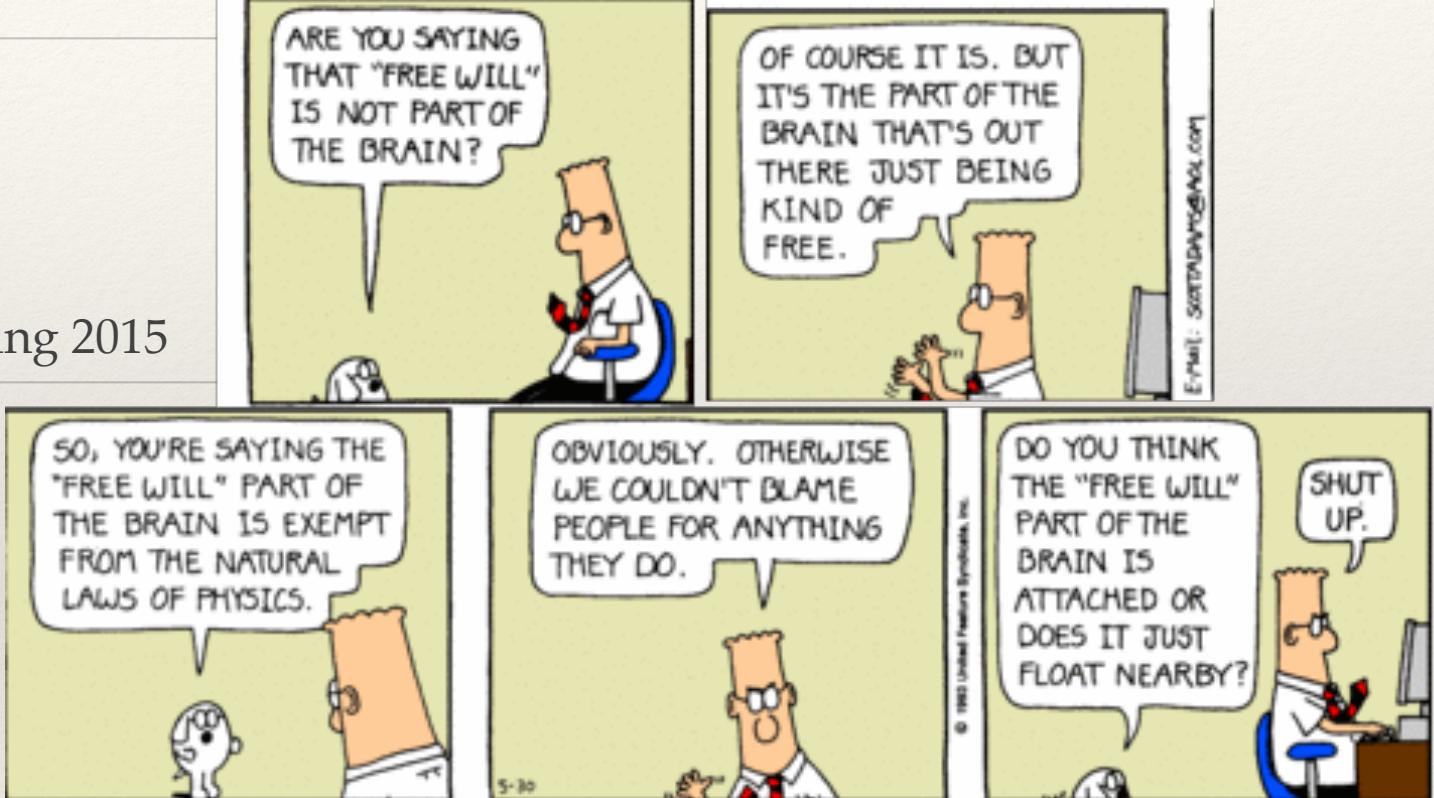




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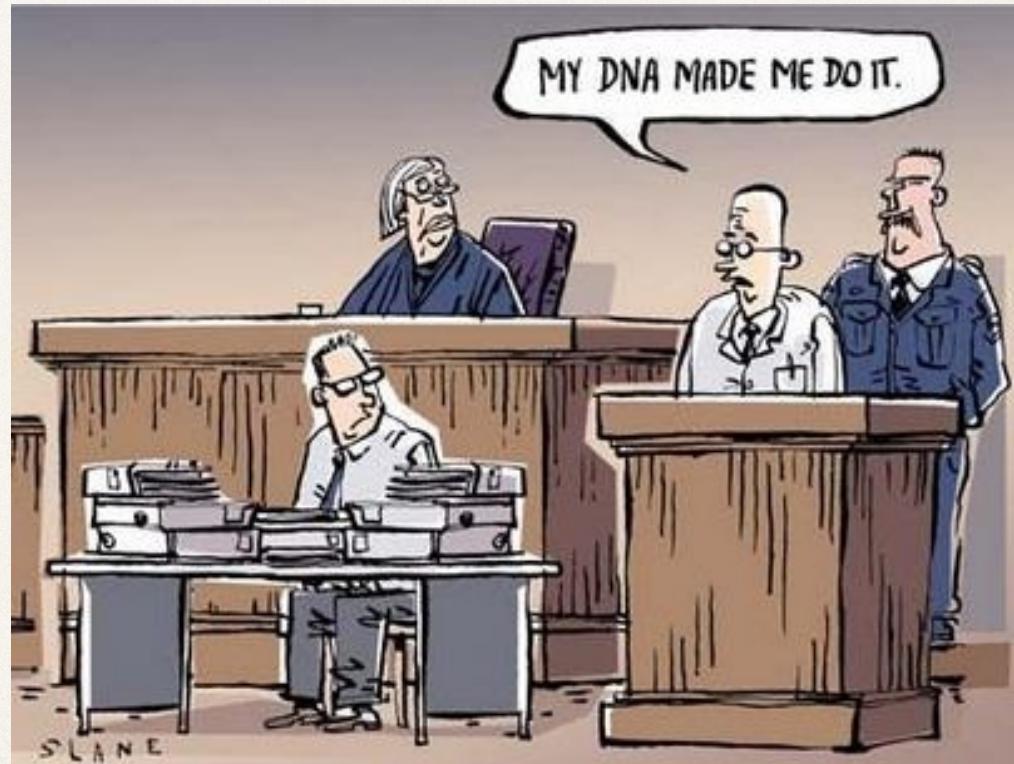
Philosophy of Law - Spring 2015



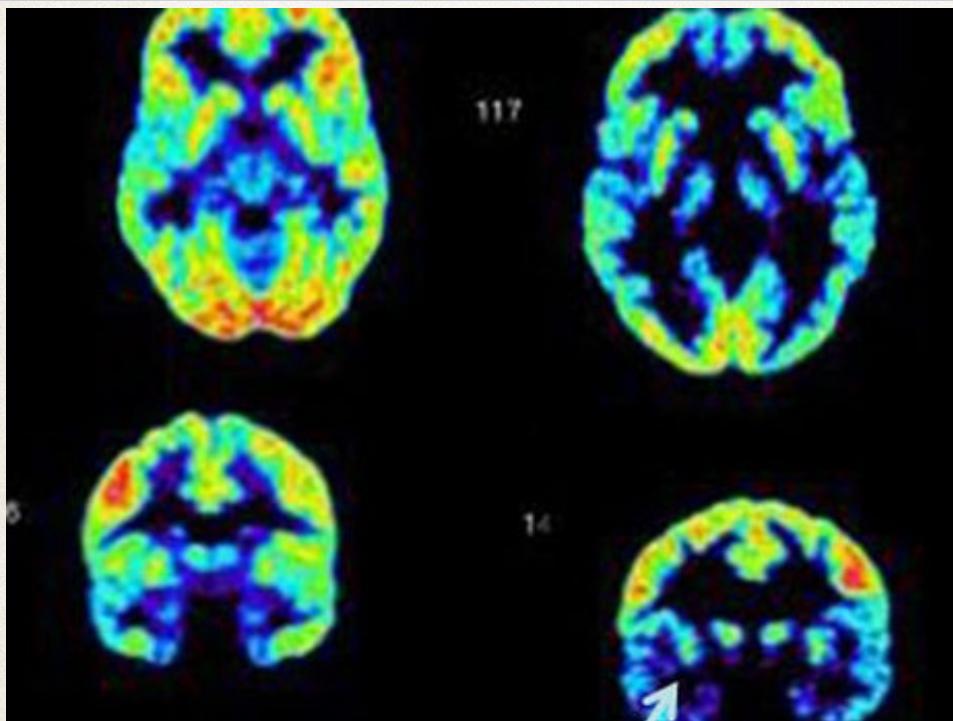
Are Our Actions Predetermined?

Findings from Genetics

Jim Fallon from the University of California at Irvine also found that those who committed violent crimes typically have what has been called the **"warrior gene"**—a particular gene that is associated with violent behavior.



Findings from Brain Studies



Jim Fallon from the University of California at Irvine studied the brains of people who committed violent crimes. He compared their brains with the brains of non-criminals. The brain on the right belongs to a criminal and the brain on the left belongs to a non-criminal.

Caveat

Jim Fallon, however, also found that he himself has the warrior gene, although he has never committed a crime!

So, one's genetic makeup is not sufficient to trigger violent behavior. The warrior gene simply *predisposes* one to violence.

Still, the combination of the warrior gene *plus* a certain social environment might very well cause criminal behavior.

Warrior Gene Predicts Violent Behavior in Response to Provocation

*"There is some evidence of a main effect for genotype and some evidence for a gene by environment interaction, such that MAOA [=warrior gene] is less associated with the occurrence of aggression in a low provocation condition, but **significantly predicts such behavior in a high provocation situation.**"*

"Monoamine oxidase A gene (MAOA) predicts behavioral aggression following provocation" by McDermott, Tingley, Cowden, Frazzetto and Johnstone in Proceeding of the National Academy of Science of USA, 2009

In other words, people with the warrior gene are *more likely* to behave violently than people without the warrior gene, provided they are provoked.

The Warrior Gene in the Courtroom

2009 Tennessee. Bradley Waldroup was accused of murder but the jury convicted him of a less severe crime because experts for the defense testified that Waldroup, *first*, had the warrior gene, and *second*, was abused as a child.

“Do Our Genes Excuse Immoral Behavior?”
<http://www.youtube.com/watch?v=4JldJFUgWyw>

But can we let pedophiles, rapists and murderers off the hook because they have the warrior gene and grew up in a violent environment?

(a) Warrior Gene

(b) Growing up in a violent environment

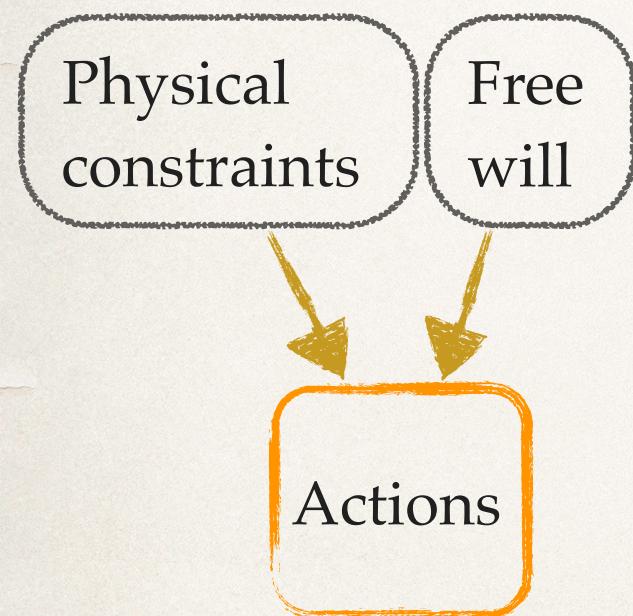
Provocation

Significant increase in likelihood of aggressive and violent behavior compared to an individual lacking (a) and (b).

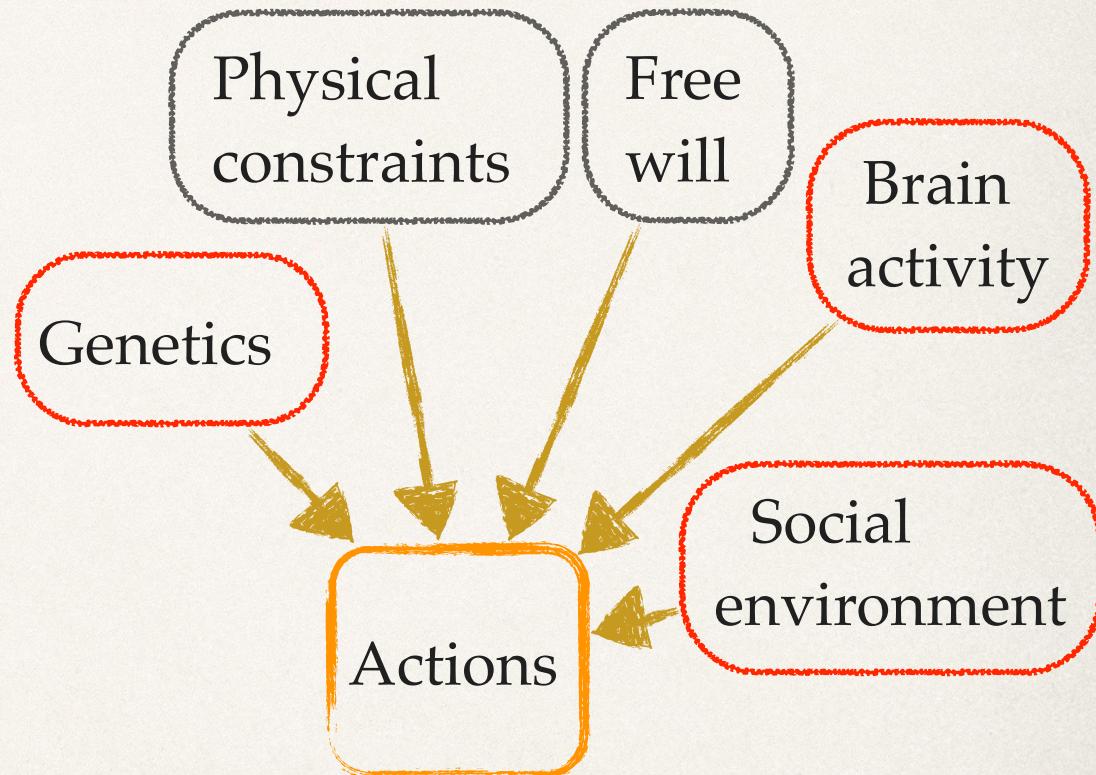
"Monoamine oxidase A gene (MAOA) predicts behavioral aggression following provocation" by McDermotta, Tingleyb, Cowdenc, Frazzettod and Johnsone in Proceeding of the National Academy of Science of USA, 2009

Findings from genetic, brain studies, and behavioral studies *do not completely eliminate* the role of free will in our choices and actions, but...

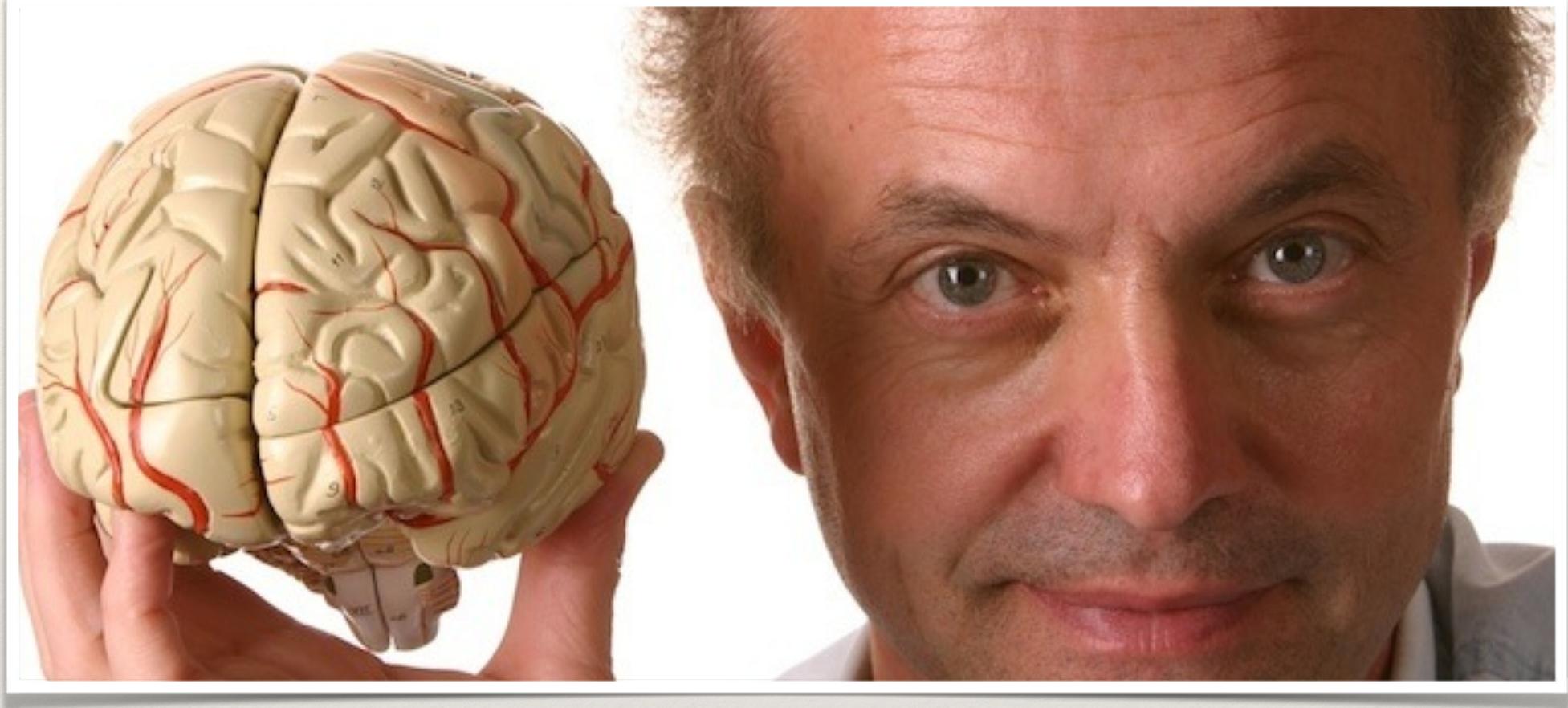
OLD PICTURE



NEW PICTURE

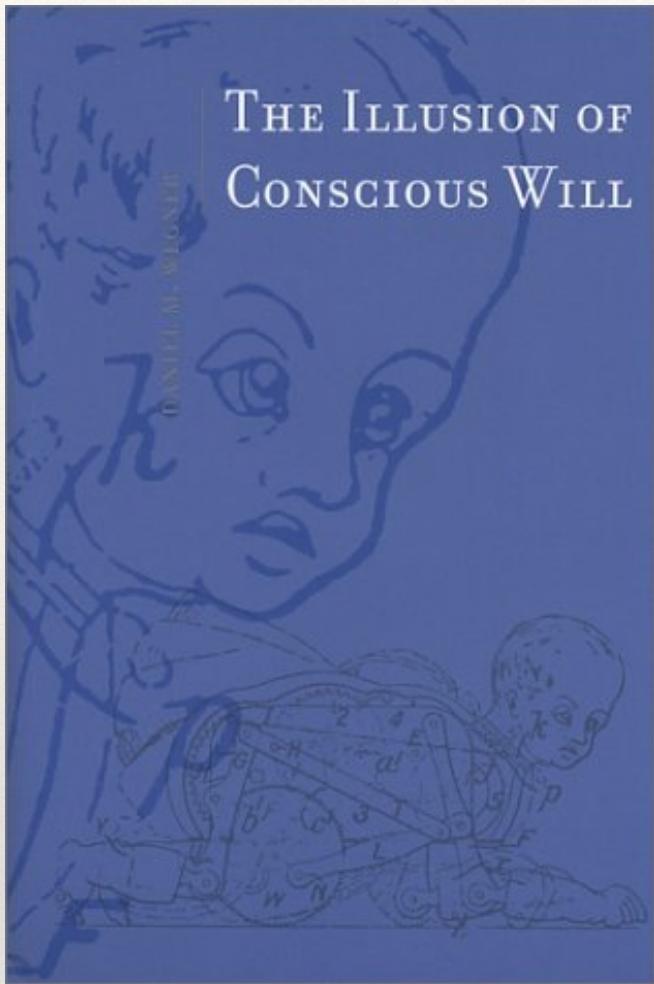


Since free will is one factor among many others, its role is less central in influencing our choices and actions than we might have thought.



Adrian Raine, *The Anatomy of Violence*

<http://www.vice.com/read/the-anatomy-of-violence>



Daniel Wegner (2003),
*The Illusion of the
 Conscious Will*, MIT
 Press

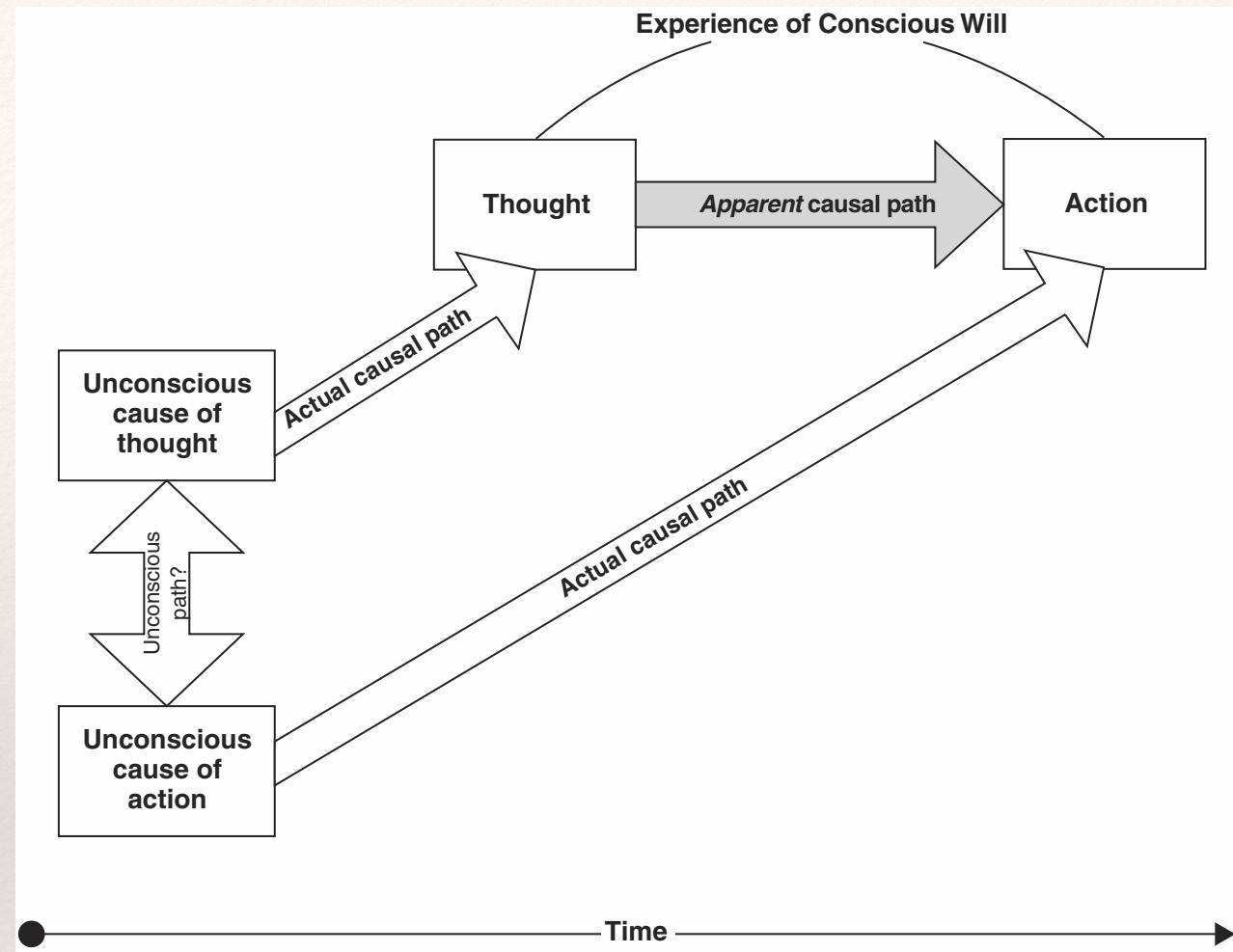
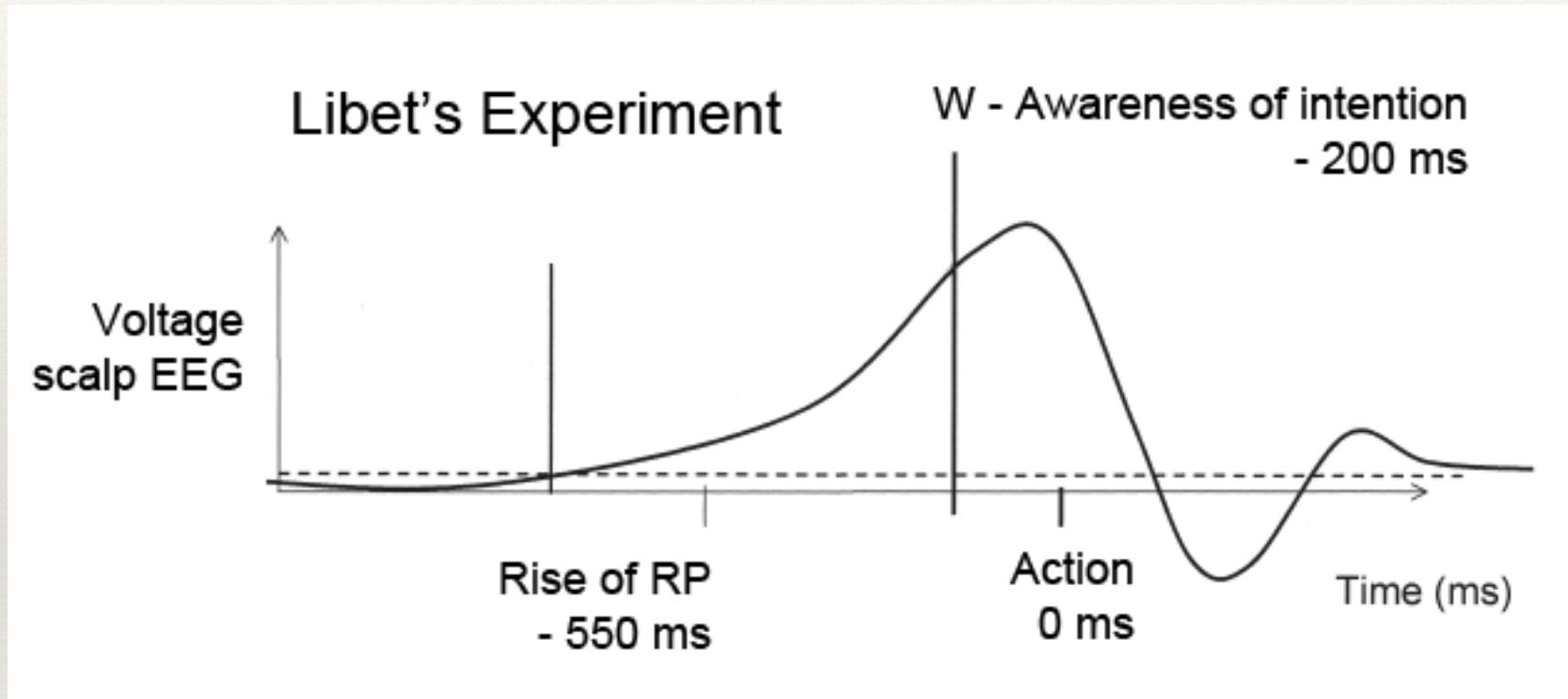


Figure 3.1

The experience of conscious will arises when a person infers an apparent causal path from thought to action. The actual causal paths are not present in the person's consciousness. The thought is caused by unconscious mental events, and the action is caused by unconscious mental events, and these unconscious mental events may also be linked to each other directly or through yet other mental or brain processes. The will is experienced as a result of what is apparent, though, not what is real.

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.*

How the Experiment Was Conducted

Box 1 | Measuring conscious intention

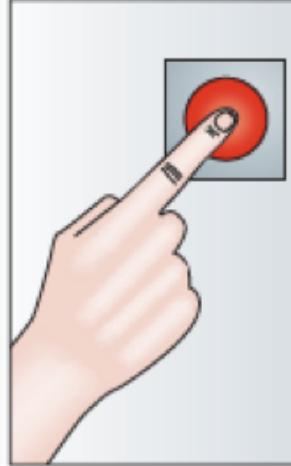
1 Observe clock



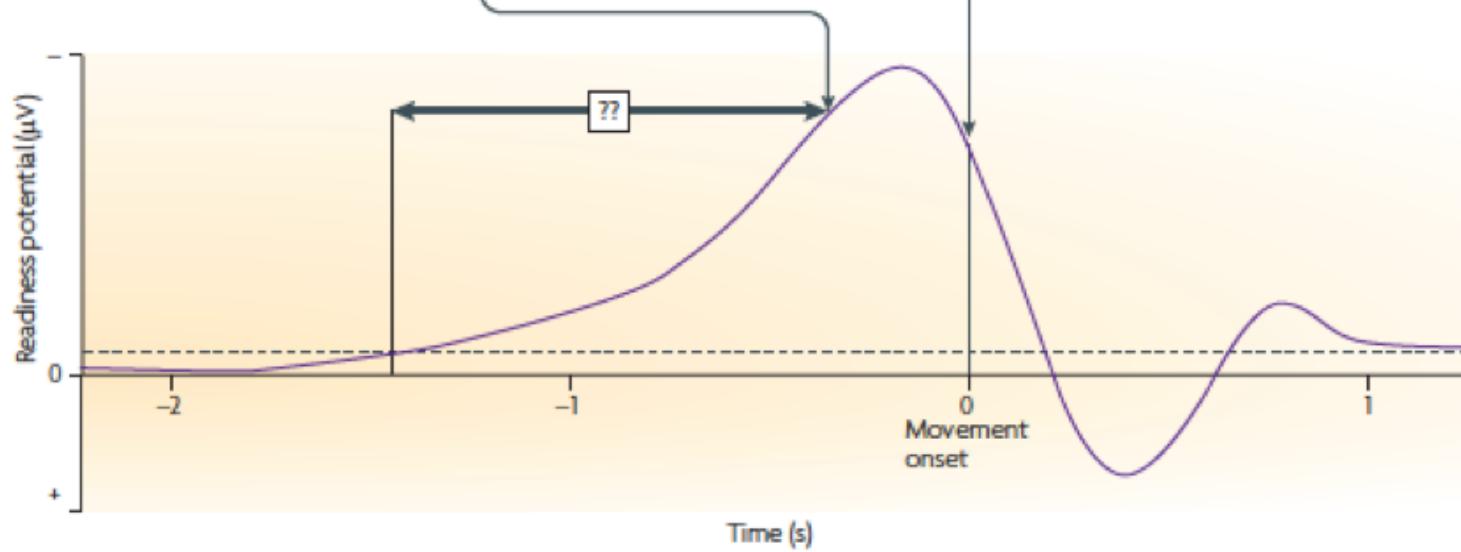
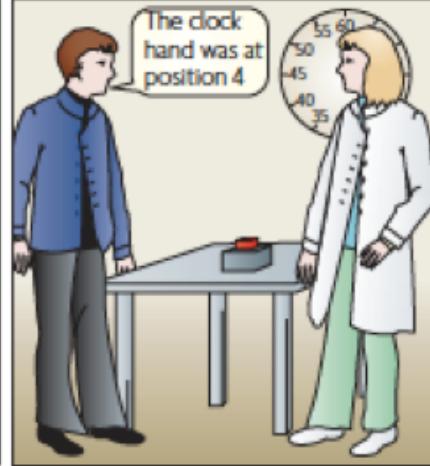
2 Note clock position at time of conscious intention (urge to act)



3 Perform action



4 Report clock position at time of conscious intention



Subjects were asked to report when they felt the intention to act by looking at a clock. The clock was not a normal clock but allowed greater precision.

John-Dylan Haynes Experiment

The subjects were free to press a button with either their left or right index fingers whenever they felt the urge.

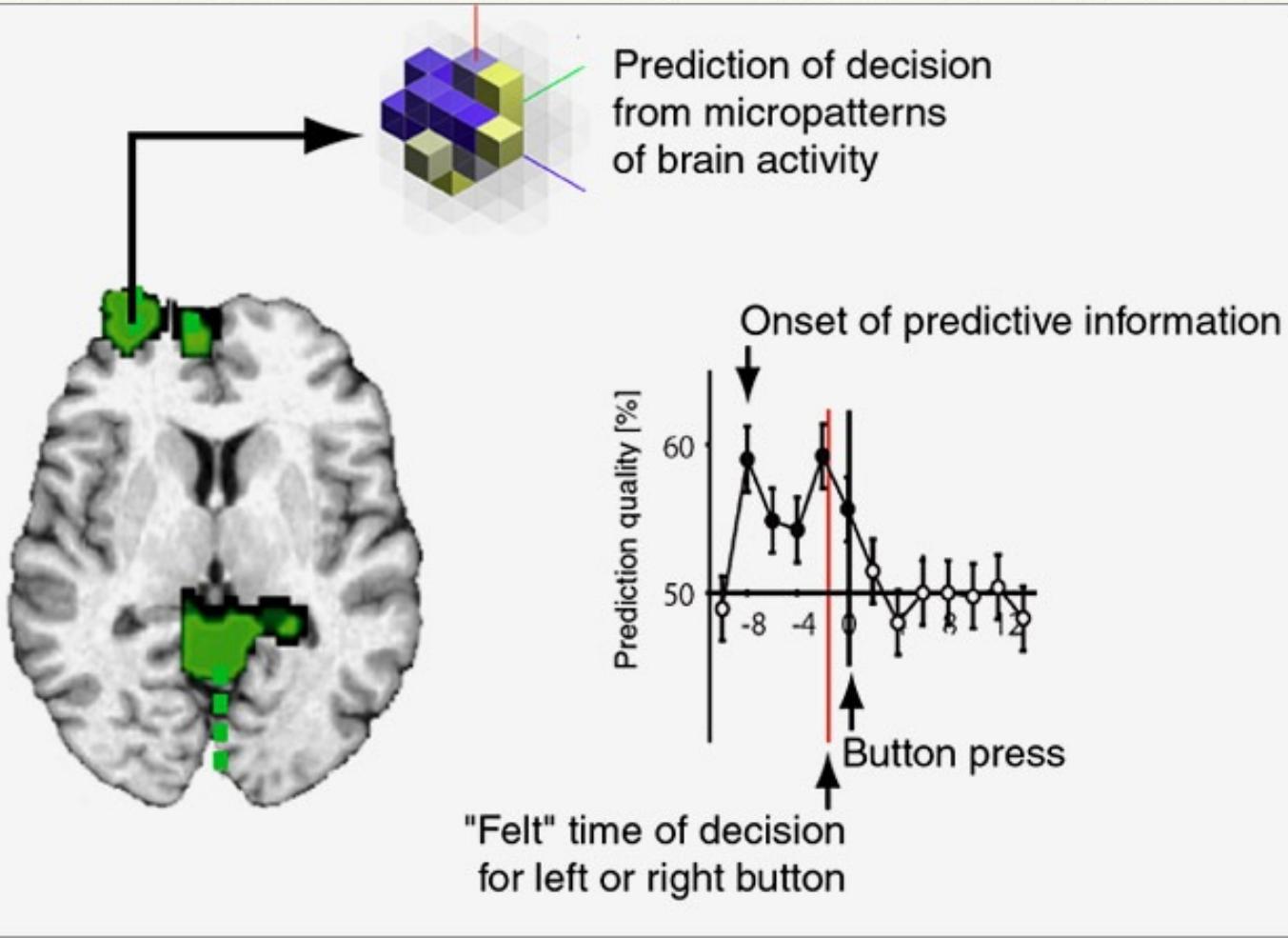
... the *conscious decision* to press a button occurred about a **second before** the act was performed.

....the observation of *patterns of brain activity* could reliably predict — with 60% accuracy — 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.



Unconscious determinants of free decisions in the human brain.

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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.

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.”

Everything is 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)



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).

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

What About Free Will?



Four Issues to Keep Distinct

1. Whether **our actions** are predetermined
2. Whether we have **free will** to act and choose
3. Whether we can be held **legally accountable** for our actions in a court of law
4. Whether we should be **punished** if we break the law