

## **FRANCIS BACON**

To discover the truth, we must cast away intellectual idols

Idols of the Tribe:

- "A false assertion that the sense of man is the measure of all things."
- "We must seek to understand what lies beneath to see the real nature of anything or any idea"

Idols of the Cave:

- "We see what we want to see rather than what really is"
- "Focussing on our own needs and desires, we relate other events to ourselves, missing the truth in the process"

Idols of the Marketplace (beliefs of society):

- "The customs of culture can often lead us to think and believe things which may not be true"
  - We don't think to question or analyze the way we view the world

Idols of the theatre:

- "Describes the false beliefs in traditional philosophy"
- "Sometimes we pay too much respect and reverence to old schools of thought"

## **KARL POPPER**

"In so far as a scientific statement speaks about reality, it must be falsifiable; and in so far as it is not falsifiable, it does not speak about reality."

"The growth of knowledge depends entirely upon disagreement"

Logic of Falsification

- "It is easy to obtain confirmations, or verifications, for nearly every theory—if we look for confirmations"
  - "A theory which is not refutable by any conceivable event is non-scientific"
  - "Every genuine test of a theory is an attempt to falsify it"
  - "Confirming evidence should not count except when it is the result of a genuine test of the theory"
- Propensity of Probability (all outcome are separate from previous one)
- targets Plato's question of "who should rule?" and changed it into "How to rearrange institutions so that the rulers can not do too much damage?"

## **ALBERT EINSTEIN**

Theory of General Relativity:

- “Time and space are relative to the point of view of the observer, and that only the speed of light is constant from all points of view in the universe”

Theory of Gravity:

- “Everything emits gravity waves, and that causes disruptions in both space and time”

Theory of Wormholes:

- “Wormholes are theoretical passageways through space-time that create shortcuts for long journeys across the universe”

## **CHARLES DARWIN**

The Origin of Species:

- “More individuals are born than can possibly survive”
- “One general law, leading to the advancement of all organic beings...let the strongest live and the weakest die.” — Charles Darwin, The Origin of Species

The Descent of a Man

- “Man is descended from some lowly organized form”

## **KUHN**

Paradigm Shifts:

- Cycle of Stability, Conflict, Change
- “The decision to reject one paradigm is always simultaneously the decision to accept another”