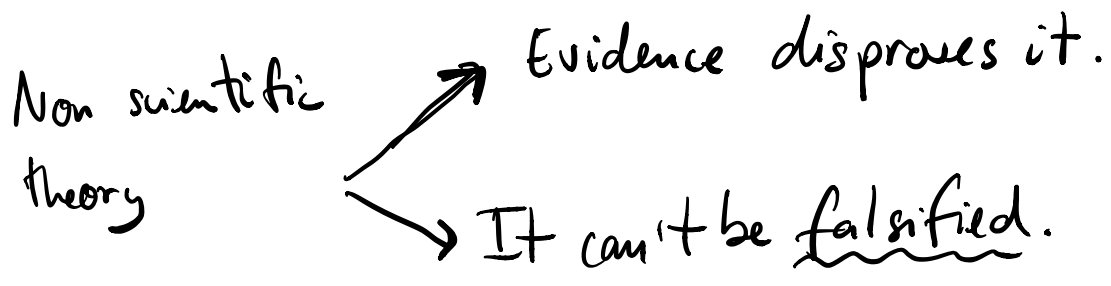
First day: Introduction to Physical Science.



- Demarcation problem:

Scientific	Non-Scientific
eg Astronomy	eg Astrology

How do we distinguish a scientific theory from a non-scientific one?



Karl Popper: For him a scientific theory can never be verified since there is always the potential of new evidence disproving it. For him, what makes a theory scientific is the fact that it can be falsified.

Falsifiability: The potential of a theory of being proven wrong by means of observation.

- How science makes progress?
2 criteria of scientific progress

1) Science progresses if the range of applicability of its theories increases.

2) Science progresses if the theories are simplified while still explaining the same things.

Example of progress of a theory

Theory of August

- Hot in ATX.
- Ice cream sales \uparrow in ATX.
- # of drowning deaths \uparrow in ATX.
- Days are shorter in Chile.
- More ppl. go out in ATX.

Unification

Theory of August

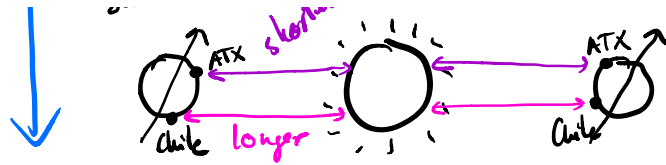
- Hot in ATX
 - Days are shorter in Chile
- Ice cream sales \uparrow in ATX
- # of drowning deaths \uparrow in ATX
- more ppl. outside

Unification

Summer

vs

Winter



Theory of August

- Earth tilted towards the sun

Hot in ATX

Days are shorter in Chile

Ice cream ↑

#drowning ↑

ppl. out ↑