

Do we Have Free Will?

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What Does it Mean to Have Free Will?

The two issues on the table
from last week

- Whether **everything** (the future, our actions, etc.) is **predetermined**
- Whether we have **free will** to act and choose

What Does it Mean that Everything is Predetermined?

Determinism

According to the laws of nature, every event is caused by another event which in turn is caused by yet another event and so on.

The causal chain that leads to the occurrence of an event is such that the event in question will *inevitably* happen.

Think of an object falling down. If I am holding an object at a certain height and I let it go, the object will inevitably fall down because of gravity. It is predetermined that in letting the object go, it would fall downward (and not upward).

Now, if you extend this picture to everything that happens, even to human actions, that's determinism.

A Famous Statement that Everything in the Universe is Predictable and Predetermined

“Given for one instant an intelligence which could comprehend all the forces by which nature is animated and the respective positions of the beings which compose it, if moreover this intelligence were vast enough to submit these data to analysis, it would embrace in the same formula both the movements of the largest bodies in the universe and those of the lightest atom; to it nothing would be uncertain, and the future as the past would be present to its eyes.” (Laplace, 1749-1827)



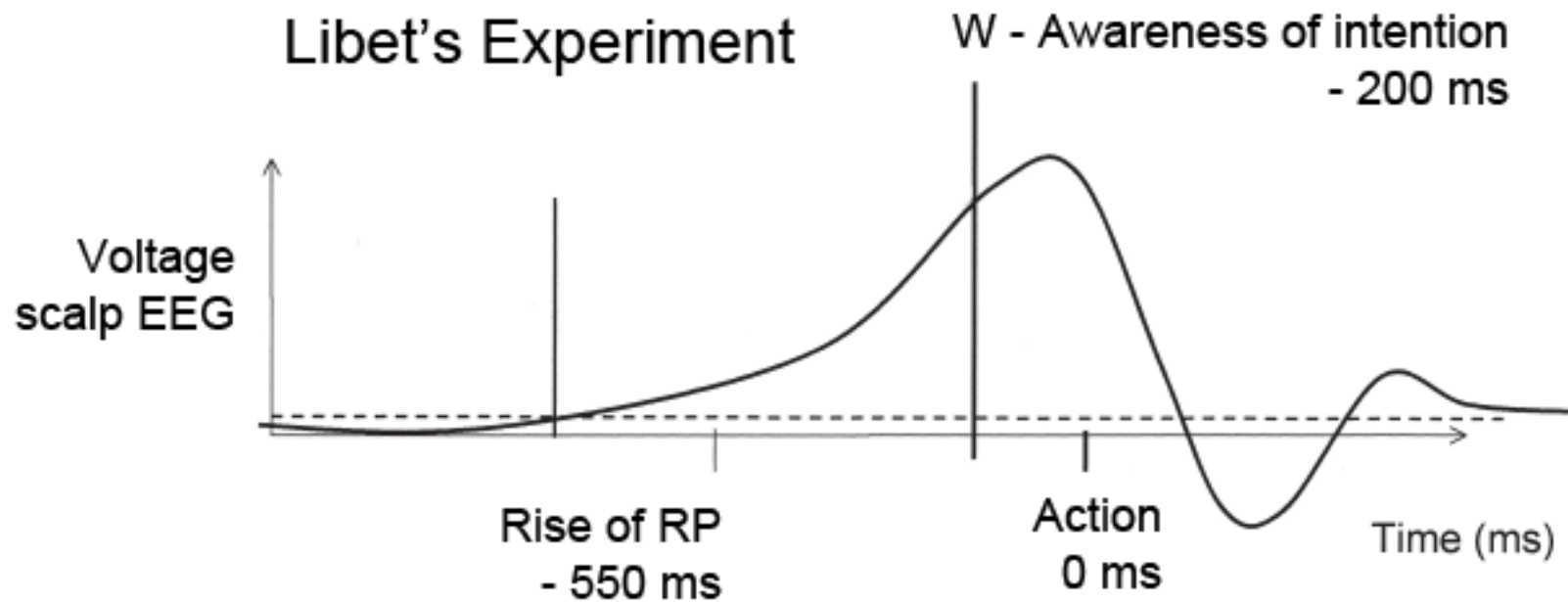
Arguments for the Conclusion that Everything is Predetermined

Aristotle's sea battle argument

Findings from genetics and
neuroscience

From Last Week:

Libet's Experiment in the 1980's



Brain activity in the form of the *Readiness Potential* starts 550 ms before the action, although the conscious intention to act occurs only 200 ms before the action. *Brain activity precedes our conscious intention to act.*

From Last Week: Another Experiment

John-Dylan Haynes from the Bernstein Center for Computational Neuroscience in Berlin conducted an experiment that shook his view of life. In the experiment .. the subjects were free to press a button with either their left or right index fingers whenever they felt the urge.

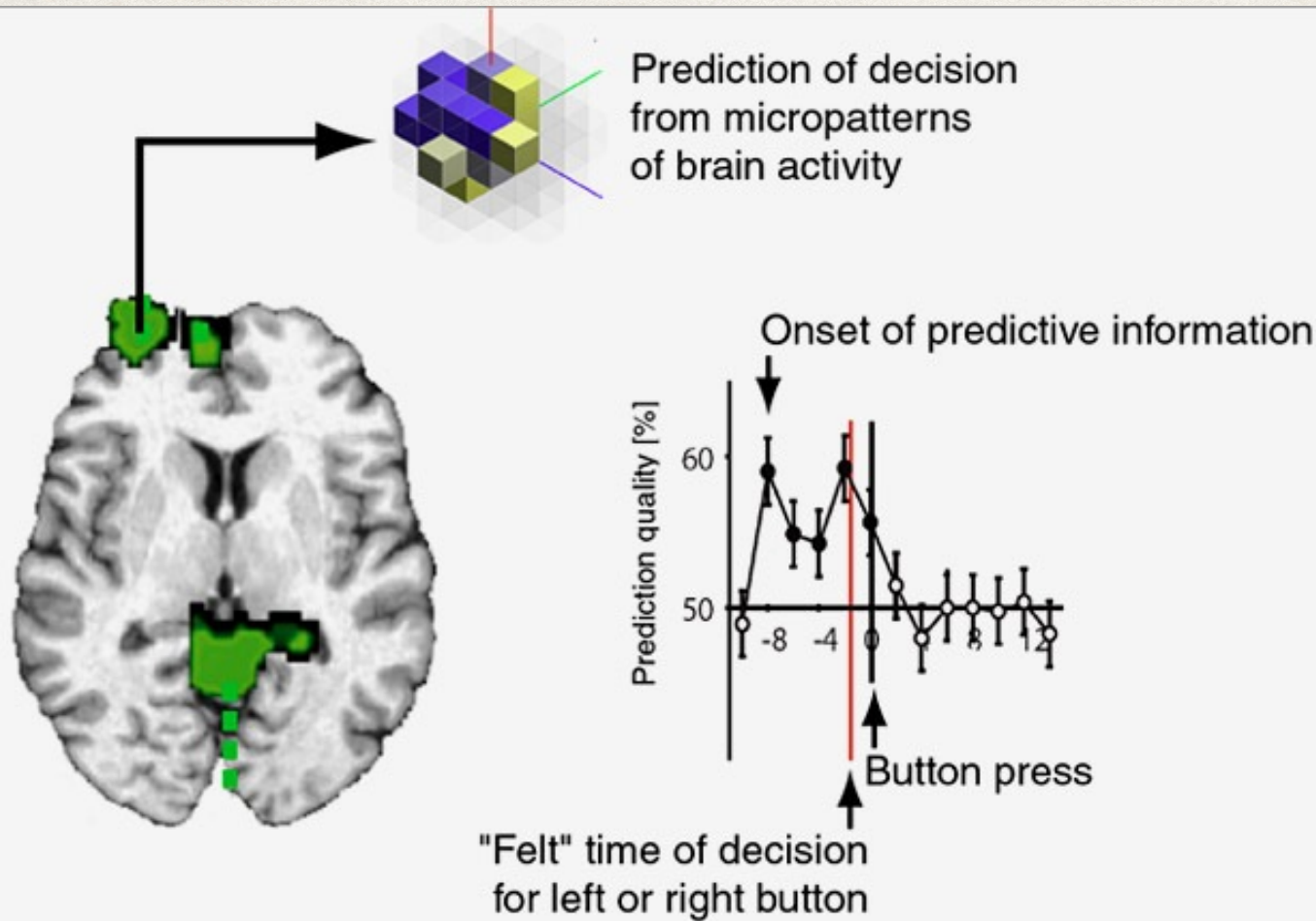
... the *conscious decision* to press a button occurred about **a second before** the act was performed.

....the observation of *patterns of brain activity* could reliably predict the decision up to **seven seconds in advance**.

Unconscious determinants of free decisions in the human brain.

Soon CS, Brass M, Heinze HJ, Haynes JD.

Published in Nat Neurosci. 2008 May;11(5):543-5.



Haynes found that

- (1) the conscious decision is preceded by brain activity, and
- (2) by decoding the patterns of brain activity (*see green patterns*), we can reliably predict our actions well before our conscious decisions.

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The Significance of the Libet's and Heynes' Experiment

These experiments do not directly show that we lack free will, but they suggest that our decisions and actions are predetermined in advance.

1. Both experiments show that our conscious decisions are preceded by some electrochemical activity in the brain.
2. The patterns of electrochemical activity in the brain determines what our next action will be without us having any ability to change it; *see in particular the Haynes' experiment.*
3. Since the patterns of electrochemical activity in the brain are subject to the laws of nature, these patterns are predetermined in advance (just as it is predetermined that in letting an object go, it would fall toward gravity).

From John-Dylan Haynes' Website

“Decisions don’t come from nowhere but they emerge from prior brain activity. Where else should they come from?”

In theory it could be possible to trace the causal pathway of a decision all the way back to the big bang.

Our research shows that we can trace it back 10 seconds. Compared to the time since the big bang this is not very long.”

From the question

whether everything is predetermined

to the question

whether we have free will

Possible Positions

Everything is predetermined

We have
free will

We don't
have free will

Where do you stand?

What Does it Mean To Have Free Will? *An Attempt at a Definition*

Free Will

This is the power to act and do otherwise. It is the power to have made a choice other than the choice one actually made.

Is Determinism Compatible With Free Will? *It seems Not*

An argument that determinism is incompatible with free will:

If all events —including our own actions — happen necessarily because they are caused by previous events, then we do not have the power to change them and act otherwise. *So, if determinism is true, we do not have free will.*

van Inwagen's Argument

- *If determinism is true, then free will is impossible. Here is why:*
 1. Free will is the power to have made a different decision than the one presently made, so free will is the power to change the present.
 2. Determinism means that the present is uniquely determined by the past and by the laws of nature.
 3. So, in order to change the present, one has to change the past or law the laws of nature
 4. But one cannot change the past nor the laws of nature
 5. So, one cannot have the power to change the present, so one cannot have the power to have made a different decision.

Looks Like Determinism is Incompatible with Free Will

But What if Determinism is False?

Is Non-Determinism Compatible with Free Will?

Non-determinism is the idea that some events happen by chance or accident. They could not be predicted.

It *seems* that if some events — including our own actions — happen by chance and accident without being predetermined in advance, there is room for free will.

But Is Non-Determinism Really Compatible with Free Will?

- ❖ Non-determinism means that some events happen by chance or by accident as opposed to everything happening inevitably or by necessity.
- ❖ But just as we do not have the power to change what happens by necessity, we do not have the power to change what happens by chance and accident either.
- ❖ We are powerless with respect to what happens by chance and accident. *If non-determinism is true, we do not have free will.*

Can You Change the Outcome of a Random Event?



The outcome of a random event is something we cannot control...

The Puzzle About Free Will

- ❖ If everything is predetermined in advance, then we cannot have free will.
- ❖ If *not* everything is predetermined in advance and some events happen by chance and accident, then we cannot have free will either.
- ❖ *So either way, we lack free will.* How can that be?