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On the role of indeterminism in libertarian free will

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In a recent paper in this journal, "How should libertarians conceive of the location and role of indeterminism?" Christopher Evan Franklin critically examines my libertarian view of free will and attempts to improve upon it. He says that while Kane's influential [view] offers many important advances in the development of a defensible libertarian theory of free will and moral responsibility … [he made] "two crucial mistakes in formulating libertarianism" – one about the location of indeterminism, the other about its role – "both of which have helped fan the flame of the luck argument". In this paper, I respond to Franklin's criticisms, arguing that, so far from making it significantly more difficult to answer objections about luck and control, as he claims, giving indeterminism the location and role I do makes it possible to answer such objections and many other related objections to libertarian free will. A central theme of this paper will emerge in my responses: In order to make sense of freedom of will in general and to do justice to the complex historical debates about it, one must distinguish different kinds of control agents may have over events and correspondingly different kinds of freedom they may possess.

Keywords: free will; libertarianism; indeterminism; luck; responsibility; self-forming actions

1. Introduction

In a recent contribution to this journal, Christopher Evan Franklin addresses a central and much-disputed question in contemporary debates about free will: "How should libertarians conceive of the location and role of indeterminism" (2013) in their accounts of free agency and free will? Answering this question is crucial, he notes, if libertarians (who believe in a free will that is incompatible with determinism) are to address frequently made objections to their view, and in particular, if they are to address problems about luck. The fundamental aim of his paper, he says, is "to place libertarians on a more promising track for formulating a defensible libertarian theory" (2) that will answer objections about luck and other related objections to their view.

This aim is pursued throughout his paper by engaging with, and critically examining, my view of free will, a view I have been developing over the past four decades to which Franklin is not only sympathetic, but also critical. At the beginning of the paper, he says:

> Kane's (1996, 1999, 2011) influential and assiduously formulated event-causal theory of libertarianism is intended to explain why (among other things) freedom is compatible with indeterminism. Although Kane's account offers many important advances in the development of a defensible libertarian theory of free will and moral responsibility, I will argue that Kane

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> made two crucial mistakes in his formulation of libertarianism – both of which have helped fan the flame of the luck argument. The first mistake concerns the location of indeterminism and the second the role of indeterminism . . . [I will proceed] by explaining why Kane's conception of the location and role of indeterminism is problematic, and how, by reformulating libertarianism in the ways I suggest, we can avoid the problems that beset Kane's theory. (2)

My purpose in this paper is to respond to Franklin's criticisms and in the process to spell out more positively how I believe his important questions about the location and role of indeterminism in libertarian accounts of free will ought to be answered. Though I believe his criticisms ultimately fail, they do so in ways that are instructive and revealing about the requirements for an intelligible account of libertarian free will and about current debates concerning free will generally.

He makes four criticisms of my view: (1) The first concerns the *location* of indeterminism. He argues that my placing the indeterminism between efforts of will and choice is problematic and leads to various unresolved difficulties. (2) The second concerns the *role* of indeterminism. It is a mistake, he argues, for libertarians to concede as I do that indeterminism may *diminish* the control, at least in some senses, that agents have over their actions. He then argues that, as a consequence of these claims about the location and role of indeterminism, my view cannot deal adequately with some of the most important problems facing libertarian accounts of free will, (3) notably, the aforementioned *problem of luck*, as well as (4) related problems concerning *enhanced control*.

I respond in what follows to each of these criticisms. They fail to account for features that are necessary for fully understanding my view and, I believe, for adequately addressing issues about free will in general. A central theme of this paper will emerge in my responses: In order to make sense of free will and to do justice to the complex historical debates about it, one must distinguish, as Franklin does not, different *kinds* of *control* agents may have over events and correspondingly different *kinds* of *freedom* they may possess. If there were only one kind of control relevant to human freedom, it would, of course, be folly to assert that indeterminism *diminished* that one kind of control. But, if there were only one kind of control agents could exercise over events, I will argue, one could not make sense of freedom *of will* in the first place. For it is by diminishing control of certain kinds that indeterminism makes possible an enhanced control of other kinds over free choices that are not possible in a determined world.

I will proceed as follows. In Section 2, I spell out the relevant features of my view that support these claims, explaining in the process why I locate indeterminism where I do and give it the role I do. Franklin's criticisms are then addressed in Sections 3–6.

2. Freedom of action and freedom of will

Doubts about the possibility of reconciling human freedom with indeterminism have a long history. The Epicurean philosophers of old said that if there is to be room in nature for freedom of action, the atoms must sometimes "swerve" from their appointed paths in undetermined or chance ways. But the many critics of the Epicureans, including the Stoics, cried out in opposition: How can the chance swerve of atoms help to explain freedom of action? Freedom is not mere chance.

Libertarians about free will through the centuries have tried to short-circuit these doubts by appealing to various unusual and mysterious forms of agency or causation – uncaused causes, immaterial minds, noumenal selves, nonevent agent causes, prime movers unmoved, and the like – which could not be accounted for by ordinary modes of

explanation familiar to the natural and human sciences. But these familiar strategies have led in turn to charges of mystery and obscurity against their view. These skeptical charges were summed up by Nietzsche (1889) in his inimitable prose when he said that "freedom of the will" in "the superlative metaphysical sense", which seems to imply being an undetermined *causa sui*, was "the best self-contradiction that has been conceived so far" by the human mind.

Where to go if one is to avoid such traditional and problematic libertarian strategies? I first posed that question to myself over four decades ago, haunted by Nietzsche's challenge. And, looking at the history of the problem, it did not take long to realize that no simple solution would be forthcoming if there was any solution at all. The answer cannot be given in one fell swoop, I came to believe. What is required is a series of complex steps that involve rethinking the relation of indeterminism to freedom, choice, action, and responsibility from the ground up.[1] I focus here on a selection of these steps that are particularly relevant to answering Franklin's criticisms.

(i) The first step involves distinguishing, as Franklin does not in his paper, between freedom of action and freedom of will. Much modern philosophy, from Hobbes and Locke to Wittgenstein and Ryle, has attempted to reduce the "problem of free will" to a problem of "freedom of action", thereby in my view obscuring the traditional problem of free *will* and making it appear simpler than it is. Free will is not just about free action, though it involves free action. It is about *self-formation*, about the formation of our "wills" or how we got to be the kinds of persons we are, with the characters, motives, and purposes we now have. Were *we* ultimately responsible to some degree for having the wills we do have, or can the sources of our wills be completely traced backwards to something over which we had no control, such as Fate or the decrees of God, heredity and environment, social conditioning or hidden controllers, and so on? Therein, I believe, lies the core of the traditional problem of "free will".

(ii) With this distinction in mind, a second step involves recognizing that *indeterminism does not have to be involved in all acts done* "*of our own free wills*". Not all of them have to be such that we could have done otherwise in a manner that was undetermined, but only those choices or acts by which we make ourselves into the kinds of persons we are, with the wills we do have. I call such will-forming choices or acts "self-forming actions" or SFAs. Often we act from a will (character, motives, and purposes) already formed, but it is "our own free will", to the extent that we had a role in forming it by earlier SFAs for which we could have done otherwise. If this were not so, there would have been *nothing we could have ever done differently in our lives to make our wills different than they are*; and we would never act "of our own free will" in the sense of a will that is to some degree "of our own free-making".

(iii) A third step then involves giving an account of how these SFAs arise and what they may involve. I argue that SFAs occur at those difficult times of life when we are torn between competing visions of what we should do or become; and they are more frequent in everyday life than one may think. Perhaps we are torn between doing the moral thing or acting from ambition, or between powerful present desires and long-term goals, or we are faced with difficult tasks for which we have aversions. In all such cases, we are faced with competing motivations and have to make an effort to overcome temptation to do something else we also strongly want. At such times, the tension and uncertainty we face about what to do, I suggest, would be reflected in some indeterminacy in our neural processes themselves (in the form of chaotically amplified background neural noise) – "stirred up" one might say, by the conflicts in our wills.[2] The uncertainty and inner tension we feel at such soul-searching moments of self-formation would thereby be

reflected in some indeterminacy of our neural processes themselves. The experienced uncertainty would correspond physically to the opening of a window of opportunity that temporarily screens off complete determination by the past.

(iv) A further step then involves noting that in such cases of self-formation, where we are faced with competing motivations, whichever choice is made will require an effort of will to overcome the temptation to make the other choice. I thus postulate, in such cases, that multiple goal-directed cognitive processes would be involved in the brain, corresponding to these competing efforts, each with a different goal corresponding to the different choices that might be made – in short, *a form of parallel processing in the free decision-making brain*. One of these neural processes (or *volitional streams*, as I also call them) would have as its goal the making of one of the competing choices (say, a moral choice), realized by reaching a certain activation threshold, while the other has as its goal the making of the other choice (e.g. a self-interested choice). The competing processes or volitional streams would have different inputs, for example, moral motives (beliefs, desires, etc.), on the one hand, and self-interested motives, on the other; and each of them would be the realizer of the agent's *effort* or *endeavoring* to bring about *that* particular choice (e.g. the moral choice) *for* those motives (e.g. moral motives). In such circumstances, if either cognitive process succeeds in reaching its goal (the particular choice aimed at) despite the indeterminacy involved, the resulting choice would be brought about *by the agent's effort or endeavoring* to bring about that choice *for* those motives. This would be so because the process itself was the neural realizer of this effort and it succeeded in reaching its goal, despite the indeterminism.

(v) The idea is thus to think of the indeterminism involved in free choice, not as a cause *acting on its own,* but as an *ingredient* in larger *goal-directed* or *teleological* activities of the agent, in which the indeterminism functions as a *hindrance* or *interfering* element in the attainment of the goal. The choices that result would then be *achievements* brought about by the goal-directed activity (the effort) of the agent, which might have failed since it was undetermined, but did not. Moreover, if there are multiple such processes aimed at different goals (in the conflicted circumstances of an SFA), *whichever choice may be made* will have been brought about by the agent's effort to make that particular choice rather than the other, despite the possibility of failure due to the indeterminism.

(vi) A further step is then to note that when indeterminism functions in this manner as an obstacle to the success of a goal-directed activity of an agent, the *indeterminism does not preclude responsibility* if the activity succeeds in attaining its goal. There are many examples in the literature illustrating this point (some of them first suggested by Austin (1961) and Anscombe (1971)). An assassin who kills an official with a high-powered rifle, despite the possibility of failing due to an indeterministic wavering of his arm, is one such example. Here is another. A husband, while arguing with his wife, in anger swings his arm down on her favorite glass-table top in an effort to break it. Imagine there is some indeterminism in the nerves of his arm making the momentum of his swing indeterminate so that it is literally undetermined whether the table will break up to the moment when it is struck. Whether the husband breaks the table or not is undetermined, and yet he is clearly responsible if he does break it. It would be a poor excuse for him to say to his wife "Chance did it (broke the table), not me". Though there was a chance he would fail, chance did not do it, *he* did.[3]

(vii) Putting these steps together, one can say that in cases of self-formation (SFAs), agents are simultaneously trying to resolve plural and competing cognitive tasks (represented by the distributed cognitive processes involved). They are, as we say, "of two minds", yet they are not two separate persons. Consider a businesswoman who faces a

conflict of this kind. On her way to an important meeting, she observes an assault taking place in an alley. An inner struggle ensues between her moral conscience, to stop and call for help, and her career ambitions which tell her she cannot miss this meeting. She has to make an effort of will to overcome the temptation to go on to her meeting. If she overcomes this temptation, it will be the result of her effort, but if she fails, it will be because she did not *allow* her effort to succeed. And this is due to the fact that, while she wanted to overcome temptation, she also wanted to fail, for quite different and competing reasons.

The businesswoman of this example is a complex creature, torn inside by different visions of who she is and what she wants to be, as we all are from time to time. But this is the kind of complexity, I argue, that is needed for genuine self-formation, and hence free will rather than merely freedom of action. And when agents, like the woman, decide in such circumstances, and the indeterminate efforts they are making become determinate choices, they *make* one set of competing reasons or motives prevail over the others then and there *by deciding.*[4]

3. The luck problem (I): indeterminism, causation, and macro-control

Turn now to Franklin's criticisms. He argues that two mistakes are made in my view, one about the location of indeterminism (1), the other about its role (2). It is a mistake, he argues, to locate indeterminism as I do in efforts of will involved in making difficult choices in situations of self-formation where the will is divided by conflicting motives. And it is a mistake to concede, as I do, that indeterminism may play the role of *diminishing* control, at least in some senses, that agents may have over their actions. These features of my view, he then argues, make it significantly more difficult to deal adequately with important objections to libertarian free will concerning luck (3) and related objections concerning enhanced control (4).

I will now argue, to the contrary, that so far from making it significantly more difficult to answer objections about luck and control, the location and role given to indeterminism in the steps of the previous section are what make it possible to answer such objections and many other related objections to libertarian free will. Beginning with the luck problem, I argue for this conclusion in two stages, one in this section, and the other in the next.

Consider a familiar form of the luck objection that plays a prominent role in Franklin's discussion: Undetermined events, it is commonly argued, occur by chance and are not controlled by anything, hence not controlled by agents. If the occurrence of a choice were to depend on the occurrence of some undetermined or chance events (say, quantum events) in the brain, then whether or not the choice occurs would appear to be just a matter of luck, rather than something the agent had voluntary control over and hence could be responsible for.

Such thoughts, as noted, have sent libertarians scurrying around looking for extra factors to "tip the balance" to one choice or the other, such as an immaterial agent or a noumenal self or (nonevent) agent cause. What I am proposing in the previous steps is an alternative way to think about how indeterminism might be involved in free choice that avoids these familiar stratagems and requires a transformation of perspective. The idea is to think of the indeterminism involved in self-forming choices, *not as a cause acting on its own,* but as an *ingredient* in larger *goal-directed* or *teleological* processes or activities of the agent, in which the indeterminism functions as a hindrance or obstacle to the attainment of the goal.

Viewing the location and role of indeterminism in this way immediately allows one to say several important things about self-forming choices. First, the choices that result from these temporally extended activities do not randomly pop up out of nowhere, even though undetermined. They would be the *achievements* of goal-directed activities (efforts or strivings) of the agent that might have failed due to the indeterminism, but did not. Second, and more importantly, if indeterminism plays this kind of interfering role in larger goal-directed processes leading to choice, the indeterminism would not count as the *cause* of the choice that is made. This follows from a general point about probabilistic causation. A vaccination may lower the probability that a person will get a certain disease, so it is causally relevant to the outcome. But if the person gets the disease *despite* it, the vaccination is not the *cause* of the person's getting the disease, though it was causally relevant, because its role was to *hinder* that effect. The causes of the person's getting the disease, by contrast, would be those causally relevant factors (such as the infecting virus) that significantly *raised* the probability of its occurrence.

Similarly, in the businesswoman's case, the causes of the choice she does make (the moral choice or the ambitious choice) would be those causally relevant factors that significantly *raised* the probability of making *that* particular choice from what it would have been if those factors had not been present. These factors would include her reasons and motives for making that choice *rather than* the other, her conscious awareness of these reasons, and her efforts to overcome the temptations to make the contrary choice. The presence of indeterminism lowers the probability that the choice will result from these reasons, motives, and efforts from what that probability would have been if there had been no competing motives or efforts and hence no interfering indeterminism.

Moreover, since those causally relevant features of the agent, which can be counted among the causes of the woman's choice, are *her* reasons or motives, *her* conscious awareness, and, importantly, *her* goal-directed cognitive activity, we can also say that she, the *agent*, is the cause of the choice. The indeterminism (like the vaccination) was causally relevant to the outcome, but it was not the cause. The agent was the cause. This explains why the husband's excuse was so lame when he said "Chance broke the table, not *me*". The indeterminism or chance was a hindering factor, not the cause.[5]

So, giving indeterminism this location and role in self-forming choice situations has four initial advantages. First, it allows one to say that the choices that result are not merely random occurrences that pop up out of nowhere, but rather *achievements* of goal-directed activities of the agent that might have failed due to the indeterminism, but did not. Second, it allows one to say that the indeterminism involved is not the *cause* of the resulting choice, since it was a hindering factor. Third, it allows one to say that the cause of the choice is the *agent* whose goal-directed cognitive activity *purposefully brings about* the choice that is made *for* the reasons that motivate it, whichever choice is made. Fourth, as noted in step (vi) earlier, when indeterminism plays this kind of role in cognitive decision-making, *it does not preclude responsibility.* The agent can be said to have voluntarily and intentionally brought about the choice for reasons and can be held responsible for doing so, if he or she succeeds despite the possibility of failure due to the indeterminism.

These points are crucial, but still only part of the story. For the luck problem can be reformulated in yet another and even stronger way: Is it not the case, one might ask, on the view presented, that whether agents succeed in making one choice, say A, rather than another B (or vice versa), in such self-forming choice situations (i) depends on whether certain neurons involved in their cognitive processing fire or do not fire (perhaps within a certain time frame). And is it also not the case that (ii) whether or not these neurons fire is undetermined and a matter of chance, so that (iii) the agent does not

have voluntary *control* over whether or not they fire? But if these claims are true, it seems to follow that the choice that occurred merely "happened" as a result of these chance firings and so (iv) the agent did not freely *make* the choice of A rather than B (or vice versa), and (v) hence was not *responsible* for making it. To many persons, this line of reasoning clinches the matter. It looks like the outcome *must* be merely a matter of luck.

But they reason too hastily. For the really astonishing thing is that, even if (i)–(iii) are true, (iv) and (v) do not follow, *when* three further conditions are satisfied: (a) the choosing of A rather than B (or B rather than A, whichever occurs) was something the agents were endeavoring or trying to bring about, (b) the indeterminism in the neuron firings was a hindrance or obstacle to the achievement of that goal, and (c) the agents nonetheless succeeded in achieving the goal despite the hindering effects of the indeterminism. For, consider the husband swinging his arm down on the table. It is *also* true in his case that (i) whether or not his endeavoring or trying to break the table succeeds "depends" on whether certain neurons in his nervous system fire or do not fire; and it is *also* true in his case that (ii) whether these neurons fire or not is undetermined and hence a matter of chance and therefore (iii) not under his control. Yet, even though we *can* say all this, it does not follow that (iv) the husband did not break the table and that (v) he is not responsible for breaking the table, *if* his endeavoring or trying to do so succeeds. Astonishing indeed! But this is the kind of surprising result one gets when indeterminism plays an interfering or hindering role within larger goal-directed activities of agents that may succeed or fail.

Here is another way to think about the matter: We tend to reason that if an action (whether an overt action of breaking a table *or* a mental action of making a choice) depends on whether certain neurons fire or not (in the arm *or* in the brain), then the agent must be able to *make* those neurons fire or not, if the agent is to be responsible for the action. In other words, we think we have to crawl down to the place where the indeterminism originates (in the individual neurons) and *make* them go one way or the other. We think we have to become originators at the micro-level and "tip the balance" that chance leaves untipped, if we (and not chance) are to be responsible for the outcome. And we realize, of course, that we cannot do that. But we do not have to. It is the wrong place to look. We do not have to micro-manage our individual neurons one by one to perform purposive actions and we do not have such micro-control over our neurons *even when we perform ordinary actions* such as swinging an arm down on a table.

What we need when we perform purposive activities, mental or physical, is *macro-control* over processes involving many neurons, processes that may succeed in achieving their goals despite the interfering or hindering effects of some recalcitrant neurons. We do not micro-manage our actions by controlling each individual neuron or muscle that might be involved. But that does not prevent us from macro-managing our purposive activities (whether they be mental activities such as practical reasoning, or physical activities, such as arm-swingings) and being responsible when those purposive activities attain their goals.

4. The luck problem (II): plural voluntary control and enhanced control

I have been arguing that giving indeterminism the location and role I do makes it possible to answer problems about luck and related objections to libertarian free will, rather than making it significantly more difficult, if not impossible, as Franklin contends. The points made thus far are a first stage in this argument. We now turn to the second stage. I begin with a quotation from Franklin which nicely expresses the reasons why one might think

that the location and role given to indeterminism *would* make it significantly more difficult, and perhaps even impossible, to answer problems about luck and control.

> It seems hard to understand why indeterminism, a condition that according to Kane reduces control, is required for agents to possess a more robust kind of freedom and responsibility than is possible in deterministic worlds. Isn't the problem with determinism, according to incompatibilists, that it prevents agents from possessing or exercising the necessary degree of control over our choices and actions? If this is the correct diagnosis of the problem of determinism, then how can indeterminism be the remedy if it is also a hindrance to control?

These are good questions. My answer to them is something Franklin does not adequately take account of in his paper, namely, that different *kinds of control* are involved in making sense of free action and free will. If there were only one kind of control relevant to human freedom, it would indeed be impossible to understand how indeterminism could enhance freedom and responsibility, if it was a hindrance to that one kind of control. But if there were only one kind of control agents could exercise over events, I contend, one could not make sense of freedom *of will* in the first place. For it is by diminishing control of a certain kind that indeterminism makes possible an enhanced control over free choices of another kind that is not possible in a determined world.

What is this enhanced control that indeterminism allegedly makes possible? It is, I contend, a species of *direct control* (DC) that agents may sometimes have over certain events: For an agent to have control at a time *t* in this direct sense over the being or not being of an event (e.g. a choice) is for the agent to have the *power* (ability plus opportunity) at that time *t* to *make* that event *be* at *t and* the power at *t* to make it *not be* at *t*. And in an SFA, one exercises just this kind of direct control over the choice one makes (e.g. the choice of A rather than B) at the time one makes it. For one not only had the power at the time the choice was made to make that choice be, but one also had the power at that time to have made it not be *by making the competing choice* (of B rather than A) *be*. One had both these powers at the time of choice because *either* of the goal-directed cognitive activities or volitional streams in which one was engaged might have succeeded in attaining its goal (choosing A or choosing B) at that time, despite the probability or chance of failure because of the interfering effects of indeterminism. And if either cognitive activity did succeed in attaining its goal, one could be said to have *brought about* the choice thereby made *by* endeavoring or attempting to bring it about.

Not only did one have direct control over both choices in this sense that one had the power at the moment of choice to make either be or not be, but the control one had was what I call *plural voluntary control* (PVC), that is, the power to make either choice be or not be at the time, *voluntarily* (without being coerced or compelled in doing so), *intentionally* (on purpose, rather than merely accidentally or by mistake or unintentionally), and *for the reasons* one had for making that choice rather than the competing choice. This would all be so because whichever choice was made would have been brought about by a goal-directed cognitive activity whose goal or purpose was to bring about *that* choice rather than the alternative and whose cognitive input consisted of the reasons or motives for making that particular choice rather than the alternative. And these things would have been so, even though the occurrence of the choice that was made would not have been *determined* by the states that motivated it (though it was *causally influenced* by those states) – an astonishing outcome once again. But it is the result one gets by (a) giving indeterminism an interfering or hindering role in larger goal-directed activities and (b) allowing for multiple such cognitive activities in deliberation.

We thus have an answer to Franklin's important question of how indeterminism can make possible an enhanced kind of control that agents may have over their free choices, despite the fact that indeterminism plays a hindering role in our cognitive activities. The control that indeterminism makes possible is PVC. And the further point that can now be made is that such PVC *is* an *enhanced* control of the kind that could not exist in a determined world. For the most compatibilists can say of agents in a determined world who make a choice voluntarily, intentionally, and rationally is that they may have chosen otherwise voluntarily, intentionally, and rationally, *if* the past and the laws of nature had been different in some way – if, for example, the agents had had different beliefs or desires or other motives than they actually had. Compatibilists cannot say that agents had the categorical power to have chosen otherwise voluntarily, intentionally, and rationally, given the *actual* laws of nature and the past *as it actually was* (including their actual motivations) at the moment of choice.

Not only is such categorical power more power than compatibilists can give us in a determined world, but it is also just the kind of power that libertarians have always wanted for free will and moral responsibility – a power to do otherwise that can be voluntarily (non-coercively), intentionally (purposefully), and rationally exercised here and now, *in the actual world as it is*, not merely in some hypothetical or possible world that might have been, but never actually was.

5. Regresses and efforts of will

I have not yet considered one further reason Franklin gives for believing that the location and role I give to indeterminism make it impossible to solve the luck problem and the problem of enhanced control. This reason concerns the role played in my view by efforts of will. He argues that it is a mistake on my part to make the freedom of self-forming choices or SFAs depend on their being brought about by prior actions or endeavorings or efforts of will. For then, whether or not the choices are free is going to depend upon whether or not the prior actions or efforts which bring them about are free. "A general theory of freedom", he says, "must offer a set of conditions under which the effort of will [that brings about a self-forming choice] is also free". And as a result, my "approach to constructing a theory of freedom is subject to familiar regress problems".

I agree that there *would* be potentially vicious regresses involved, *if* the plural efforts involved in bringing about self-forming choices or SFAs had *themselves* to be SFAs, or if these plural efforts had to be free in the same sense as SFAs, or had to be initiated by prior SFAs. But none of these things is the case on the view presented. To see why, consider first how the plural efforts preceding and leading to SFAs would normally be initiated on that view.

The plural efforts or volitional streams preceding SFAs *might* be initiated by further SFAs in *some* cases. We may sometimes be conflicted, for example, about whether even to *begin* to *deliberate* about a difficult choice that we have an aversion to thinking about. But this need not always be the case and will often not be the case. The plural efforts or volitional streams will normally be causally initiated by the confluence of the agent's conflicted will *plus* the agent's recognition of the situation he or she is in. When the businesswoman, for example, sees the assault in the alley and sees that no one else is currently present to help, this information is filtered through the present state of her will, including her conflicting desires and other motives. Deliberation thereby commences, causally initiated by the recognition of her situation and the awareness of a conflict in her will; and the competing volitional streams commence as well for they are ingredients in the larger deliberative process.

The agent must of course have some kind of *control* over each of the efforts or volitional streams once initiated that might lead to an SFA. But the control the agent must have over each such effort is not the PVC they have over the resulting SFAs. That would indeed lead to a regress. The control the agent has over each effort is rather what neuroscientist Usher (2006) has called teleological guidance control (TGC). As described by Usher, such TGC is necessary for any voluntary activity and he interprets it in terms of dynamic systems theory. Such systems (which are now known to be ubiquitous in nature, and include living things) are systems in which new emerging capacities arise as the result of greater complexity. The behavior of a complex dynamical system exhibits TGC when it tends through feedback loops and error correction mechanisms to converge on a goal (called an attractor) in the face of perturbations. The goal or attractor in the case of these efforts or volitional streams is a particular choice (e.g. a moral choice or an ambitious choice in the case of the businesswoman), and their input consists of the motives for making that particular choice (e.g. moral motives or ambitious motives, as the case may be).

It is important to recognize, as Usher points out, that TGC is compatible with determinism. So it is a compatibilist kind of control. And thus, by itself, TGC, if it were the only kind of control over events we could have, would not give us libertarian free will. But it is equally important to recognize, I argue, that TGC, though a compatibilist kind of control, *is a necessary ingredient in exercises of incompatibilist or libertarian free will*. If we did not first have the capacity for TGC, and hence for *voluntary* activity in general, we could not develop the PVC necessary for libertarian free will.

For, as Usher also points out, though TGC is compatible with determinism, *it is also compatible with indeterminism*. Complex dynamical systems can tend through feedback loops and error correction mechanisms to converge on a goal in the face of perturbations, even when it is undetermined whether the goal will be achieved. Moreover, in such cases, if the goal is achieved, it will have been brought about by the teleologically guided activity of the agent. Indeterminism thus *diminishes* TGC to some degree, but it need not eliminate it. And this is the case with the efforts or volitional streams preceding SFAs. The indeterminism stirred up by the conflict in the agent's will makes it uncertain that either of these efforts or volitional streams will attain its goal. But when one of them does attain its goal, the resulting choice will have been brought about voluntarily and intentionally by the agent for the reasons motivating that choice rather than the alternative.

Note therefore where we thus arrive: Two parallel goal-directed cognitive processes (volitional streams) simultaneously exercised by an agent, over each of which the agent has only "one-way" or singular voluntary TGC, together make possible "more-than-one-way" or PVC, since the agent might succeed in attaining the goal of either of the processes at a given time voluntarily, on purpose, and for reasons (though for different reasons in each case). Or, putting it in another way, two cognitive processes, over each of which the agent has what Fischer and Ravizza (1998) call *guidance* control, exercised simultaneously and in parallel, give rise to what Fischer and Ravizza call *regulative* control – the power at a time to bring about a choice by attempting to bring it about, and the power to bring about an alternative choice by attempting to do so.

This is an illustration of something for which I have often argued, namely that incompatibilist freedom and control presuppose compatibilist freedom and control. We cannot get to incompatibilist or libertarian freedom in one fell swoop in the real world. That is one leap too far. We must get there step-wise by first exercising compatibilist guidance control (TGC) over cognitive processes aimed at making choices, and from there, through parallel processing, to incompatibilist regulative control (PVC) over the choices (SFAs) that result from these cognitive processes. Or putting the matter in an evolutionary perspective, we had

to first develop the capacity for (compatibilist) TGC before we could develop – given the further cognitive complexity required to have and deal with conflicts in our wills – the capacity for (incompatibilist) PVC.

No infinite regresses result because the plural efforts leading to SFAs do not have to be initiated by still earlier efforts or by still earlier SFAs. These plural efforts or volitional streams would normally be causally initiated by the confluence of the agents' awareness of the conflicts in their wills plus their recognition of the situations they are in. In short, they will be initiated by the confluence of the agents' awareness of the external world in which they live and the internal world through which they live, and the relation between the two.

6. Phenomenology, rationality, and efforts of will

I conclude with two final objections about the role of efforts in my view that are mentioned sympathetically by Franklin, though he does not discuss them at length. Yet they are objections that have often been made to my view and will no doubt have occurred to readers of this paper. So I feel I must say something about them. The first of these objections concerns the *phenomenology* of plural efforts of will, and the second their *rationality.*

A frequently made objection to the role of efforts in the view presented is that we are not introspectively or consciously aware of making plural efforts and performing multiple cognitive tasks in self-forming choice situations. But I am not claiming that agents are introspectively aware of making plural efforts. What persons are introspectively aware of in SFA situations is that they are trying to decide about which of two options to choose and that either choice is a difficult one because there are resistant motives pulling them in different directions that will have to be overcome, whichever choice is made. In such introspective conditions, I am theorizing that what is going on underneath is a kind of distributed processing in the brain that involves separate attempts or endeavorings to resolve competing cognitive tasks.

The larger point I have often emphasized in this connection is that *introspective evidence cannot give us the whole story about free will*. Stay on the phenomenological surface and libertarian free will *is* likely to appear obscure or mysterious, *as it so often has in history.* What is needed is a *theory* about what might be going on behind the scenes when we exercise such a free will, not merely a description of what we immediately experience. And in this regard, new scientific ideas can be a help rather than a hindrance to making sense of free will. It is now widely believed that parallel processing takes place in the brain in such cognitive phenomena as visual perception. The theory is that the brain separately processes different features of the visual scene, such as object and background, through distributed and parallel, though interacting, neural pathways, or streams.[6]

Suppose someone objected that we are not introspectively aware of such distributed processing in ordinary cases of perception. That would hardly be a decisive objection against this new theory of vision. For the claim is that this is what we are doing in visual perception, not necessarily that we are introspectively aware of doing it. And I am making a similar claim about free will. *If parallel distributed processing takes place on the input side of the cognitive ledger (in perception), then why not consider that it also takes place on the output side (in practical reasoning, choice, and action)?* That is what I am suggesting we should suppose if we are to make sense of libertarian free will.

The other commonly made objection to the role of efforts of will is that it is *irrational* to make efforts to do incompatible things. I concede that in most ordinary situations it is. But I also contend that there are special circumstances in which it is not irrational to make

competing efforts: These include circumstances in which (i) we are deliberating between competing options; (ii) we intend to choose one or the other, but cannot choose both; (iii) we have powerful motives for wanting to choose each of the options for different and competing reasons; (iv) there is a consequent resistance in our will to either choice, so that (v) if either choice is to have a chance of being made, effort will have to be made to overcome the temptation to make the other choice; and most importantly, (vi) we want to give each choice a fighting chance of being made because the motives for each choice are important to us. The motives for each choice define in part what sort of person we are; and we would be taking them lightly if we did not make an effort in their behalf. These, I contend, are the conditions of "will-setting" or "SFA".

It is important in this connection to recognize the "self-forming" actions uniqueness of such "will-setting" situations. For our normal intuitions about efforts are formed in everyday situations in which our will is already "set one way" on doing something, where obstacles and resistance have to be overcome if we are to succeed in doing it. We want to open a door, which is jammed, so we have to make an effort to open it. In such everyday situations, it *would* be irrational to make incompatible efforts because our wills are already set on doing what we are trying or endeavoring to do. There are, in other words, "rationality constraints" on making efforts in *will-settled* situations because it is irrational to attempt to do contrary things when one's will is already set on doing one of them (and even more irrational if one's will were set on doing both).

But *will-setting* situations of the above kinds represent a third alternative in which one's will is not *yet* set on doing *either* of the things one is trying to do, but where one has strong *reasons* for doing each (e.g. deciding to A and deciding to B), and neither set of reasons is as yet decisive. Because most efforts in everyday life are made in will-*settled* situations where our will is already set on doing what we are trying to do, we tend to assimilate all effort-making to such situations, thereby failing to consider the uniqueness of will-setting, which is of a piece, in my view, with the uniqueness of *free will.*

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Notes

1. I have developed these steps in more detail and responded to objections made to the resulting theory of free will in many writings over the past three decades, including Kane (1985, 1989, 1996, 1999, 1999a, 2000, 2002, 2007, 2009, 2011, 2014). Kane (1999a) was part of a symposium on my view of free will in an early edition of *Philosophical Explorations* in which I responded to critical discussions by Randolph Clarke, Ishtiaque Haji, and Alfred Mele.
2. Kane (1996, 130ff). It is, of course, an empirical and scientific question whether any indeterminism *is* there in the brain in ways appropriate for free will. No purely philosophical theory can settle the matter. It is interesting, however, that in the past decade there has been more openness and discussion on the part of some scientists about this possibility. Christoph Koch is a respected neuroscientist and a tough-minded one at that. Like the vast majority of neuroscientists, he is sceptical of claims of some scientists and philosophers that quantum indeterminism could influence human

decision-making by way of large-scale quantum collapses in the brain. And he adds that "there is no evidence that any components of the nervous system – a warm and wet tissue strongly coupled to its environment – display quantum entanglement" (2009, 40). But Koch goes on to say that "what cannot be ruled out is that tiny quantum fluctuations deep in the brain are amplified by deterministic chaos" so that they might have non-negligible effects on neural processing and thereby affect human decision-making. Koch does not endorse this idea, but says that it cannot be ruled out, given what is currently known about the brain. In the most recent edition of *The Oxford Handbook of Free Will,* Bishop (2011, 91–92) agrees and cites a number of other scientists and philosophers who have made similar suggestions (Baker and Gollub 1990; Hilborn 2001; Hobbs 1991; Kellert 1993). Bishop goes on to point out that one need not even have to appeal only to chaos in the brain to get these effects. For, as he notes "the exquisite sensitivity needed for both the sensitive dependence arguments and the normal amplification of quantum effects is a general feature of nonlinear dynamics and is present whenever nonlinear effects are likely to make significant contributions to the dynamics of the system" (91). Moreover, it is generally agreed, as he notes, that nonlinear dynamics is pervasive in the functioning of human brains. For further discussion by scientists and philosophers about the possibility of indeterminacy in the functioning of the brain, including its possible evolutionary advantages, see for example, Balaguer (2010), Brembs (2010), Doyle (2011), Glimcher (2005), Hameroff and Penrose (1996), Heisenberg (2013), Jedlicka (2014), Maye et al. (2007), Shadlen (2014), Stapp (2007). In a recent book (2013), neuroscientist Peter Tse discusses at length a number of physical mechanisms in the brain, including processes of diffusion across synapses, that would "permit the amplification of microscopic fluctuations into macroscopic variability in spike timing" and thus make possible some significant indeterminism in neural processing (76).

3. Of course, these examples *by themselves* do not amount to genuine exercises of free will in SFAs, where the wills of the agents are divided between conflicting motives. The will of the assassin is not equally divided. He wants to kill the official, but does not also want to fail. Thus, if he fails, it *will* be *merely* by chance. And so it is with the husband. This step is thus just one piece of the larger puzzle. One has to add the other steps to get the whole picture, including the ideas of a conflicted will and a parallel processing brain involving multiple efforts.
4. Kane (1996, 126 ff).
5. Questions I have addressed in a number of other writings (1996, 2002, 2007, 2011, 2014) naturally arise here about what is meant by saying the *agent* causes the choice and thus how my view – which is often designated an "event-causal" libertarian view – differs from so-called agent-causal libertarian views. Let me say that I have always thought the designation "event-causal" for libertarian views like mine (though now well entrenched) is unfortunate because it has misleadingly suggested to many persons that one must choose between saying that free actions are caused by agents or that they are caused by events. This is a false choice. As I argue in the above writings, one does not have to choose between affirming "substance or agent causation" or "event causation" in describing free agency. One can affirm both, as I do. Event-causal descriptions simply spell out in more detail *how* agents, qua substances, understood as complex dynamical systems, cause their choices and actions. (They do so by exercising "TGC" over certain processes, as explained in Section 5 of this paper.) As I have put the matter elsewhere (2002, 428–429),

> a continuing substance (such as an agent) does not absent itself from the ontological stage because we describe its continuing existence – its *life,* if it is a living thing – including its capacities and their exercise, in terms of states of affairs, events, and processes involving it.

Where I differ from what are usually called "agent-causal" views of free will (hyphenated) is not in denying that agents cause their free actions, but rather in denying that agent causation of free actions is a *sui generis* kind of causation by a substance that by its very nature cannot in principle be deterministically caused by prior events or cannot in principle be caused by prior events of any kinds, deterministically *or* indeterministically. Such appeals to a special kind of cause that is by its nature undetermined or uncaused, it seems to me, try to get libertarian free will too easily, by fiat, as it were, rather than by honest toil.

6. For an overview of research supporting such views about parallel distributed processing in vision, see Bechtel (2001).

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