

FREE CHOICE

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How can there be free choice if every event is fully governed by natural laws? Traditionally the problem has been couched as an apparent contradiction between there being free will and there being deterministic causal laws. I give a solution that resolves this paradox while avoiding defects of familiar compatibilisms. But the problem of free choice is deeper; it remains even if some causal laws are indeterministic. Nonetheless my solution handles the deeper problem also.

I give specific versions of the problem in the body of the paper. But I take the general situation to be this: For quite a while the success and prognosis of physical science has been very good. There has been no sign that the physical scientist will ever need to investigate human values to find explanations for physical phenomena, including human behaviour. Yet the moralist finds it incredible that the best in human deeds and choices could be the mere spasms of a physical nature insensible to virtue and to morals. He would insist that human behaviour must be explained by appeal to values; no other explanation is adequate. How can the scientist and the moralist both be right? How can there be both no need and much need to appeal to values? This essay's theory is designed to give each side its due. It is consonant with the continuing success of the scientist, while offering an account of free choice which clears the way for the moralist.

I.

The apparent contradiction is as follows: There are freely chosen events. A freely chosen event is not causally determined by prior events. All events are causally determined by prior events. So a freely chosen event both is and is not causally determined by prior events.

To solve the problem, some might deny that there are freely chosen events. Others might deny that freely chosen events are not causally determined. Others might deny that all events are causally determined. But there are profound temptations to deny none of these, which leaves the contradiction. Fortunately there is another way to proceed. When faced with a contradiction make a distinction. The goal here is not to choose between the conjuncts, but to have it both ways. So what follows is a theory that makes possible an appropriate distinction.

There are two inspirations for my theory. One is Kant's theory of free choice. A noumenal self somehow makes choices that affect the deterministic sequence of events in the phenomenal world. But how do these choices

affect the sequence? It cannot be that a choice affects the sequence only locally. That is, free choices do not simply insert undetermined events into the sequence. For then the sequence would not be deterministic after all. An alternative worth exploring is that free choices affect the sequence globally. That is, a free choice helps decide which among a number of possible deterministic sequences of events is to be actual.¹

So the other inspiration is Leibniz's claim that God chooses for actuality the possible world he deems best. But now instead of God choosing which world is to be actual, suppose free agents collectively do. Possible worlds are elected to actuality, as it were; actuality is an office. Suppose further that at different times, the electorate deems a different possible world to be best. This allows a distinction between (i) the history of the current office holder, and (ii) the history of the office itself, as it passes from office holder to office holder. This distinction will help resolve the contradiction, as I will explain.

First the theory. I will make the following assumptions: Possible worlds are concrete things.^{2,3} The same particular thing can exist in different possible worlds. Things in different worlds can exist or happen at the same moment. I want a very circumscribed set of possible worlds to be called the 'natural worlds'. This set of worlds must meet the following three conditions: (a) Each world in the set is governed by the same deterministic natural laws. That is, at any current time, given the laws of nature the events in the past and present taken collectively are a sufficient condition for all that happens in the future. The differences between the worlds are due to differences in what events exist, not what laws govern them. The worlds are called 'natural worlds' as a reminder of their being governed by natural necessity. Note that I am assuming that natural laws are laws governing physical events and that any event is identical with some physical event.

¹ For another Kantian account of free choice see Zeno Vendler, *The Matter of Minds* (Oxford: Clarendon Press, 1984).

² In this I follow David Lewis, *On the Plurality of Worlds* (Oxford: Basil Blackwell, 1986). I differ from Lewis in a number of ways, notably by maintaining trans-world identity and by having actuality be an office conferred by choosers. Lewis argues that one thing's being wholly in different worlds in which it differs in some intrinsic respect would entail something's having and lacking a property, i.e. a contradiction. (pp. 199..:200) I maintain that there is no contradiction-something insofar as it is in one world may have a property that it, insofar as it is in another world, lacks. And there is a better way to understand this than those Lewis canvasses on pp. 200-201. The very thing can be in a world even if the whole thing is not. But this is not the place for a full treatment. I treat actuality differently to account better for free choice. Lewis gives an 'indexical analysis' of actuality with two advantages. (pp. 92-94) First, it explains how we know we are part of the actual world, given that we know there is a world we are part of. But the analysis does not explain how we know this latter fact. Nor does it allow for the seeming skeptical possibility that we have complete evidence of being in the actual world yet are not. Second, Lewis's account explains how it can be contingent which world is actual. But on my theory that actuality is conferred by choice also explains this contingency. So in neither way is my theory at a disadvantage.

³ My theory does not depend on possible worlds being concrete things. It only depends on the past and the future being the same sort of things as possible worlds. For example, if possible worlds are stories let the past and future be stories. However, assuming modal realism makes exposition more straightforward.

(b) No two natural worlds are merged for any period of time. That is to say that there is no period of time at which everything in one natural world is numerically and qualitatively identical with everything in another natural world. This is an assumption to simplify exposition. It helps distinguish natural worlds from a different sort of world I will be introducing in a little while.

(c) For any given time there are a number of natural worlds which are indiscriminable before that time and discriminable after that time. Let two things be indiscriminable just in case no one can tell which is which when the things are examined one at a time. For instance given normal perceptual abilities two new pennies seen at different times are indiscriminable. When I use 'indiscriminable' about possible worlds, I mean assuming someone could compare possible worlds and given whatever enhancement of perceptual abilities is technologically possible. I assume further that there are significant limits to even enhanced perceptual abilities in discerning the vast complexity of a world as it is now, and even greater limits to discerning how it was previously. So indiscriminable worlds could have many subtle current differences and not so subtle ones in the past. It might seem hard to fulfill condition (c). How could indiscriminable worlds suddenly become discriminable? An example will help explain. Consider a professional bowler. One time he throws a strike. The next time with the same motion, the ball on the same path with the same spin, he leaves a pin standing. The histories of the two outcomes *seem* the same, anyway. They are indiscriminable (in the way two new pennies are). But, assuming bowling is governed by deterministic laws, there must have been some undetectable difference that explains the differing outcomes. Likewise with the worlds with indiscriminable pasts. Subtle differences sum to cause a noticeable difference. So the same deterministic laws can apply, pasts can be indiscriminable, and yet futures be discriminable.

A free choice helps decide which natural world is to be currently the actual world. The candidate natural worlds are ones with pasts indiscriminable at the time of the choice. This appropriately limits the options in a free choice. Within the relatively severe limits of the indiscriminability, various natural worlds are available for current actuality. Free agents collectively pick one to be currently actual. By hypothesis this collective decision is not governed by natural laws.

One natural deterministic world is actual for a time, then another one is. Any event in a natural world has a deterministic history of events in that world. But any freely chosen event has a second history as well, viz. the history of choices between worlds and the events that led up to those choices. The events are some of them in one natural world, some of them in another, some in another, etc. Which of these two histories is the actual past? Well, at this point 'the actual past' is ambiguous. On the one hand it can mean (i) the past events which are currently actual simply in virtue of being part of the currently actual natural world. On the other hand it can mean (ii) the past events which were actual when they were current (that is to say the events which were actual in virtue of being part of the

natural world which was actual when they were current). These events would be from various natural worlds. (i) is what I called 'the history of the current office-holder'. (ii) is what I called 'the history of the office' as it (i.e. actuality) is held by first one natural world then by another.

It seems to me that both have equal title to be called the actual past. The past events in sense (i) *are* actual but were not actual. The past events in sense (ii) *were* actual but are not actual. Further reasons for their competing claims: The currently actual past (sense (i)) contains the events that caused the actual present to exist. But it is unstable- liable to be replaced. Each time another natural world becomes actual, a new past becomes actual in sense (i). But the actual when current past (sense (ii)) remains the same. It remains the same which events were actual when they were current. So the currently actual past contains causes of the present but is unstable, whereas the actual when current past is stable but much of it is not causally connected to the present. Rather it is connected by the choices which made the successive worlds actual.

It will be convenient to have an unambiguous sense of 'the actual past'. Since I am mainly interested in free choice I legislate that (ii) the actual when current past is to be called the actual past. Let (i) be called the past of the currently actual natural world (current natural world for short).

With this legislated notion of the actual past I can introduce a new sort of world to be called the actual world: The newly so-called actual world contains all the events which are actual when they are current. So the actual world is a composite world consisting of temporal sections of various natural worlds. These temporal sections are united by the collective free choices that shift actuality from one natural world to the next. So conceived, the actual world can be distinguished from the currently actual natural world. The current natural world, as any natural world, is wholly deterministic. The so-called actual world is not. It consists of wholly deterministic sections united by free choice.

Why is the actual world not wholly deterministic? Because events actual before a free choice do not determine events actual afterward. A free choice shifts natural worlds. Events actual just before the choice come from one deterministic world. But events actual just after the choice come from a *different* deterministic world. So the events actual before the choice determine the future only in a natural world that has ceased to be actual. The events actual after the choice were determined by events only in a world that has just become actual. And the choice itself, which links these sections of separate natural worlds, is by hypothesis not governed by deterministic natural laws.

This theory solves the paradox as follows: The paradox was that a freely chosen event both is and is not causally determined by prior events. The distinction to solve the contradiction is between actual world and current natural world. A freely chosen event is causally determined by prior events *in the current natural world*. It is not causally determined by prior events *in the actual world*.

Here is another way to explain the solution. I have reconciled free choice

and determinism by postulating that there are two sequences of events leading up to every actual event (including chosen events). One sequence is events in the current natural past. The other sequence is events in the actual past. The former sequence is wholly governed by deterministic laws. The latter sequence is not.

I have promised a theory that gives each side its due. Let me say how it does. According to my theory the scientist and the free will advocate would in principle agree on which current events are actual. What they disagree on is how to conceive of the unity of past events and future events with the present. The scientist notes that to all relevant appearances past, present, and future are unified by natural laws. The free will advocate notes that to all relevant appearances, past, present, and future are partially unified by natural laws, but that there are also transitions unified by free choice. My theory saves these appearances. A world such as the scientist supposes ours is, is the currently actual natural world. A world such as the free will advocate supposes ours is, is the composite world I have been inclined to call the actual world. No scientific investigation could reveal, on my theory, that the current natural world was at any time not actual. The scientist's assumption is safe and fruitful for his investigation of causal laws. But the moralist feels that there is more to the world than is dreamed of in our science. And on my theory that conviction is also safe and fruitful.

The scientist as philosopher may have gone further to suppose that the laws of nature and past events actual when they were current fully explain actual current events. My theory makes this extension of his position wrong. The free will advocate may have supposed that the goal of discovering laws of nature which could explain any event was in principle impossible. My theory makes this extension of his position wrong. I try to give its due to the motivation of each. But I cannot agree with all either has said.

II

Why is there need to add what would seem to be another compatibilist theory to the existing stock? The answer is that compatibilist theories positing both determinism and free choice generally have two major defects which mine is designed to avoid.

The first defect is that on familiar compatibilist theories, the future is currently settled. By that I mean that there are current facts about everything that will happen in the future. I attribute this position to familiar compatibilisms, because they entail that determinism is both true and not inconsistent with there being free choice. Determinism is the doctrine that given the laws of nature the events in the past and present taken collectively are a sufficient condition for what happens in the future. So it is true now that those events will happen.

This is a defect because one of the main intuitions urging that we have free choice is that the future sometimes awaits our choices. Sometimes it

is not settled until we have chosen, what will happen next. It is discomfiting to be told that there is already a fact about what we will choose. We begin to feel that somehow the choice has already been made and that we are dupes to be laboring over it.⁴ Being reassured that the labor is part of the cause of the choice is little help in convincing oneself to continue. Whatever we do is what we were going to do so we might as well take the easy way out. Believing determinism is debilitating. On the other hand, believing in free choice is invigorating. Fortitude now can bring a better future than faint-heartedness is likely to. That is the encouragement of believing we are not determined. The version of free choice offered by familiar compatibilisms does not have the important invigorating character a doctrine of free choice ought to. Note that here I am not arguing that we have free choice. That is assumed. I am arguing that familiar compatibilisms are unfaithful to the pre-theoretical belief in free choice.

By saying that the future sometimes awaits our choices I mean the following: For any outcome of the choice, it is now neither true nor false that the outcome will occur. There is nothing unsettled in the present or the past. For any outcome of a choice it is now either true or false that it is happening or happened. But the future is different.⁵

Some compatibilists might argue that even if the actual future is settled they offer a range of possible futures to free agents to invigorate them. These compatibilists might say that in other possible worlds the agent chooses differently. But this is feeding an actually starving dog a merely possible bone. If the actual future is settled then what might be is never within one's reach. To say that an inevitable outcome could have been avoided had circumstances been different, is not to deny that it was inevitable given actual circumstances and the laws of nature. What is needed is a theory in which the actual future is unsettled until it is chosen.

My theory can meet this need. Of course for the currently actual natural world the future is settled because determined. But the actual world, in my legislated sense, is assembled moment to moment by the collective free choices (or when no one is choosing by the laws of nature). Let it be unsettled how we will choose. Then it is unsettled which future is to be actual.

Secondly, familiar compatibilisms fail because they do not allow for the fact that free choice is spontaneous. That is, freely chosen events are not fully explained by past events given the laws of nature. Familiar compatibilisms entail determinism which entails no spontaneity.

The reason I emphasise spontaneity is that I am trying to capture an important sense of freedom.⁶ If free choice is not spontaneous then chosen events are due to circumstances beyond our control. And this is an ordinary

⁴ cf. Aristotle, *De Interpretatione* 9, 18h 27-36.

⁵ cf. A. N. Prior, 'The Formalities of Omniscience', *Papers on Time and Tense* (Oxford: Clarendon Press, 1968), pp. 26-44.

⁶ For example see the discussion of the Third Antinomy in Immanuel Kant, *Critique of Pure Reason*, trans. by Nonnan Kemp Smith (New York: St. Martin's Press, 1965), pp. 409- 415.

and familiar way to understand not being free. 'Due to' is a useful phrase here, because events can be due to both people and other events. The completion of a troubled hospital construction project can be due to the city's greatest benefactor. Bad radio reception can be due to electrical interference. In the case of events the explanation can always continue. The interference is due to a storm, due to a cold front. My bad reception is thus due to each of these things. In the case of events due to people the explanation can sometimes continue. The benefactor's largess might be due to an order by his revered guru, to whom he has surrendered autonomy. But thinking that all events are governed by natural laws, that none are spontaneous, invites us *always* to apply the regress of explanation to events due to people. This makes all events due to circumstances beyond people's control. If a gift due to Bud is due to dispositions due to heredity and environment, then the gift is due to circumstances beyond his control. It is a well established belief that actions due to circumstances beyond our control are not free. The owner of a small business bankrupt due to international economic events might say regretfully to his employees, 'Due to circumstances beyond my control I have to let you go. I've got no choice.'

There are of course other ways to characterise freedom, such as being unconstrained or being able to do otherwise. The characterisation I have chosen includes these. The business owner says, 'I am forced to do this. I can't do anything else.'

So, unlike familiar compatibilisms, I emphasise spontaneity. Being a freely chosen event entails being a spontaneous event. Here that just means not being fully explained by past events given the laws of nature. That entails not being due to circumstances beyond the chooser's control. My theory allows for spontaneity in the free choices that assemble the actual world.

III

So I have given the problem, the theory, the solution, and have criticised familiar compatibilisms. What follows are attempts to clarify and expand the theory, and to respond to further objections.

(1) A diagram might help. Let lines represent natural worlds through time (w_1 , w_2 , and w_3). Time proceeds from left to right and being in a vertical line represents happening at the same time. Let the times (e.g. t_0 , t_1 , t_2 , etc., and the unlabeled ones) be short periods of time continuous with their neighboring periods of time. When world lines are parallel for a time, that represents their being indiscriminable for that time. (So for time t_1 all three natural worlds are indiscriminable, for t_4 only w_2 and w_3 are.) Starred sections represent the sections which compose the so-called actual world (@). (So the actual world is composed of the section of w_1 from t_0 to t_2 , the section of w_2 from t_3 to t_5 , and the section of w_3 beginning at t_1 ;))

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(2) My concept of actuality may not be clear. Let me use an analogy. Actuality is like an elective office, e.g. town council or some other office held by a group. Worlds are like slates of candidates such that the candidates run as a team but are voted on individually. The candidates are analogous to events. The total vote for the candidates determines which slate wins the current election; analogously, the results of free choices of various events determine which world is currently actual. Later a different slate will win; analogously, later a different world will be actual.⁷ The analogy is not complete however. For there is no analogue to the fact that the actual world is a historically composite entity, composed of temporal sections of various natural worlds.

(3) Let me say a little more about the collective election. Two questions arise. What if the collective choice could be satisfied by more than one natural world? And, what if the collective choice is inconsistent and so could be satisfied by no world?

First question. The collective choice might be general enough that various natural worlds could equally well (or well enough) realise it, even ones discriminable at the next moment after the choice. Let's say the candidate world most closely resembling the current natural world before and after the choice, becomes the new currently actual natural world. If there is still a tie, one of the candidates wins arbitrarily.

Second question. Suppose two people choose to arrive at the same place at about the same time. It can't be that both get their way. Still some outcome

⁷ Robert Kraut suggested that I was thinking of actuality as an office. Peter Forrest uses the phrase 'candidates for actuality' with presumably a different meaning than I would give it. He argues that free choice changes the past. He explains changing the past in terms of 'fixing' a past event. Fixing an event means excluding worlds from the current set of worlds that determines which events are not fixed. These are the worlds he calls 'candidates for actuality'. The actual world is the world, or one of the worlds, which at no time is excluded. But there are no times, as in my scheme, at which different candidates are actual. But anyway our projects are different; Forrest is doing semantics at this point, and I am doing metaphysics. Peter Forrest, 'Backward Causation in Defense of Free Will', *Mind* (1985), pp. 210-217.

occurs. Choices guide intermediate events, such as moving toward the position. Natural laws govern these intermediate events. The progress of these events may well rule out the realisation of one or both choices. Suppose the two people are a large person and a slight one, who move toward the chosen place without seeing each other. And suppose the large person moves more quickly. All things being equal, no world with simultaneous events indiscriminable from these will end up with the slight person's choice being realised. The laws of nature resolve in this way otherwise conflicting choices.

(4) The formulation in section I. of the solution to the paradox needs to be qualified. It is possible that a free choice determine that the currently actual natural world remain so. Then there would be no distinction between the current natural world's recent past and the actual world's recent past. The needed qualification is as follows: A choice is free if the chooser *could* have made such a difference, whether or not the chooser did.

The sense in which a free choice *could* have made a difference needs to be explained. I have committed myself to explaining possibility with possible worlds. The possible worlds available so far are the members of a set of deterministic worlds plus one composite, non-deterministic world (viz. the actual world) made up of temporal parts of several of them. What are needed are *more* composite non-deterministic worlds. These added worlds are to be the ones in which free choices went some other way. Call them along with the actual world the 'volitional worlds'. Volitional worlds are composed of temporal sections of natural worlds. A free choice could have gone some other way as follows: There is some volitional world which completely overlaps the actual world up to the time of the choice, but which diverges in the results of the choice. Thus before the choice, the other volitional world is composed of all the same natural worlds at all the same times as the actual world is. Right after the choice the volitional world is composed of a different natural world than the actual world is.

This complication requires further complication. Suppose there is a volitional world (i) which shares its past with the actual world and (ii) in which a free choice went some other way than it actually did. Then there is a non-actual world that has equal claim to being actual. For on my account being chosen makes a world actual. A choice that could have happened (but did not) in the actual world, does happen in some volitional world. So both futures are chosen by choices originating in the actual past. So by my account both futures are actual. So there is a world that is both non-actual and actual. But that is absurd.⁸

This is an important problem, but in the interests of clarity I will cease theorising. I will take the actuality of choices as primitive. A future resulting from an actual choice is actual. A future resulting from a merely possible choice is merely possible.

Please note I am not explaining what actuality is. I am only explaining how worlds come to have it. (Agents come to have it by being born into

⁸ I am indebted to David Lewis for this objection.

a world made actual by previous agents.)

It might seem that divergent actual futures are still possible if different free agents actually choose different futures. But recall that on my account the individual choices of free agents compose a single collective choice. That collective choice votes into office the next natural world. So at any given moment only a single natural world is chosen to be actual. So there will be only a single actual future of any present moment.

I have it that the actuality of worlds depends on the actuality of choices. The former is explained; the latter is primitive. This may seem to give people an unrealistic amount of power over the universe. Power over the universe is a constant and constantly shattered dream. But actually my theory is less extreme than it might appear. Persons do not make worlds exist, they only make them actual. They do create the actual world, but by choosing and assembling-the traditional limited way for humans to create.

Let me consider three more objections to my whole program as explained so far.

(5) Objection: A free choice is an event. Take a free choice that switches the actual world from one natural world to another. Which of the two worlds is it in? If the choice is in the prior world then it is an event determined by prior events and is not free. If the choice is in the posterior world then the choice itself did not determine the switch and so was not a choice. So if a free choice is an event then it is either not free or not a choice. So my account is absurd.

My counter is that choices, choosings, are not events. They are transitions between events. This can be verified by introspection. Pay attention to a case of deliberation, choice, action. The deliberation is a series of events. Then suddenly you know what you are going to do. Or suddenly you act. When you are deliberating the choice hasn't been made. When you affirm or act the choice has been made. There is no intermediate event or activity or action that is the choosing. The choosing is the transition between not having chosen and having chosen.

The clearest example for me is trying to get out of bed on a cold, dark morning. I consider getting up. I vow to get up. Nothing. Then suddenly I'm getting up. It just happens.⁹ Choosing is a transition between events, not an event itself.

(6) Objection: On my view some non-actual events cause actual events, and vice-versa. But this is inconceivable. This objection is right about the consequence of my view (if 'actual event' is read as 'event actual when current' and 'non-actual event' is read as 'event non-actual when current'). But the objection is wrong in its evaluation of that consequence. Consider a natural world that becomes actual then ceases to be actual. Events before actuality cause events during actuality, and events during actuality cause events after actuality. So non-actual events cause actual ones, and vice-versa. But what is wrong with this? It is not that merely possible events

9 Sartre via Alexander Nehamas has influenced my opinion about choice.

are making actual events actual. No, the collective choice makes them actual. The non-actual causes merely make their effects exist. By assuming the existence of possible worlds I am assuming a distinction between existing and being actual. Secondly, it is not that in the actual world there are merely possible events causing or being caused by actual ones. No, all events in the actual world are actual when current. And in general, independent of my specific theory, the consequences objected to here are natural consequences of thinking of modality in terms of possible worlds. It is possible that an event have different effects than it does. So there is a possible world in which it has different effects. Assuming cross-world identity, then an actual event has merely possible effects. Likewise an actual event may have merely possible causes.

It may be that the objection is motivated by deep reservations about the existence of possible worlds or about cross-world identity. But then dealing with the objections is beyond the scope of this paper which explicitly takes those concepts for granted.

(7) Objection: It is fine to say that free choice changes the future, but it is hard to believe that it changes the past in any sense. This objection states a worry that I cannot remove entirely but can mitigate. Given deterministic laws, past and future come as a package.¹⁰ You cannot change one without changing the other. That is not to say that what I have called the actual past changes. The actual past is as it was. The course of events in the actual world is not wholly deterministic. But admittedly the temporal sections composing the actual world come from different possible worlds that are wholly deterministic. So while the actual past remains the same, the pasts causally determining present events shift. It is some consolation that these shifts are not discriminable. So the actual past does not shift, and what does shift—the past causally determining present events—is always indiscriminable from the actual past at the time of the shift.

One point of pasts being indiscriminable is so that we have evidence of the way our actual past is. Memories and other evidence determined by the current natural world's past are thus just as reliable in indicating the actual past as the current natural past. We ordinarily believe that we have evidence about the actual past, and in my theory I am trying to preserve as many ordinary beliefs as possible. I am trying to make the philosophical distinctions and augmentations subtle enough to warrant our ordinarily overlooking them.

IV.

What if some natural laws are indeterministic, viz. probabilistic? It may

¹⁰ For an interesting compatibilism which relies on changing the past see Peter Forrest, *op. cit.*

¹¹ For more on this see: Peter van Inwagen, 'Incompatibility of Free Will and Determinism', *Philosophical Studies*, 27 (1985), pp. 185-209. Van Inwagen argues that if determinism is true then acting other than one did would change either the laws of physics or the past, both of which are impossible to change.

seem that indeterministic laws make room for free choice to determine certain outcomes which are not causally necessitated. A free choice can determine which of various statistically possible outcomes occurs.¹² Without all events being determined, the contradiction which I have set out to solve goes away. So seemingly the purpose of my account goes away.

But the basic problem is that we are tempted to believe that free choice is spontaneous. That is, freely chosen events are not fully explained by past events given the laws of nature. Yet we are also tempted to believe that every event is fully explained by past events given the laws of nature. Since we are also tempted to believe there are freely chosen events we are faced with a contradiction.

When philosophers thought natural laws were deterministic the contradiction was easily thought of as freely chosen events being both spontaneous, so not determined, and fully explained by the past, etc., so determined. The contradiction was manifested as in the beginning of section I.

But the basic contradiction remains even if some or all natural laws are indeterministic. It may seem that indeterministic laws do not fully explain the events they govern. But this is a misapprehension. An indeterministic law gives, say, a sufficient condition for a disjunction of events, perhaps with different probabilities assigned to each disjunct. The point of calling it an indeterministic law is this: whichever disjunct occurs is fully explained by the law. There is no further explanation. So indeterministic laws can fully explain events. They give all the explanation there is to give. For there to be spontaneous free choice, there must be freely chosen events not fully explained by the indeterministic laws. So some events must not be among the disjuncts of applicable laws at a given time.

These explanations sap the force of the intuitions. Are we really tempted to believe in such spontaneous events, outside even the relatively wide range of possibilities provided by indeterministic laws? Yes. We think that at least some free choice alters the course of events in ways that would not occur if we were automata, even indeterministic ones. Mere automata could not make the leaps from predictable behavior that characterise the nobility, creativity, or viciousness of free agents.

So we are left with the basic contradiction, given that there are freely chosen events: Some events are not fully explained by past events and natural laws. Any event is fully explained by past events and natural laws.

My theory can reconcile the deeper contradiction. Let the set of natural possible worlds be as before, except that some of the natural laws are indeterministic. (This would allow some of these worlds to have been merged.) The set of volitional worlds is as before (see (4) in section III). The distinction that solves the contradiction is between the volitional worlds and the natural worlds. Some events are not fully explained by past events and natural laws

12 For a detailed and helpful discussion of choosing within the confines of indeterministic laws see Martin E. Gerwin, *Causality, Agency, Explanation: A Perspective on Free Will and the Problem of Evil*, Princeton University Doctoral Dissertation, 1985.

*in some volitional world. Any event is fully explained by past events and natural laws in some natural world.*¹³

13 I am grateful especially to David Lewis and also to Robert Kraut, Berys Gaut, Leonard Katz, Nathan Tawil, Mark Hinchliff, Rudiger Bittner, Michael Frede, Bernhard Thole, and Martina Herrmann for discussing this essay with me, and to an anonymous referee for helpful criticism.