

Free will,
determinism, &
indeterminism

Our topic today is, for the second day in a row, freedom of the will. More precisely, our topic is the relationship between freedom of the will and determinism, and a cluster of arguments which seem to show that free will is **incompatible with both determinism and indeterminism, and hence impossible.**

To answer understand these arguments, we first need to get clear about what “determinism” means. Here is what van Inwagen says:

Determinism is the thesis that it is true at every moment that the way things then are determines a unique future, that only *one* of the alternative futures that may exist relative to a given moment is a physically possible continuation of the state of things at that moment. Or, if you like, we may say that determinism is the thesis that only one continuation of the state of things at a given moment is consistent with the laws of nature.

The example of “rolling back history” as an illustration of what determinism implies.

It is common to use “determinism” as name for the thesis that we have no free will. This is the source of much confusion. **“Determinism” is the name of a thesis about the laws of nature, and that is all. It is not a thesis about free will, or about what we can predict, or anything else.**

Determinism

Only one future is consistent with the state of the world at a time + the laws of nature.

Our question is whether determinism is compatible with free will. We now know what “determinism” means; but what does it mean to say that we have free will?

Here no neat definition is possible, since there is disagreement about what, exactly, it takes for an action to be free. But we can offer some helpful paraphrases: to freely choose between A and B is **to be able** to do either of A and B; to freely choose between A and B is for both of A and B **to be open** to you.

The question of the compatibility of free will and determinism is then: can it ever be the case that choices A and B are open to you, despite the fact that the laws of nature (and the prior state of the universe) are consistent only with you doing A?

The **incompatibilist** says “No.” The **compatibilist** says “Yes.”

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Many people have a strong initial intuition that free will and determinism are incompatible, and hence that compatibilism must be false.

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This argument relies on a principle that van Inwagen calls the “no choice principle”:

Suppose that p and that no one has (or ever had) any choice about whether p . And suppose also that the following conditional (if-then) statement is true and that no one has (or ever had) any choice about whether it is true: if p , then q . It follows from these two suppositions that q and that no one has (or ever had) any choice about whether q .

As van Inwagen says, this principle seems intuitively very plausible: “how could I have a choice about something that is an inevitable consequence of something I have no choice about?”

But if this principle is true, we can show -- with the assumption of two other plausible principles -- that free will is inconsistent with determinism.

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Each of the additional principles in van Inwagen's argument says that we have no choice about something.

The first principle is: We have no choice about events which happened in the distant past.

The second principle is: We have no choice about what the laws of nature are.

Putting these principles together, we can construct an argument for the incompatibility of free will and determinism.

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To state the consequence argument, let 'DINOSAUR' stand for the state of the universe during some time when dinosaurs roamed the earth, and let 'DECISION' stand for my decision to not sing the Notre Dame fight song 10 minutes from now.

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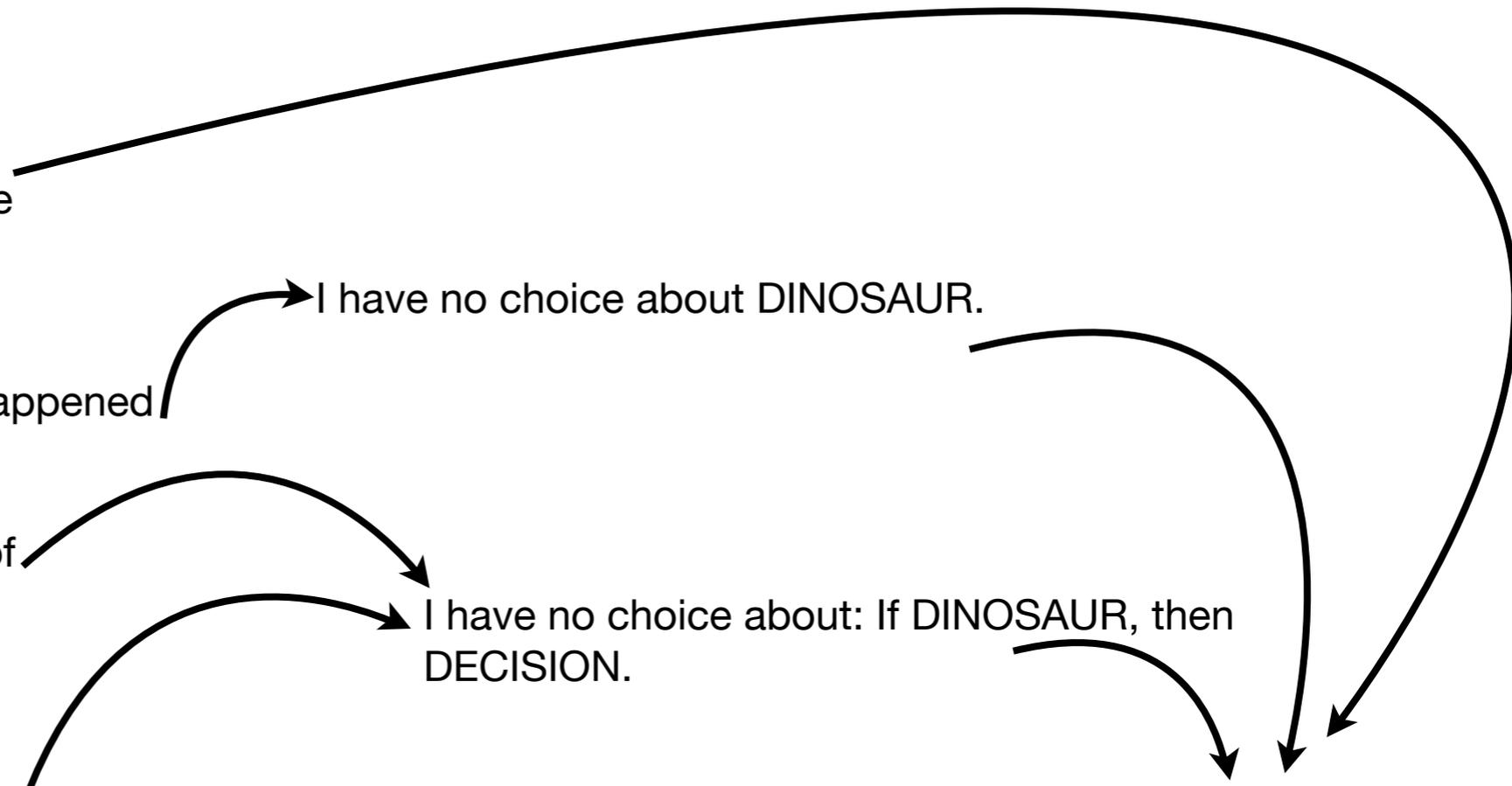
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I have no choice about DINOSAUR.

I have no choice about: If DINOSAUR, then DECISION.

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It is important to be clear about the nature of this argument. We begin by assuming the four principles at left, and from them derive that I have no choice about some future action. Since there is nothing special about DECISION, it seems clear that the argument generalizes to show that I have no choice about any of my future actions. So, if we assume these four principles, we can show of any particular action that it is unfree. Hence, if we assume these four principles, we can show that no action is ever free.

If the first three principles are true -- the No Choice Principle + the claims that we have no choice about the laws of nature or the past -- then, what the argument shows is that **if** determinism is true, **then** we have no free will.

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So to demonstrate the incompatibility of free will and determinism, we assume the truth of determinism, and argue from there to the absence of free will. This is a style of argument called **conditional proof**. To prove the truth of a statement

if p, then q

we assume p as a premise, and argue from this premise, using only other true premises, to q as our conclusion. If we can construct a valid argument with p + some true statements as premises for q, it follows that the conditional statement

if p, then q

must be true. Here p = the truth of determinism, and q = the denial of the existence of free will.

We can lay out the consequence argument in premises as follows:

The consequence argument

1	The laws of nature + the state of the universe at a time imply a unique future. In particular, (let's suppose) the laws imply that if DINOSAUR is the case, then so is DECISION.	Determinism (premise assumed for conditional proof)
2	If the laws of nature imply that X is the case, then we have no choice about X.	No choice about the laws of nature
3	We have no choice about the fact that if DINOSAUR, then DECISION.	1, 2
4	We have no choice about events which happened in the distant past.	No choice about the past
5	We have no choice about DINOSAUR.	4
6	If I have no choice about p, and no choice about whether if p, then q, I have no choice about q.	No choice principle
C	We have no choice about DECISION.	3, 5, 6

If premises 2, 4, and 6 are true, then it follows that if Determinism is true, there is no free will. Hence, if these premises are true, then Incompatibilism is true.

So far, this cannot be considered a paradox.

If the consequence argument succeeds, it establishes only the conditional claim that if determinism is true, then we have no free will (and so also that if we have free will, the world must not be deterministic).

One way to think about this is in terms of the following chart illustrating four possible combinations of views about free will and determinism:

free will + determinism	no free will + determinism
free will + no determinism	no free will + no determinism

In terms of this chart, what the consequence argument establishes, if successful, is that the upper left box does not describe a way the world could be.

It does not, by itself, establish that we do or do not have free will; and it does not by itself establish that determinism is false, or that it is true.

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It does not, by itself, establish that we do or do not have free will; and it does not by itself establish that determinism is false, or that it is true.

However, it does limit our choices. One option is that we **deny the existence of free will**; a second option is that we **accept the existence of free will, but say that this is only possible in an indeterministic world**.

The first of these is an extremely difficult option to accept, for at least two reasons.

First, it is simply extremely hard to believe that I have no choice about what I will be doing 5 seconds from now. And second, it seems that if there is no free will there is no moral responsibility; and it certainly seems that people are sometimes morally responsible for their actions.

So at this point the view that free will exists, but requires the falsity of determinism, looks like a pretty attractive option.

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However, upon reflection this view too can seem difficult to accept, because it can seem difficult to see how the falsity of determinism could make room for free will.

A good way to introduce the first sort of argument is by way of van Inwagen's example of Jane's decision. We are imagining that Jane is deciding whether to say something, and we are granting for now the incompatibilist's idea that if this decision is free, it must not be determined. Then we can imagine the case going like this:



Make a Mental Picture of Yourself

Each contemplated action will, of course, have antecedents in Jane's cerebral cortex, for it is in that part of Jane (or of her body) that control over her vocal apparatus resides. Let us make a fanciful assumption about these antecedents, since it will make no real difference to our argument what they are. (It will help us to focus our thoughts if we have some sort of mental picture of what goes on inside Jane at the moment of decision.) Let us suppose that there is a certain current-pulse that is proceeding along one of the neural pathways in Jane's brain and that it is about to come to a fork. And let us suppose that if it goes to the left, she will make her confession, and that if it goes to the right, she will remain silent. And let us suppose that it is undetermined which way the pulse will go when it comes to the fork

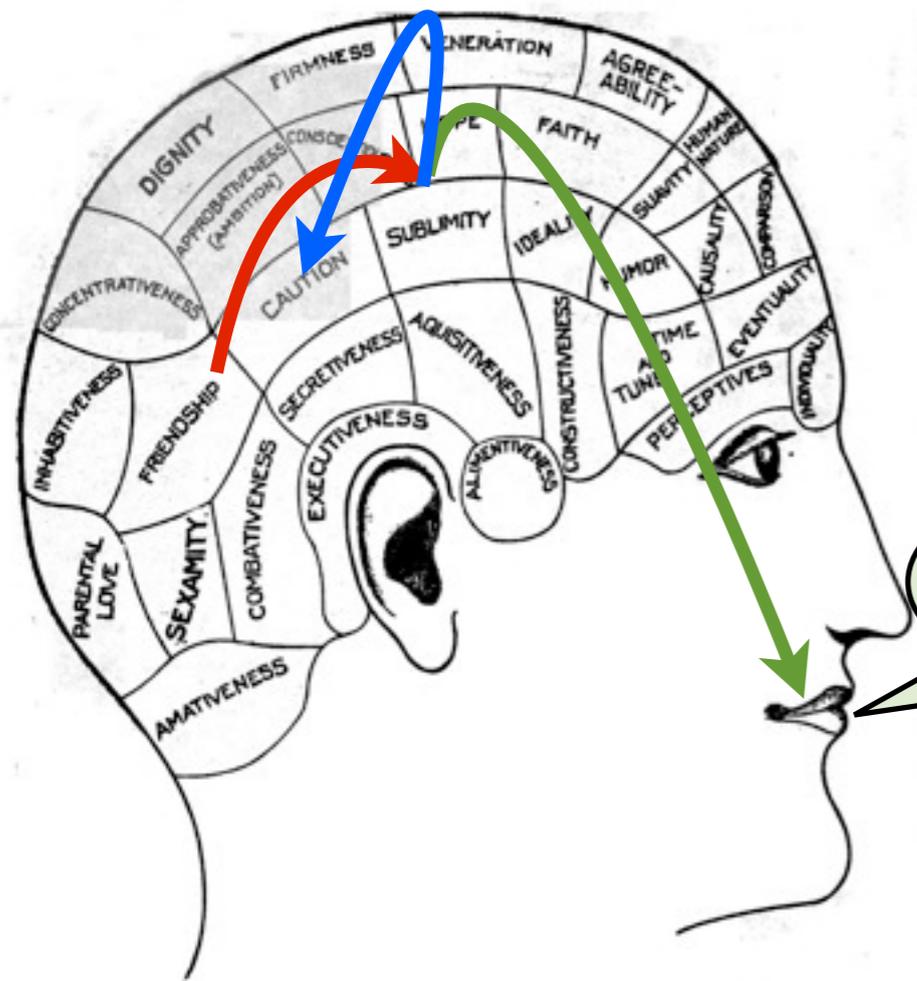
We now imagine the current pulse traveling through Jane's brain.

The pulse could go one of two ways. Which way it goes will determine whether or not Jane speaks; and which way will go is not determined by the the laws of nature + the state of Jane's brain (or the state of anything else).

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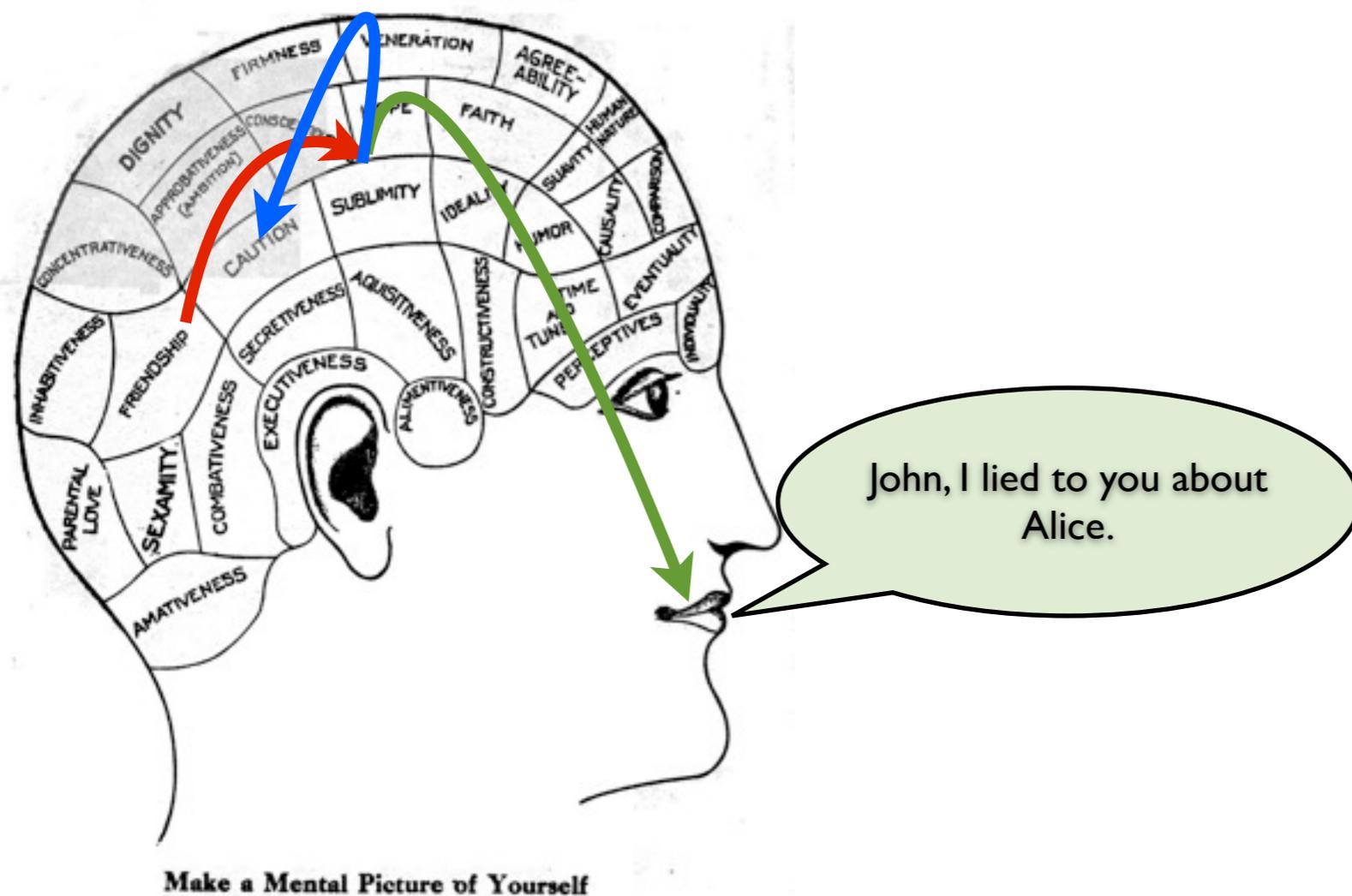
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van Inwagen gives an argument that she is not. For her to be able to decide which way the pulse goes, she must do something prior to the pulse going one way rather than another which determines that the pulse goes that way. But we know that she did no such thing, since the direction of the pulse was undetermined. So she cannot decide which way the pulse goes and the action is not free.

More generally, the idea is this: if we think about the causal chain leading up to some putatively free action A of Jane's, then, if A is really free and incompatibilism is true, there must be some event, E, in this causal chain which is not determined by prior events plus the laws of nature. Further, it seems that for A to be free, Jane must have had a choice about whether E happened. But it is hard to see how Jane could have had a choice about whether E happened, since the entire state of the universe prior to E, including everything Jane does and thinks, is consistent both with E happening and with E not happening. But then it was **not up to Jane** whether E happened at all.

This argument seems to lead to some principle like the following:

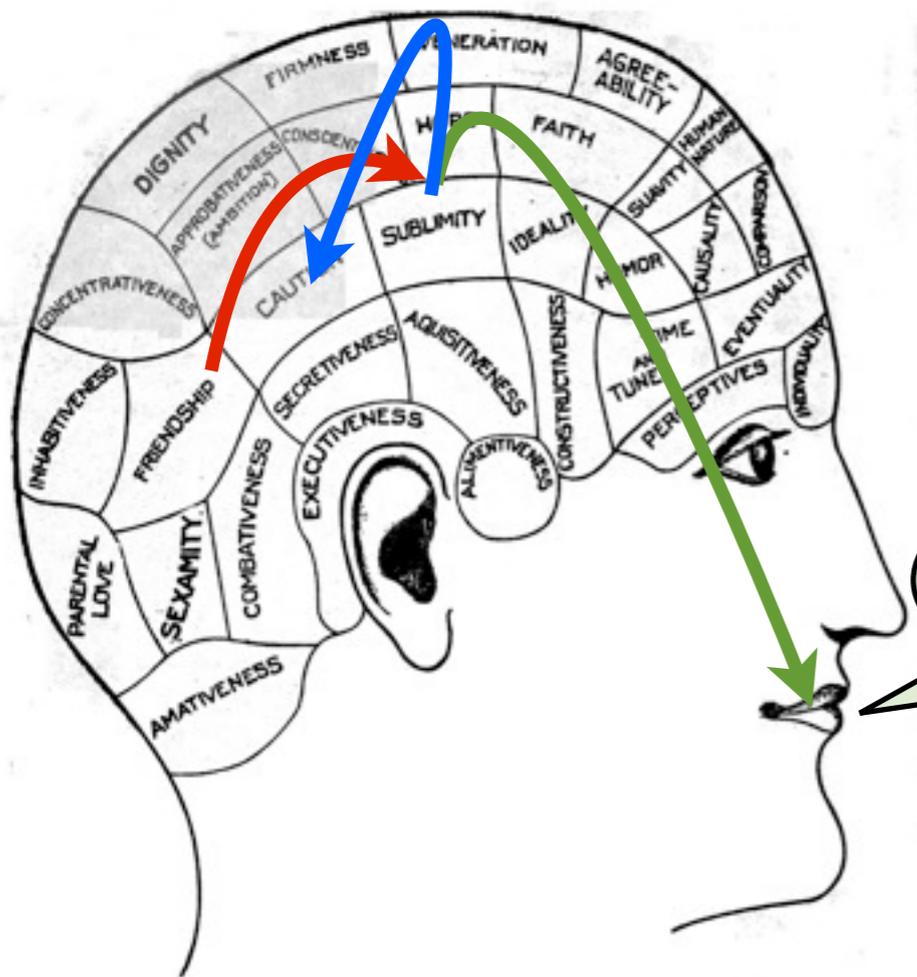
If nothing determines whether someone chooses A or B, the choice of A or B is random, and hence not a free choice.

If any principle of this sort is true, this is serious trouble for the incompatibilist who wants to believe in free will. After all, this sort of principle seems to show that free will **requires** determinism — or at least requires that human actions be determined.

Something like this was the view of David Hume. He thought that genuine free will requires that one's actions be determined by one's prior motives, and that the idea that there is a conflict between determinism and free will just rests on a confusion:



'Tis commonly allow'd that mad-men have no liberty. But were we to judge by their actions, these have less regularity and constancy than the actions of wise-men, and consequently are farther remov'd from necessity. Our way of thinking in this particular is, therefore, absolutely inconsistent; but is a natural consequence of these confus'd ideas and undefin'd terms, which we so commonly make use of in our reasonings, especially on the present subject.



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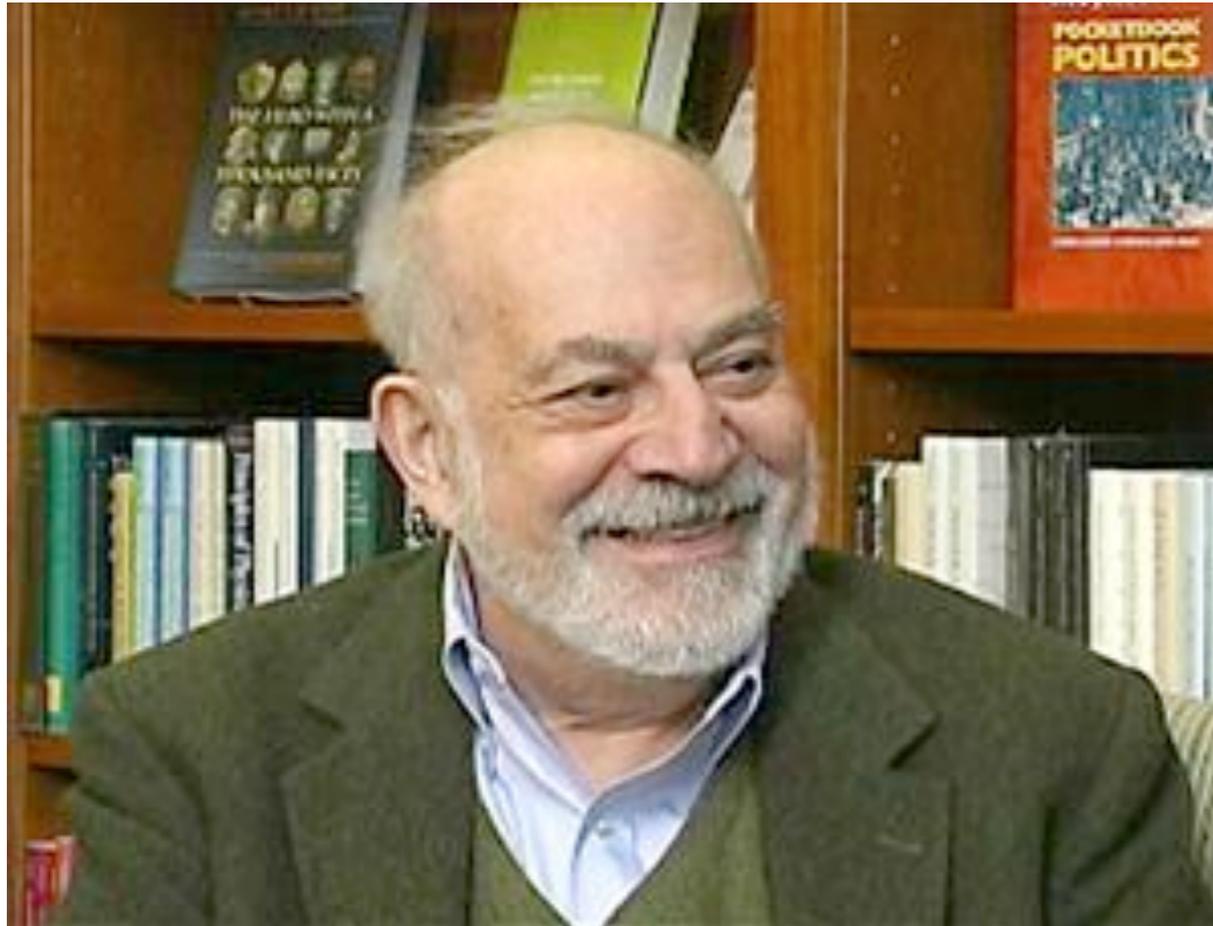
This was part of Hume's argument for **compatibilism**: the view that determinism is consistent with the existence of free will. But, as van Inwagen says, one might take the example of Jane and her brain to show something quite different.

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But now a disquieting possibility suggests itself. Perhaps the explanation of the fact that both compatibilism and incompatibilism seem to lead to mysteries is simply that the concept of free will is self-contradictory. Perhaps free will is, as the incompatibilists say, incompatible with determinism. But perhaps it is also incompatible with *indeterminism*, owing to the impossibility of anyone's having a choice about the outcome of an indeterministic process. If free will is incompatible with both determinism and indeterminism, then, since either determinism or indeterminism has to be true, free will is impossible.

So one problem for incompatibilism + belief in free will is the apparent link between undetermined actions and random actions. A second problem is brought out by an important example due to Harry Frankfurt.



“Suppose someone --- Black, let us say --- wants Jones to perform a certain action. Black is prepared to go to considerable lengths to get his way, but he prefers to avoid showing his hand unnecessarily. So he waits until Jones is about to make up his mind what to do, and does nothing unless it is clear to him (Black is an excellent judge of such things) that Jones is going to decide to do something *other* than what he wants him to do. If it does become clear that Jones is going to decide to do something else, Black takes effective steps to ensure that Jones decides to do, and that he does do, what he wants him to do....

Now suppose that Black never has to show his hand because Jones, for reasons of his own, decides to perform and does perform the very action Black wants him to perform. In that case, it seems clear, Jones will bear precisely the same moral responsibility for what he does as he would have borne if Black had not been ready to take steps to ensure that he do it. It would be quite unreasonable to excuse Jones for his action ... on the basis of the fact that he could not have done otherwise. This fact played no role at all in leading him to act as he did.... Indeed, everything happened just as it would have happened without Black's presence in the situation and without his readiness to intrude into it.”

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Suppose, at time T, that Black decides that he wants Jones on a bus out of South Bend by some later time, T+3. He hopes that Jones will get on the bus of his own accord, but, if he doesn't, plans to force him onto the bus.

Now suppose that, at time T+1, Jones is deliberating about whether or not to take a bus out of South Bend. He goes back and forth, but eventually decides to board the bus.

At time T+2, Jones boards a bus leaving South Bend. This seems (certainly, at least, to Jones himself) to be a free action. Since it never got to time T+3, Black never had to execute his nefarious plan.

But now think about Jones' decision making at time T+1. At that time, it was already determined that Jones would be boarding a bus out of South Bend. After all, Jones must either decide to board the bus, or not. In the former case he gets on the bus, and in the latter case, Black forces him on the bus, so again he gets on the bus. So facts fixed prior to his decision making process determined that he would get on the bus. Nonetheless, his decision to get on the bus seems to be a free action.

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But one might also view the argument another way - especially if one finds the consequence argument for incompatibilism convincing. One might think that what this argument shows is that **if** any of our actual actions are free, then free will is possible even if determinism is true - after all, Jones seems to be free in whatever sense we are free. But then if we think that it is **not** possible for free will and determinism to coexist, it will follow that none of our actual actions are free.

This is why the problem of free will seems so hard: no matter what view one takes of the relationship between free will and determinism, one faces some difficult challenges.

And each of these options, as mentioned, has its costs.

Basically, we have three options:

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Explain how an action can be undetermined without being random, and hence not free.

Make sense of Frankfurt's example; either explain why Jones is really not free, or why Jones's being free is not a genuine example of a free action determined by factors outside of the agent's control.

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This is why free will seems to be such a great mystery. It is clear that one of the views listed at left must be true, but it is hard to see how any of them could be.