Time for Freedom

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1 Introduction

In this paper, I will argue that determinism does not automatically imply that the future is not settled, and neither does indeterminism automatically imply an open future, depending on other basic ontological assumptions about the nature of laws and temporal ontology. I argue that it is thus not determinism, but the question of whether the future is open that should be the crucial issue in the free will debate. Lastly, I will briefly outline an intermediary position between classical incompatibilist libertarianism and classical compatibilism, which is compatible with a fixed future.

2 Time and Freedom

In our quest to argue that determinism alone is not the deciding factor whether agents could have the power to do otherwise, but that temporal ontology and the nature of laws play an equally important role,[1] let us begin by first distinguishing the most prominent temporal ontologies and then classify classical accounts of free will.

Temporal ontologies

The main variables along which to classify the various temporal ontologies are whether there is an objective and progressing present, and whether there are any non-present facts or times. Temporal ontologies in which there is progressing objective present can be called dynamic, and view of time in which there is no objective progression could be called static. The most prominent views in the debate are eternalism, presentism, and the growing block theory [GBT], and the moving spotlight theory [MST]. Of these views, eternalism is the only static view, while the rest are dynamic.

[1] Carl Hoefer in Hoefer (2002) also argues that time, not determinism, is the deciding factor for freedom. However, he argues that freedom is only possible in eternalism, whereas I argue here that eternalism is inconsistent with accounts of freedom that require the power to do otherwise. The word limit prohibits further discussion of Hoefer's view here, but it will need to be addressed in the talk and longer versions of this paper.

Eternalism

Eternalism is the view that all facts, past, present, and future are equally real.[2] There is no objective present and no temporal progression. In its classical form, the entirety of all facts form a four-dimensional block. Ontologically speaking, no fact is temporally privileged over any other: there is no objective now, no objective future, and no objective past. While there is no privileged present, facts can be earlier/later ordered. To use a common example, Caesar's crossing the rubicon is exactly as real as is your reading this paper, or my writing it. But that I am writing this paper in January 2020 is a fact that is earlier in relation to you reading this paper. Both facts are later in relation to Caesar's crossing the rubicon. This is what makes this a classically B-theoretic view of time.

To say that no time, and no fact located at any time, is temporally privileged, and that all facts in the entire four-dimensional block are equally real does not mean that facts that are in the past of the time when I am writing this paper are the case at that time. Dinosaurs timelessly exist. But they exist at their times, not at the time I am writing or you are reading this paper.

You can easily see why this view might be problematic for certain notions of freedom: in a sense, the future is already settled: all facts that are later than the fact that I am writing this paper at the time where I do so are already timelessly the case. They might be epistemically unavailable to me at this time, but they are settled nonetheless. I don't know what I will have for dinner, or whether I will have dinner, on December 21st, 2022, but there already is, and always has been, a fact of the matter as to what my dinner is that day. But if the future is in that sense settled, what could I even choose in when I make supposedly free decisions?

[2] See, e.g., Mellor (1998).

Presentism

A main competitor to eternalism is presentism.[3] In presentism, only the present facts are real. Presentism features an objective, and progressing present. For that reason, presentism is an archetypically A-theoretic view: times are ordered as objectively past, present or future. As the objective present progresses, new facts come to be real and the formerly present facts fad out of existence. There is no past fact of Caesar crossing the rubicon, and neither is there a future fact the universe dying its heat-death. At first sight, presentism has a very intuitive notion of an open future: there simply are no future facts. Whether there is a way to restrict the range of future possibilities in such a view is an issue that we will return to shortly.

The Growing Block Theory

The GBT can combine a notion of an ontologically open future with the notion of a fixed, and real past.[4] The GBT can be seen as either the best or the worst of both worlds in relation to presentism and eternalism, depending on where you stand in the debate. In the GBT, both past and present facts are real, while the future ones are not. Like presentism, the GBT is an A-theoretic view: there is an objective present, whose progression brings new facts into existence. That way, the GBT can combine some important aspects that eternalism and presentism cannot both feature. It can thus satisfy an intuition that presentism alone cannot, at least not without some more elaboration: while in presentism, both past and future facts are not real, there seems to be an asymmetry: while the future may be open, the past is fixed. The GBT can pay justice to both these notions, while also featuring an objective and progressing present.

[3] See, e.g., Bigelow (1996) or Markosian (2004).

[4] See, e.g., Tooley (1997) or Correia and Rosenkranz (2013).

The Moving Spotlight Theory

The MST is another view on time that is designed to capture some of the advantages of both static and dynamic ontologies. As with eternalism, all facts, past, present, and future, are equally real. But unlike eternalism, there is an objective present, progressing through the four-dimensional block that comprises the entirety of existence. Thus, the MST can be seen as a sort of A-theoretic eternalism. So while at all times, all events are equally real, they change with regard to their a-properties: as the present progresses through the block like a searchlight, consecutive times "light up" as the present ones.[5]

Basic Varieties of Views on Free Will

Let us briefly delineate the main strata in the debate about free will before we could see how temporal ontology could play a role for the question of whether we can be free or not. For this, we need t return to the classical state of the debate in which the main question has been whether freedom is compatible with determinism or not, before we can turn below to the issue of whether that is the question that we should be asking.

Classically, the various positions on freedom are divided between compatibilist and incompatibilist views. Compatibilist views hold that freedom is compatible with physical determinism, while incompatibilist views hold that determinism precludes freedom, usually because determinism would rule out a robust notion of the power to do otherwise, which incompatibilists typically hold is a necessary condition for freedom.

Incompatibilism

Incompatibilists typically assume that freedom requires some sort of power to do otherwise. According to their view, an agent must at the time of decision have the ability to bring about any one of at least two possible courses

[5] See, e.g., Deasy (2015). For a more recent variant, see Cameron (2017).

of action.[6] We can easily see why this is seen as incompatible with physical determinism. If an action is a physical event, and physical determinism is the notion that any state of the universe and the laws of nature uniquely fix only one possible further course of events, then no agent has at the time of decision really the power to do otherwise. Incompatibilists who accept that determinism is true and agents hence cannot be free are called "hard determinists", while incompatibilists who argue that determinism is false and agents hence could possibly be free are called "libertarians".

Libertarian views face a unique challenge. Not only do they have to show how physical indeterminism could actually make a decision open in the sense that there are at least two possible future courses of events, which entails that they have to demonstrate how indeterminist physical events, such as quantum events, feature in our decision making processes in human brains in a way that they leave the outcome of the decision making process open. Over and above that, libertarians also have to show how a physically undetermined chance event, such as a quantum event, can offer a robust notion of control: the action, rather than being just a matter of chance, or luck,[7] must in some sense be up to the agent. Libertarians solve this issue, e.g., by either postulating a non-physical agent who steps in to resolve the physically undetermined outcome of the decision process,[8] or they provide an account how even a process whose outcome is determined solely by physical chance can generate a decision that is truly the agent's own, as in Robert Kane's view. Kane holds that when a certain type of undetermined decision is processed by a free agent, the agent's brain sustains parallel processes which compete for the solution of the decision. Both of these parallel processes the represent possible decisions, which are both backed up by the agent's conflicting desires and preferences. And while it is a matter of physical chance which process prevails, the agent still can claim ownership of their decision, because whichever process wind out, it is backed up by the agent's

[6] See, e.g., van Inwagen (1975).

[7] For the so-called luck objection, see, e.g., van Inwagen (1983), 16.

[8] See, e.g., Clarke (1993).

own desires and preferences.[9]

We will leave the intricacies of the various incompatibilist views behind here. However, it is important to note that the source of the incompatibility of these notions of freedom and determinism stems from the fact that determinism seems to preclude any other possible future course of events other than the one that is actually coming about. We will see below that this incompatibility is better represented in terms of the open future, rather than in terms of determinism or indeterminism.

Compatibilism

Compatibilism holds that freedom is compatible with physical determinism, usually because the authors argue that freedom does not require the power to do otherwise. Rather, in order to be free, an action might be deterministically caused, but it has to be caused in the right way: it needs to be a consequence of our desires and preferences, and be in some way in accordance with our character. One popular way to ensure this is, e.g., that the action be endorsed by our second-order desires: not only do we act as we want, according with our desires and preferences, but we also endorse having these desires. Both first- and second-order desires might be deterministically caused. [10]

Some of the compatibilist views endorse a notion of the power to do otherwise that is compatible with determinism. A classical example of such a view would be the conditional analysis of the power to do otherwise: If an agent had decided differently, they would have acted differently. Such a notion of the power to do otherwise is compatible with determinism because it does not presuppose that it is actually possible that any past state of the universe and the laws of nature have fixed more than one possible future course events, including a different decision from the one that actually occurred. This notion of the power to do otherwise is still relevant in the compatibilist debate because it helps to highlight one condition that would,

[9] See Kane (2007).

[10] See, e.g., Frankfurt (1969).

e.g., render an action unfree: if the agent is coerced to act, e.g. because they are being held at gunpoint, or because their actions are forced by an evil scientist manipulating their decision-making processes, they might not have acted differently, even if they had decided differently, because their decision would not have mattered with regard to wether the action occurred or not. But it has to, in order for an action to be free. It is important, though, to keep this conditional notion of the power to do otherwise and a more robust notion such as required for incompatibilist views apart.

In a lot of compatibilist views, freedom is not only compatible with determinism, but instead even requires our actions to be determined by our character: if they weren't, what we did would be a consequence not of the kind of person we are, but on luck, or on factors outside us. There are many different versions of compatibilism around that I will not discuss in full here because the differences between them are not relevant to our discussion here. We will go into further detail below in our discussion of whether temporal ontology restricts the range of possibilities for freedom. Let us now turn to the implications temporal ontology has for the classical framing of the free will debate.

3 Freedom, Determinism, and the Open Future

The distinguishing feature of incompatibilist accounts of freedom is some ontologically robust notion of the power to do otherwise. It is the notion of the power to do otherwise that is usually taken to be incompatible with determinism, because it seems to require an equally ontologically robust notion of alternative: at the time of decision, there need to be at least two possible further continuations of courses of events. Let us take a more technical notion of alternative such as, e.g., Niko Strobach's:

> Alternative: A possible development of the world h and another possible development of the world h' are real alternatives at time t, *iff* h and h' have an identical content until t.[11]

[11] Strobach (2007), 56

Thus, in order to have the power to do otherwise, there need to be at least different possible future developments of the world that share a common history until the moment of decision. Determinism seems to entail that at any arbitrary time t, there is only ever exactly one future continuation of events: the actual one. This is why it has been taken to be incompatible with the power to do otherwise. There is never any other real alternative to the actual course of events. Take John Earman's famous definition of determinism:

> The [nomologically possible] world $W \in \mathcal{W}$ [where $\mathcal{W}$ is the set of all nomologically possible worlds] is *futuristically* [...] Laplacian deterministic just in case for any $W' \in \mathcal{W}$, if W and W' agree at any time, then they agree for all later [...] times.[12].

Earman offers three different definitions of determinism, depending on whether determinism is supposed to entail that either all, or only the future, or only the past events are supposed to completely overlap in two possible worlds that share the same laws of nature and are identical at any time t. For our purposes here, we do not need to concern ourselves with the question of whether overlap at any time t in deterministic nomologically possible worlds entails overlap at any other than at the time of comparison and any future times, so let us stick with this definition here. We can immediately see how this definition rules out more than one future continuation of events in deterministic worlds at any arbitrary time t, and how this forbids the existence of real alternatives at any time of decision.

However, determinism might not be the sole deciding factor for whether we could possibly have the power to do otherwise. What matters is whether real alternative future courses of events are possible, and that depends on a number of underlying ontological commitments over and above determinism. In some temporal ontologies, it is possible that determinism is false and yet still there are no alternative future courses of events, while in other temporal ontologies, it is possible that the laws are deterministic and yet still the future is open.

[12]Earman (1986), 13

Let us go back to temporal ontology then. If our world is eternalist, then all facts, and all times, are equally timelessly real. In a sense, the future is not ontologically open in eternalism, because whatever fact, or time, is later than any arbitrary time t in the eternalist block is exactly as timelessly real as what happens at t: Caesar's crossing the rubicon is ontologically on a par with you reading this sentence, as it is ontologically on a par with the eventual heat death of the universe. In eternalism, the future can only ever be epistemically open: located at their on time, an agent might not know what lies in their future, but whatever will happen to them is exactly as real as them wondering what will happen to them. In eternalism, the future is ontologically fixed. There are no ontologically open alternatives at any time t: whatever happens after t is as timelessly the case as what happens at t. Eternalism does not imply determinism, however: it is perfectly possible that two nomologically possible eternalist worlds agree at one time but disagree at later times, if the laws are non-deterministic. So while eternalism does not entail determinism, eternalism *does* entail that there are never real alternatives. Hence, it is possible that determinism is false, and yet still there are no real alternatives. If the existence of real alternatives is a prerequisite for a libertarian account of freedom, then that account is incompatible with eternalism, even in an indeterminist world.

If it was also possible that determinism was true and there could still be real alternatives and an open future, then the standard way of framing the free will debate along the question whether freedom is compatible with determinism would be misguided. Take presentism and the GBT. Both these views hold that the future facts are not real yet. The question is whether this entails that the future is open or not, and whether the openness of the future necessarily depends on indeterminism in such views. R.A. Briggs and Graeme A. Forbes, e.g., have argued that with a necessitarian ontology, facts that are the case now could restrict the possibility of what will happen in the future.[13] So if it is a law that ferromagnets necessarily attract iron, then the present existence of a ferromagnet implies it future attraction of iron. If Briggs and Forbes are correct, it is possible to have an account of time with

[13]See Briggs and Forbes (2012).

an unreal future that could still be fixed. If determinism were true in such a world, we would have no real alternatives at the time of decision, or ever. So far, so consistent with the standard way to frame the free will debate. But what if we combine the GBT or presentism with a non-necessitarian ontology?

Let us, for instance, imagine a GBT world in which Humeanism is true.[14] Take Humeanism to be the view that some notion of Humean Supervenience is true: the laws supervene on the totality of the non-modal facts.[15] The Humean laws are mere descriptions of the facts, but they are not prescriptive. In a Humean GBT or presentist world, the future would, at any non-final time t, be open: future times are not real, and the Humean laws of nature do not have any modal force to uniquely compel a certain future to happen.

What about determinism in such a world? Given that such a world has an ontologically open future, is there any sense in which that world could be deterministic at all? If the future is genuinely ontologically open at the present time, how could such a world fulfil Earman's definition of determinism? The question depends on the laws: remember that according to Earman, the crucial question is whether it is possible that two worlds that share the laws can be different after any time where they are identical. So the question rests on what the Humean could say the laws are in non-eternalist worlds.

It turns out that the Humean faces a particular challenge in the GBT: what should we take the Humean mosaic to be on which the laws supervene, and at any present time t, what are the laws in such a world? We have two options: the supervenience base for the laws are either all facts past, present, and future as they present themselves *at the end of time*, some of which are not real yet at t, or all *real* facts, as they are the case at the present time t. So either we have to accept that we have to wait for the end of time before we get a complete Humean mosaic on which the laws can supervene, meaning there are never any laws until we have the entire events laid out

[14] Bracketing the question whether Humeanism and the GBT are compatible for the moment, see R.A. Briggs and Graeme A. Forbes (2017).

[15] See, e.g., Earman and Roberts (2005), 7.

before us, or the laws only supervene on the *presently* real facts, but then the laws are time-indexed and do not cover the future facts.[16]

In what sense could such a world be deterministic, and it what sense could its future be fixed? We either only get the laws at the end of time, or the laws are time-indexed and do not cover the future. In both cases, it is perfectly possible that the laws are deterministic, i.e. that the regularities are strict, without the future being ontologically closed at any time: either we do not have any laws yet, or they do not entail anything about future facts which are outside their supervenience base, because they are not real yet. Even strict laws, which we could see as an indicator that a world is deterministic, do not entail that the future is fixed: at any present time t in a non-eternalist Humean world, only the past and present facts are real, and either the laws only come into being at the end of time, or they only apply to the Humean mosaic as it is at the present time t, containing only the past and present facts at t. Either way, the laws do not prohibit any future continuation after t. If strict and universal laws imply determinism, then such a world could be deterministic without the future being fixed. Similar arguments could be made for presentism. Where that leaves us with Earman's definition is a question that we cannot discuss here for lack of space.

So where does that leave us? Deterministic laws do not necessarily imply a fixed future, and indeterministic, stochastic laws do not imply an open future. Whether that poses a problem for Earman's definition of determinism is an issue to be discussed in a longer version of this paper. It is an issue worth discussing if only for the sheer influence that definition has, as well as its great intuitive appeal.[17] This leads us to the result that the classical demarcation of compatibilism and incompatibilism along the lines of compatibility with determinism is misguided. For incompatibilism, all that counts is that at the time of decision, the future needs to be ontologically open. Since some temporal ontologies allow for an ontologically open fu-

[16] For an exploration, see Backmann (2016).

[17] For a proposal to define determinism in terms of future possibilities and branching time, see Müller (2015).

ture even if the laws are strict, and some temporal ontologies have a fixed future even if the laws are stochastic, we should divorce the question of freedom from the issue of determinism. Incompatibilist notions of freedom that require the power to do otherwise are incompatible with any ontology that entails that the future is fixed, and (in-)determinism is not the singular indicator for the fixedness of the future.

4 Eternalist Freedom?

Given that we have seen that a fixed future is incompatible with the power to do otherwise, and eternalism features a fixed future, we should investigate whether there is room for any account of freedom other than compatibilism in eternalism.

The state of the debate seems to support this: attempts to model libertarian freedom in a branching time model usually presuppose a temporal ontology with an open future.[18] But how far exactly can we go in eternalism?

We can only sketch the position here.[19] There is space for an intermediary position: it matters not just whether, but *how* future actions are fixed. While the future is fixed in eternalism, the position allows for different ways how it might be fixed. The laws could not only be strict or indeterministic, but also either be Humean and inert, or anti-Humean, and hence carry some modal force. In a Humean eternalist world, even one with strict laws, the

[18] See, e.g., Müller (2015) .

[19] See Hoefer (2002) for another proposal. Hoefer holds that freedom is possible only in eternalism: since no time is ontologically privileged, determination relations between earlier and later states of the universe are symmetrical: we can with as much right say that the past and the future depend on our present actions as present actions depend on the past. However, this is incompatible with the asymmetrical, 'futuristic' version of determinism used in this paper, which does not require for any state of the universe to imply only one possible past. Even in an eternalist universe with deterministic laws, any state of the universe at any time t does not necessarily imply any singular earlier history of the universe. I can go no further into the discussion of Hoefer's view in this abstract, although it merits further investigation in the talk.

laws are consequences of the complete distribution of facts, *including* our actions, not the other way around. For the notion of freedom, it matters whether our actions are either metaphysically necessitated by non-Humean laws, or whether they, together with the rest of the Humean mosaic, entail the laws.[20] Any action in such a world, regardless of whether the laws are strict or not, is not made necessary, not forced, by non-Humean laws. In a Humean world, there is no fact in the universe before an action that metaphysically necessitates the action, even if the action is always timelessly the case.

I will argue that while such a notion of freedom does not require real future alternatives and the power to do otherwise, it does make a difference whether an action was made necessary by the laws, or is just timelessly the case, even if it is part of the supervenience base for a deterministic law. A metaphysically necessitated action seems less free than one that is not necessitated, but merely timelessly the case. In such a view, actions would still be caused by the agent's decisions in the sense of being counterfactually dependent on them. Let's call the view non-modal freedom.

5 Conclusion

We have seen that determinism is not the only factor that decides whether the future is open. It is hence not the only factor that decides the possibility of accounts of freedom that require the power to do otherwise. Some temporal ontologies, and some accounts of laws, either prohibit or imply an open future regardless of whether the laws are deterministic or not. As one consequence of this discussion, we have seen that eternalism is inconsistent with the power to do otherwise. However, there is space for a strong account of freedom beyond classical compatibilism in eternalism. In non-modal freedom, actions are causally dependent on the agent's decision, and while they are timelessly occurring in the eternalist block, they are not metaphysically necessitated.

[20] See, e.g., Beebee and Mele (2002).

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