Why can we influence the future and not the past?

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BIG QUESTIONS IN PHILOSOPHY
Why can we influence the future and not the past?

1. What is the question?
2. Some responses
3. Some broader lessons
1. What is the Question?
Why can we influence the future and not the past?

- It can seem so obvious and so uncontroversial that our control must be directed towards the future, and causes must come before their effects, that it can be hard to take the question seriously.
Why can we influence the future and not the past?

- Why is our control directed forwards in time?
- Why is causation directed forwards in time?

- Relevant to both science and the everyday.
But we **can** influence the past!

- Historical events, personal trauma

- We can change how the past is *interpreted*, its ‘meaning’ or its significance for us now.

- We can change how the past *affects* the future—we can change what the past will mean for our future behaviour.

- But these are just further examples of how the future is open to our influence *in a way that the past is not*. 
But there is backwards causation!

- Physicists have explored the possibility of backwards causation (quantum mechanics, particle physics).
- But none of these proposals have gained widespread support.
- (Though these proposals might suggest causal asymmetry is not necessary.)
- Most accept that there is causal asymmetry at our world.
But the future does influence the past!

- Because I’m going to catch a flight, I pack my bags.
- Because the plant will do well in sunlight, the seedling grows towards the sunlight.

- Even if we accept these ‘teleological explanations’, they don’t imply the future causes the past.
- At best, the function, aim or purpose of an entity now influence what it does. What it does in the future does not influence what it does now.
The ‘Asymmetry of Influence’

- A ‘direct’ form of influence in which the future depends on what we do now or what happens now, and which goes beyond how particular events are interpreted.
- Temporal Asymmetry of Causation (Causal Asymmetry)
- Temporal Asymmetry of Control (Control Asymmetry)
Is causal asymmetry necessary?

- Many philosophers think that backwards causation and time travel are at least *metaphysically* possible.
- Some think that they may be *physically* possible as well.
- So we shouldn’t *assume* that the asymmetry of causation is *metaphysically* necessary.
Why can we influence the future and not the past?

Why is it that:

- we can control the future and not the past,
- and causes always come before their effects,
- at least at our world,
- where these concern ‘direct’ forms of influence which go beyond how events are interpreted.
Why should we care about why we can influence the future?

- Time (causal theory of time, open future)
- Free will
- Explaining other temporal asymmetries (records, memory)
2. Explaining the Asymmetry of Influence

1. Primitivist
2. Counterfactual Accounts
3. Agency Accounts
1. Primitivist Accounts

- The Asymmetry of Influence is a (relatively) primitive feature of reality.
- It is part of the definition or nature of causation that causes always come before their effects.
Primitivist Accounts

First Proposal:

1. There is a primitive Direction of Time; the past produces the future, and the future is open while the past is fixed. These are fundamental features of time itself.
2. Causal Asymmetry reflects this general asymmetry of production.
3. So no wonder there is an Asymmetry of Influence.
Primitivist Accounts

Second Proposal:
1. There is a Primitive Direction of in the Laws of Nature; the past *produces* the future, and the future is open while the past is fixed.
2. Causal Asymmetry reflects this general asymmetry of lawlike production.
3. So no wonder there is an Asymmetry of Influence.
Primitivist Accounts

First objection:

- We can make sense of time travel stories, and backwards causation. So it can’t be part of the definition or nature of causation that causes always come before their effects.

- Causal Asymmetry is contingent on how things are at our world.
Primitivist Accounts

Second Objection:

- If there were an asymmetry of production it would be reflected in the laws of fundamental physics.
- But the laws of physics (by and large) have no temporal direction at all! (Bertrand Russell 1912–13)
- The laws determine the past in exactly the same way that they determine the future.
- They also take the same character in each temporal direction.
- So there is no primitive asymmetry in time or the laws.
Primitivist Accounts

- Russell used points like this to argue that there was no causation.
- Most don’t agree with this conclusion.
- Nancy Cartwright argued that we need causation to distinguish between effective and ineffective strategies.
- But most think there is a project of explaining why causation is temporally asymmetric, even though the laws of fundamental physics are not.
Primitivist Accounts

Third Proposal (~David Hume)

1. It is part of the definition or concept of causation that causes always come before their effects.

2. Causal Asymmetry is true as a matter of stipulation.

► But this doesn’t explain why we define causes this way—why we care about causation and not causation* (which is like causation, only it goes backwards as well as forwards).
Primitivist Accounts

Fourth Proposal (Causal Theory of Time):

1. It is part of the definition of time that temporal direction follows causal direction.
2. So causes must always come before their effects.

The Causal Theory of Time might be true.

But it doesn’t explain why all the causal relations at our world face in the same way. (The Causal Theory of Time is compatible with their being temporal and causal loops.)
Overall, there might be a close relation between the direction of time and the direction of causation.

But there is still a further substantive project of explaining why causes come before their effects at our world.
2. Counterfactual Accounts

A second kind of account does attempt to offer a substantive account of the Asymmetry of Influence.
‘Counterfactuals’: Claims about what would be the case, were something else to happen (typically something that doesn’t actually happen)

Expressed in English by subjunctive conditionals: “If I were to eat that rhubarb, I would enjoy it”.

If X were to happen, Y would happen.

X is the antecedent; Y is the consequent.
Counterfactual Accounts

There appears to be a relation between causation and counterfactuals:

- I drop the vase and it smashes.
- If I hadn’t dropped the vase, it would not have smashed.
- So my dropping the vase caused it to smash.

- If I hadn’t done X, Y would not have happened.
- So X causes Y.
David Lewis (1973) argued for a counterfactual account of causation.

X causes Y just in cases X ‘counterfactually depends’ on Y (or there is a chain of such dependencies linking them).

If X and Y happen in the actual world, then X counterfactually depends on Y just in case if X were not to happen, Y would not happen.
Lewis (1979) argued that his account could explain causal asymmetry.

If the past never counterfactually depends on the future, then there can be no backwards causation.

Lewis argued that (with tiny tiny exceptions) the past never counterfactually depends on the future.
Counterfactual Accounts
Counterfactual Accounts

- Why think the past never counterfactually depends on the future?
- Lewis thought this was because the past leaves lots of records in the future.
- It’s very easy to change a small thing about the present so as to lead to a very different future. But you can’t make small changes to the present to imply a different past—the records get in the way!
- Counterfactuals are about making only small changes.
Lewis wasn’t quite right about what was needed to explain the asymmetry of counterfactual dependence.

(It turns out a tiny difference in the present can lead to a very different past, as well as a very different future.)

But many think he was on the right track.
A current research program attempts to explain causal asymmetry using asymmetries of records and probability.

Causation goes forwards in time because the future probabilistically depends on local present events in a way the past does not.

The program attempts to explain a whole series of temporal asymmetries, including those of entropy, records, memory and causation.
Counterfactual Accounts

But there are concerns:

1. Some have worried that if you can just ‘make up’ how we evaluate counterfactuals, it’s too easy to rig the account so as to deliver causal asymmetry.

2. These accounts always have exceptions—cases where the past does depend on the present.

The game has often been to then argue that these forms of dependence don’t really count as robust forms of *control* of the kind agents would care about.

And that has led some to consider a different kind of account...
3. Agency Accounts

- Most accounts of the asymmetry of influence focus on causation.
- But one kind of account focuses on the asymmetry of control, and asks, why is it that we control at least some future events and no past ones?
Agency Accounts

- These kinds of accounts follow Cartwright, in thinking causation is tied to effective strategies.
- The reason we care about causation is that knowing what the causal relations are can help us make good decisions in the present.
- We care about causation because we care about control.
- Even though there is causation when we can’t control something, control cases are the more central for thinking about causation.
Agency Accounts

- When do we control events?
- We control events when they depend appropriately on our decisions now—i.e. when they are *correlated* with our decisions now.
Huw Price (1989) developed an ingenious argument for the claim that we would never take ourselves to control the past, even in cases where it appears our decisions will be correlated with past events.
Agency Accounts

- You know you reliably get a craving for chocolate about 1 hour before you get a bad headache (and not at other times).

- You know your eating chocolate and deciding to eat chocolate are reliably correlated with a pre-headache state (that causes both the headaches and the chocolate craving).

- Can you then control whether you were in the pre-headache state by deciding not to eat chocolate?
Price: No! Or (at least) you wouldn’t take yourself to control the pre-headache state.

If you take your deciding not to eat chocolate to be caused by your desire to avoid the headache, you will no longer take it to be indicative of your not being in the pre-headache state.

You can’t (from your point of view) avoid the pre-headache state by avoiding eating chocolate.
Agancy Accounts

Price:

- Any time there’s a correlation between what an agent decides to do now and a past state of affairs, that correlation would be destroyed (from the agent’s point of view), were they to try and use the correlation to control the past state.
Price talks about how agents would *think*, and does this in *causal* terms.

Most have not wanted to merely explain why we *think* we can’t influence the past. They want to explain why we *can’t*!

It seems we also shouldn’t be using causal notions to explain why we can’t influence the past.

So a number of people (myself included) have attempted to develop more ‘objective’ versions of agency accounts that don’t use causal notions.
Agency Accounts

- Deliberative Account: X causes Y just in case an agent deciding on X for the sake of Y would raise the objective probability of Y (compared to deciding some other way).
- While the account refers to agents, it also uses objective probabilities (in place of the agent’s beliefs).
- Rather than using causal notions, this account appeals to the kind of evidence agents would typically have access to.
Agency Accounts

- But there are still problem cases.
- And there are still worries about whether these kinds of accounts can deliver all the causal relations there are.
- For this reason, some also explore a fourth kind of account that uses probabilities, but without appealing to agents.
3. So, Where Are We?

- Some accounts of causation pay more attention to counterfactuals, others pay more attention to situations involving agents, and others pay more attention to objective probabilities.
- Which accounts people prefer is often based on broader philosophical preferences.
- But there are some hints that these accounts are converging on a single phenomena.
- There are also some general lessons we can draw, even before this debate is settled.
Concerning Causation:

- Causation as a ‘macroscopic’ phenomena—we can’t understand its workings by looking to fundamental physics alone.

- There is a link between causation and control—cases of control are particularly helpful for thinking about causation.

- There is a link between causation and evidence/knowledge/probabilities—causal asymmetry relates to asymmetries of memories, and records.
Concerning ‘metaphysics’ and philosophy of science:

- There is a broadly philosophical/scientific program of explaining why phenomena are directed in time.
- Both fundamental features of the world and features of us may be required to think about even relations that seem fundamental.
Concerning philosophy:

- Even if science doesn’t have all the answers, it can be a source of puzzles as well as solutions—like philosophy, it can teach us to be skeptical about the obvious.

- Even if we should accept that something is the case, knowing more about why it is the case can open up new questions elsewhere.
Further Reading