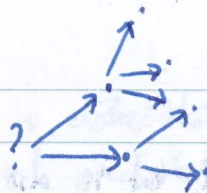


Free Will and Determinism



Free-will determinism problem highlights conflict between science (all actions are causally determined), and the strong sense of freedom to choose actions.

Determinism - all events are caused $\longrightarrow \longrightarrow$

- Physical objects are governed by laws (predictable)
- We are physical objects

Humans' actions can be predicted with absolute certainty

"Uncertainty is fundamental to subatomic nature itself"

"Average behaviour is predictable" (behaviour of a system)

conscious decision

Problems of Foreknowledge - omniscience of God makes free will impossible
Probabilistic or deterministic?
*Compatibilism

Compatibilism

Every event is caused, but is also free.

Illusion of choice / free will - free but predictable?

Our actions are causally determined (ie. fixed) but are also free.

Rephrasing free will as a ^{perceived} choice, not a genuine ability / option.

(constraints)
Causes = restraints / impediments

Causes a choice, not an action.

Freedom: No persons / external circumstances preventing us from doing whatever we want to do.

Definition -

Compatibilism is the idea that people have free will to ~~choose~~ make their own decisions, but that these choices are pre-determined and predictable. Compatibilism is the intersection between libertarianism (the idea that each person is free to make their own decisions, whatever it may be), and determinism (the idea that decisions, actions and events are a result of a chain of causes, and hence can be mathematically predicted and manipulated). As a belief, compatibilism ~~rephrases the defini~~ redefines "freedom of choice" or "free will" more as an illusion, rather than a genuine opportunity to control one's own actions.

... the idea that there is a "chain of causes" that leads to a specific action or decision. This is often contrasted with the idea of "free will" where a person is not bound by these causes and can choose to act differently. Compatibilism suggests that while we may feel we have a choice, our actions are ultimately determined by factors we cannot control, such as our environment, genetics, and past experiences.

... the idea that if a person's position or environment is such that it is inevitable that they will choose a certain path, then they do not have free will. This is often used to argue against compatibilism, suggesting that if our choices are predetermined, then we are not truly free. However, compatibilists argue that we can still have a sense of agency and responsibility even if our choices are influenced by external factors.

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D'Holbach - Are We Gods in the Universe?

D'Holbach

yes

constrain

1. The article proposes that humans are unable to control their own actions, thoughts, feelings, and experiences. Instead, these are all results of a multitude of causes which conspire to ~~deceive~~ ^{constrain} humans. Thus, all humans are inherently involuntary since they are physical beings governed by the fundamental laws of nature. These laws cannot change, so everything in the universe is pre-determined and in a linear fashion of events. D'Holbach suggests that this concept is incompatible, perhaps even opposite, to the belief of free will (intelligent independence).

2. "Man's life is a line that nature commands him to describe upon the surface of the earth, without ever being able to swerve from it, even for an instant."

✓ Yes, he's clearly a hard determinist. Well chosen quote.

"The actions of man are never free; they are always the necessary consequence of his temperament, of the pre-conceived ideas, and of the notions, either true or false, which he has formed to himself of happiness."

3. D'Holbach's position on moral responsibility is that it is ~~an~~ ^{an} in consequential and an illusion. Many causes, such as upbringing, surroundings, genetics, etc, conspire to render man vicious and criminal. Thus, there is no such thing as an "immoral" action or an evil intention - actions are not tied to independent (perceived) feelings or motivation, they are unavoidable and simply caused with no positive or negative attribution. ✓ Yes, and so we cannot blame people for their actions, they could never have done otherwise.

4. a) Societal persistence - mass belief.

b) "Appears to distinguish man from all other physical beings" - it is a satisfying position.

c) Evolutionarily / ~~socially~~ ^{socially} socially beneficial - prevents crime by giving people an illusion of control over their future, leading to healthier individuals.

and strokes the ego of humanity. We like to think we are superior than to other animals.

Religion is another factor he gives.

Excellent! 😊

Free Will Recap.

8. Implications of Quantum Theory for FW + D

Quantum physics has been explained as being "purely random" - particles can be in a number of states at once, which cannot yet be predicted by humans. If this is the case, our decisions which are supposedly "free" are influenced / compromised by a random factor (particle physics), ~~however~~ meaning that a) we cannot have complete control over our actions (free will) and b) our actions are not predetermined (they are random). This suggests that there is a parallel theory which is compatible with neither free will nor determinism.

Heisenberg's Uncertainty Principle - cannot know position and speed of a particle simultaneously, but only because it is impossible to take simultaneous measurements - does not necessarily apply to reality as a whole.

Random from our perspective - not necessarily objectively.

Arguments

Deductive arguments: Validity - Conclusion is true if premises are true (structure)

Soundness: - Valid, and premises are definitely true. \therefore conclusion is true.

Inductive arguments: Premises are examples/patterns, not necessarily proving the conclusion. Truth may entail, but is not proved.

e.g. P1. Swan 1 is white

P2. Swan 2 is white

\therefore Swan n is white

Generalising observations into a general rule.

Induction vs Deduction

Deductive arguments prove themselves - they are based on empirical logic with no need of evidence for support. However, deductive arguments often tend to make assumptions in their premises, which are derived from pattern-based inductive arguments. For example, a deductive argument could be as follows:

P1: I am a human

P2: All humans have eyes

-

C: Therefore, I have eyes.

This is a ~~sound~~ valid deductive argument, regardless of the actual truth of each premise. However, its premises, whilst stronger than those in an inductive argument, enter at a more advanced stage than inductive premises. The ~~first~~ ^{second} premise assumes that all humans have eyes, which is fine in this argument, however it must be proved (or rather supported) by the use of prior experience and history, constituting an inductive argument.

Induction of Determinism

The argument that all events are caused is an inductive one, since it has not been logically proven - it is only reasonable to assume this is the case because every event in history has had a cause, hence future events will probably have causes too. However, this is not necessarily true, as it does not rule out the possibility of an event not having a cause (deduction).

Arguments from textbooks

- | | | |
|-----------------------|---------------------|--------------------------|
| a) Deductive | j) Inductively weak | i) Inductively weak |
| b) Inductively weak | k) Deductive | p) Deductive |
| c) Inductively strong | l) Inductively weak | q) Deductive but invalid |
| | | t) Deductive |

Inductive arguments assume that the future will hold the same conditions as the past, usually on the basis of past evidence. They assume that the past with which we have been familiar has always been consistent in the past, so it would make sense if it continued in the same conditions inferring probability in the same way. However, there is no reason to believe that these conditions will stay the same solely because they always have. This view that inductive arguments generally rely on future inductive arguments (Hume's), as opposed to deductive arguments, which have a definite end point which is related to any difference of the past, present or future.

Hume then concludes that our natural inclination that the sun will rise tomorrow because it always has, is equally unfounded as our belief that it will not rise. This is true of all inductive arguments, which provide no objective evidence for their claims.

Libet's Expt.

intentional to act

Readiness potential → Volition → Action
Action before consciousness of it (will)

Story of Osma / Fatalism

- All events are inevitable
e.g. it is already true/false

- A statement can only be true or false, regardless of one's knowledge

- What are the statements? Are there others?

Knowledge - Science

1. "Scientifically proven" - unbiased evidence to suggest / model a pattern through testing + investigation
2. Scientific facts - speed of light is constant in all inertial frames of reference
a body will continue moving indefinitely if no force acts on it
3. Scientific triumphs - Earth is round
Electricity is a form of energy
4. Scientific method:
 1. Observations e.g. Earth looks flat from the ground
 2. Hypothesis e.g. Earth is flat
 3. Experiment e.g. Search for an edge.
 4. Theory e.g. People who walk off edge of Earth die.

Inductive reasoning - generalizations about the world

Scientific "facts" should be considered true, but still doubted and analysed skeptically as the starting point for new theories.

Induction - Hume

1. Inductive arguments assume that the future will hold the same conditions as the past, ^{which would allow} meaning prior observations of ~~probable~~ occurrence ~~can be~~ ^{can be} taken to be applied to the future as a rule of probability.
2. However, this creates a recursive scenario, in which inductive arguments rely on their own validity, not external evidence. They assume that ~~the past~~ ^{the past} nature has always been consistent in the past, so it would make sense if it continued in the same conditions, influencing probability in the same way. However, there is no reason to believe that these conditions will stay the same solely because they always have. This ^{shows} ~~means~~ that inductive arguments generally rely on further inductive arguments (recursion), as opposed to deductive arguments, which have a definite end point which is external to any influence of the past, present or future.
3. Hume then concludes that our ~~instinct~~ ^{instinct} intuition that the sun will rise tomorrow, because it always has, is ~~an~~ equally unfounded as one's belief that it will not rise. This is true of all inductive arguments, which provide no objective evidence for their claims.

Karl Popper

3-10-12 - 10/10/12

Contrary to Hume → science uses seeks to disprove theories by induction, not prove reciprocals/induces.

Falsification - Successfully shows that Induction is irrational
However, science relies on conjecture/refutation, not induction (reverse)
Theories - "Survival of fittest" (hypothesis + disproof)

Hume questions

1. Hume refers to the "sensible properties" of objects, e.g. a loaf of bread, meaning the humanly-computed aspects of an object, or more precisely, its ^{assumed} implications for us. In the case of the bread, nourishment and enjoyment are two sensible properties which are associated with the bread from prior experience. The "secret powers" point to Hume's idea that we observe causes (bread) and effects (nourishment), but are not aware of the intermediate mechanism for this ("secret").
2. The text implies that humans have a tendency to apply past experience to similar (but not identical) situations in the future, with ^{rational} no basis for this belief. The inference we make in doing so is that ^{some} previous situations are the same as the present one, however this is never the case.
3. Hume believes that this belief (or perhaps habit) is completely unfounded and irrational, however he admits that it is ~~power~~ a human instinct and is largely unavoidable. Hume concludes with the question "What is the foundation of all conclusions from experience?"
4. The process of induction is a product of evolution, so whilst it might not be fully optimised yet, it is widespread and hence is on the path towards a successful and beneficial trait. This is justification enough for it to be valid - it works, regardless of its reasoning or rationality.

Essays

Intro - open issue, for discussion. Imagine reader knows nothing.
(containing)
Body - clear separation
Tone - effortless to read if understand
inviting tone

Hume Summary Notes

Section IV

1. Relations - given by definition and are completely irrefutable (a priori)

e.g. geometry, algebra, arithmetic. Somewhat like Descartes' Simplices.

Matters of Fact - predictions of future based on past (induction). Uncertain.

e.g. Sun will rise tomorrow

2. Matters of fact cannot be proven because there cannot be evidence of the future - it is only possible to know matters of fact after they have occurred. There is no good reason to believe that the future will hold the same conditions as the past.

4. a) A man only knows his friend is in France because he received a postcard from there.

b) A man finds a watch in the desert, leading to the conclusion that there were other men there.

5./6. Hume believes that we only come to know about matters of fact through repeated observation of patterns (induction), assuming that the pattern will continue. e.g. "Adam... could not have inferred from the fluidity or transparency of water that it would suffocate him"

7. a) Smooth pieces of marble - cannot possibly prove that they will stick together without actually trying it.

b) It is also impossible to predict that gunpowder will explode or that opposing magnets will attract each other, before without any prior knowledge of these objects.

Knowledge Essay

1. What problems does Hume's argument have for science and can they be resolved?

- Hume states that induction (repeated observation) is unreliable
- Popper - inverse induction - science searches for fallacies, not patterns - conjecture / criticism
- But Popper's argument still relies on induction → Justification is not necessary
- Why does induction seem to work anyway?
- Theory approaches certainty, but can never be confirmed (increasing probability)

* Are some inductions more reasonable than others?

2. Is there anything we can know with certainty about the world? Descartes / Hume

- Descartes - cogito - an observer must exist
 - ↳ What is the nature of this observer?
 - ↳ Can thoughts exist without thinkers?
- Hume - Relation of Ideas vs. Matters of Fact
 - ↳ Relations of Ideas are true by definition, but have no implications - "internal" ideas
 - ↳ Matters of fact - knowledge is derived from ~~inferred~~ assumed cause + effect
 - ↳ Descartes suggests we can be deceived about cause + effect - e.g. ~~exist~~, but why?

Structure - prompt 1

"Theory of induction is superfluous... it has no function in a logic of science"

- Intro - outline science + knowledge
- Body 1 - explain Hume's problem of induction
- Body 2 - Popper's argument - conjecture + criticism
- Body 3 - Is inductive justification necessary for science?
Are some inductions better than others?
- Body 4 - Popper's argument still relies on induction
- Body 5 - Theories approach certainty ~~but~~ with increasing probability

✓

Conclusion - Induction / scientific method seems to work anyway.
Is Popper's argument good enough?

Hume's Problem of Induction

Alth Every swan I have seen so far is white

∴ Swans are white ✓

∴ There are no black swans ✗