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A Critique of Compatibilist-Libertarianism

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ABSTRACT

Christian List has recently defended what he refers to as a compatibilist-libertarian theory of free will. He attempts to satisfy the libertarian requirement for alternative possibilities without assuming the falsity of physical determinism. To do so, List relies on a multi-level modal theory that he developed with Marcus Pivato. In this theory, List and Pivato demonstrate the compatibility of physical determinism and agential indeterminism. The success of compatibilist-libertarianism essentially hinges upon whether or not List and Pivato's theory is truly consistent with a non-hypothetical conception of possibility. In this paper, I argue that, despite his attempt to distance himself from a standard compatibilist (i.e. hypothetical) conception of possibility, List remains committed to such a hypothetical conception. I also argue that List's theory of agential causation is implausible given his modal interpretation of agency. Therefore, I conclude that compatibilist-libertarianism is an implausible theory of free will.

INDEX WORDS: Modal logic, Free will, Compatibilism, Libertarianism, Levels, Determinism

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1   INTRODUCTION

Christian List (2014) has recently defended what he refers to as a "compatibilist-libertarian" theory of free will. His theory is compatibilist insofar as it demonstrates that free will is compatible with physical determinism, while it is libertarian insofar as it requires agential indeterminism. He suggests that it may be described as both "cross-level compatibilist" and "agential-level libertarian" (unpublished-1, 18). In other words, he thinks that free will is compatible with the truth of determinism at the physical level, while it is not compatible with determinism at the level at which free agency must be described, i.e., the agential level. Notice that this theory assumes that agential indeterminism is compatible with physical determinism. Such cross-level compatibility assumes that the truth of determinism is relative to a specific level, such that determinism may be true at one level while false at another.[1]

The conceptual support for such a level-specific conception of determinism is what I will refer to as the multi-level modal theory, as developed by List and Pivato (2014). According to their theory, agential indeterminism is compatible with physical determinism if we assume (as they do) that "higher-level states [such as agential states] are typically multiply realizable by lower-level states" (2014, 20). In their jargon, the basic idea is that a multiply-realized, higher-level history may have multiple possible (higher-level) futures, despite the fact that each of the history's multiple lower-level realizers only has a single possible (lower-level) future. So, because there are multiple lower-level histories that can realize a single higher-level history, there may be multiple possible higher-level futures, even though each lower-level history only has a single possible future. Therefore, List and Pivato conclude that higher-level indeterminism

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[1] Traditionally, determinism is considered to be a property of entire worlds, such that either determinism is true of the entire world, or it is not. The idea that determinism and indeterminism can both be true at different levels of the same world is a view that is, as far as I know, unique to List.

(more than one possible future) is compatible with lower-level determinism (only one possible future) if the higher level is multiply realizable at the lower level. The key assumption is that all of the modal propositions that are relevant to free agency are level-specific.

By demonstrating the compatibility of physical determinism and agential indeterminism, List attempts to develop a compatibilist theory of free will that satisfies the libertarian requirement for alternative possibilities, or the possibility of doing (or the ability to do) otherwise – hence, compatibilist-libertarianism. In order to distance his view from those of standard compatibilists, List argues that standard compatibilist conceptions of possibility are either conditional or dispositional, and what unites both of these conceptions of possibility is that they are hypothetical. According to these views, agents only have alternative possibilities available to them insofar as things could have been different, assuming some aspect of the past had been different. Because these conceptions of possibility are all hypothetical, libertarians are not satisfied. Libertarians want a conception of alternative possibilities in which more than one future is available to an agent given an identical history in a world with identical laws. Given the compatibility of agential indeterminism and physical determinism, however, List claims to have solved this problem for the compatibilist. In other words, he claims to have provided the compatibilist with alternative possibilities that even a libertarian would (or, at least, should) accept. One goal of this paper, however, is to argue that List has failed to provide a non-hypothetical conception of possibility.

In defense of compatibilist-libertarianism, List poses an objection to the consequence argument. Initially proposed by Peter van Inwagen (1986), the modal version of the consequence argument concludes with a modal proposition about agents (roughly, no agent ever has the possibility of doing otherwise and hence no agent has free will) that is supposedly entailed by the

truth of determinism. For the argument to be valid, there are two rules of inference proposed by van Inwagen that must also be valid. The first of which, Rule Alpha, says that we can infer an agential-level modal proposition (e.g., '~P is agentially impossible') from another modal proposition (e.g., 'P is necessary'), where the latter modal proposition is entailed by the truth of determinism. But, according to List, although physical determinism may turn out to be true, we have good reason to believe that agential determinism is false. Therefore, List argues that any sound version of the consequence argument must begin by assuming the truth of physical determinism. But, if we assume physical determinism, then the only way for the argument to derive an agential-level modal proposition from physical determinism is to assume Rule Alpha allows for cross-level modal inferences. But if Rule Alpha allows for cross-level modal inferences, then it must be invalid.[2] According to List, agential-level modal propositions (such as, ~P is agentially impossible) cannot be derived from any physical-level modal proposition (such as, P is physically necessary). Consequently, List concludes that the consequence argument is invalid insofar as an agential-level modal proposition (namely, the conclusion that an agent does not have the possibility of doing otherwise) cannot be derived from a physical-level modal proposition (i.e., any of the modal propositions entailed by the truth of physical determinism). In short, his objection to the consequence argument relies on his rejection of cross-level modal reasoning – according to List, cross-level modal propositions are not well-formed and cross-level modal inferences are invalid.

In an attempt to revise both the consequence argument and List's multi-level modal theory, I propose a way of conceptualizing cross-level modal reasoning that I argue is both

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[2] Others have argued that Rule Alpha and van Inwagen's second rule – Rule Beta – are both invalid for different reasons. I will not discuss any of those arguments in this paper.

consistent with common instances of such reasoning in science and provides a framework for understanding the significance of List and Pivato's argument for emergent indeterminism. Specifically, I introduce what I refer to as a meta-level. For now, it will suffice to say that what I have in mind is another application of the levels metaphor in which two or more 'levels' are considered at once.[3] With meta-levels and some rules for deriving meta-level modal propositions from level-specific modal propositions worked into List's modal theory, I propose a revised version of the consequence argument designed to avoid the objection posed by List's response. What I aim to demonstrate in the revision is that List must be committed to the hypothetical conception of possibility that he hopes to avoid. In light of this, I argue that compatibilist-libertarianism provides nothing more a new-fangled version of compatibilism that is stuck with the hypothetical conception of alternative possibilities, which libertarians should find no more satisfying than previous versions.

To further develop my critique of List, I also argue that compatibilist-libertarianism actually fares worse than standard compatibilism. To demonstrate, I describe two caricatures of popular arguments in the free will literature – the first of which is directed against the compatibilist, the second is directed against the libertarian. I refer to the first argument as the causal source objection. In short, this objection states that, if determinism is true, then agents cannot be considered the causal source of their actions. What seems to be the most common, and I think the most plausible, response to this objection consists in demonstrating that agents may be the most plausible difference-makers of the direct consequences of their actions. List and Menzies (2017), for example, have developed such a strategy in response to the causal exclusion argument. So far, List's view seems just as well off as any compatibilist view that invokes a

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3 For a discussion of the multiple uses of the "levels metaphor," see Craver (2015).

difference-making account of causation. But after considering the randomness objection – the second of the two objections I will discuss – I argue that the compatibilist-libertarian is actually in a worse position than the compatibilist insofar as the difference-making account of agential causation appears to be inconsistent with agential indeterminism. Assuming agential indeterminism, what seems to best explain the difference between two worlds with identical agential histories and divergent agential futures is each world's distinct physical history (since each agential future has the same history, while each distinct physical future has a distinct history). Thus, a difference-making account of agential causation seems to undermine the plausibility of agential causation within the theoretical framework articulated by List.

I conclude the paper by arguing that List's has three recourses against my argument: (1) he could argue that cross-level modal reasoning is intrinsically fallacious (a view I argue against in this paper), (2) he could accept my construction of meta-levels but insist that free will must be described solely at the agential level (and at any meta-level that merely includes the agential level as a base-level), or (3) he could insist that causation is level-specific (a view I will not argue against in this paper). Insofar as the latter view has been defended, List's view may remain plausible without needing to address my objection. In any case, I hope this paper will, at the very least, call his view into question and place on his shoulders the burden of answering a few more questions about the coherency of his view. As it stands, I'm not convinced that List's theory truly satisfies any libertarian requirement, and I'm concerned that his theory is less coherent than other versions of compatibilism. At best, I think he has only provided standard compatibilists with a logical framework for thinking about alternative possibilities hypothetically, but without satisfying any sort of libertarian requirement for alternative possibilities. At worst, his view is incoherent.

2   COMPATIBILIST-LIBERTARIANISM

In this section, I introduce the multi-level modal theory to which List is committed. In short, it's a way of thinking about modality in a leveled world. A leveled world is simply a world that can be divided into distinct levels – what this means will, I hope, be made clearer in this section. List's multi-level modal theory provides a way for thinking about the modal properties of a world that is divisible into distinct levels. To be precise, the theory is a logical framework for deriving modal propositions about multi-level dynamical systems. I emphasize that List has a level-specific conception of modality, according to which the truth of determinism and other modal propositions are level-specific. For example, List argues that, even if physical-level determinism is true, agential-level determinism may be false. The logical consistency of physical determinism and agential indeterminism is what makes List's compatibilist-libertarian theory of free will logically possible. There are three goals in this section: (1) to explain the basic structure of List's multi-level modal theory; (2) to explain the logical possibility of physical determinism and the emergence of indeterminism at higher levels; and (3) to describe List's theory of free will and his commitment to a non-hypothetical conception of possibility.

2.1   Modality in a leveled world

I begin by explaining List's (unpublished-2) unified framework for a system of levels.[4] Consider the two levels that he considers for the purposes of defending his theory of free will –

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[4] His framework is unified insofar as it can account for four distinct conceptions of a level: levels of granularity, ontological levels, levels of description, and levels of dynamics. Assuming List's unified framework is sound, all of the claims made in this paper should apply to each conception of levels. With that said, however, I will only discuss levels of description and dynamics insofar as these conceptions are the most amenable for the purposes of evaluating the consequence argument.

the physical level and the agential level.[5] Each of these levels (qua levels of description) contains a specific language capable of describing any possible world at that level (and only that level). So the language of physics is capable of describing all of the physical facts of any possible world that has physical facts, while the agential language is capable of describing all of the agential facts of any possible world that has agential facts. A complete specification of a possible world at a specific level will include a complete specification of that world's facts at that level and in the language of that level. Consequently, the number of possible worlds is relative to the granularity of the level of analysis. For example, a lower level such as the physical level is finer-grained than higher levels; therefore, the level of physics will carve logical space into more possible worlds than a higher one such as the agential level.

List and Pivato refer to each complete specification of a possible world at a specific level as a history h. For example, there is a single physical history p that specifies all of the physical facts about our world (even if those facts have yet to be settled at this point in time). Put simply, histories are level-specific possible worlds. An incomplete specification of a possible world at a specific level from the beginning of that world until some arbitrary time t is referred to as a truncated history h_t. For example, there is a single truncated physical history p_t that specifies all of the physical facts about our world from the beginning of our world until t.

With the notion of histories (which are simply level-specific possible worlds), the modal facts of a possible world can be specified. According to List and Pivato, the truth of a modal proposition about some future state S is determined by the number of histories [$\{h^1, h^2 \dots h^n\}$ where $S \in h^1$ and $S \in h^2$ and $\dots S \in h^n$] that are nomologically consistent (according to the laws

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of the level at which *S* is described) with the truncated history h_t of the specific world in question. For example, the physical state *P* is possible in world *w* at *t* if and only if there is at least one history *p* such that $P \in p$ and *p* is nomologically consistent with the physical laws of *w* and the truncated physical history p_t of *w*. Conversely, *P* is necessary if there is only one nomologically consistent history and *P* is impossible if there are no nomologically consistent histories. For the purposes of this paper, specific states (which are subsets of histories) will be notated with capital letters (such as *P* – a physical state, or *A* – an agential state), while complete histories of the world will be notated with lower-case letters (such as *p* – a physical history, or *a* – an agential history). This is consistent with the notation employed by List.

The level-specificity of this modal framework must be emphasized. To say that *P* is possible in some world is to say that *P* is possible relative to the laws of physics and the truncated physical history of that world. So to say that *P* is possible is to say that *P* is physically possible. But to say that some agential state *A* is possible is to say that *A* is agentially possible. Since the agential level is distinct from the physical, List uses the following level-specific modal operators for distinguishing physical and agential modal propositions:

- Physical necessity and possibility: $\Box P$ and $\Diamond P$
- Agential necessity and possibility: $\blacksquare A$ and $\blacklozenge A$

Since these modal operators are relative to level-specific histories and laws, the domain of each modal operator only includes states that are described at a specific level. Thus, physical states cannot be agentially possible or necessary, and agential states cannot be physically possible or necessary. Such cross-level modal propositions are not well-formed according to List and Pivato's multi-level modal theory.

It is important to emphasize the difference between the conception of modality defined within the multi-level modal theory and the logical conception of modality.[6] According to List and Pivato (unpublished), their theory is describing a nomological conception of modality in which a future state is assigned modal properties relative to its consistency with the past and the natural laws. A state may be nomologically impossible given certain conditions in the actual world even though it is logically possible. For example, it may be nomologically impossible for me to perform a better bicycle kick than Cristiano Ronaldo, even though it is certainly logically possible for me to do so. With this in mind, it is easy to see the difference between physical and agential modal properties. While it may be physically possible for the collection of physical stuff that constitutes my body to be moved from one location to another, it may be agentially impossible if moving to that other location involves placing myself into an undesirable agential state (such as boredom, fear, or anxiety) given the history of my life as an agent and the laws that determine my behavior. Put simply, if we are thinking about what is nomologically possible, we may reach different conclusions depending upon which set of laws we are considering. For the purposes of this paper, it will be assumed that all references to possibility and necessity are nomological unless otherwise noted.

2.2 Supervenience, multiple realization, and emergent indeterminism

Nevertheless, there are some cross-level modal properties in a leveled world. In fact, List argues that, for any collection of levels to truly constitute a system of levels, there must be some set of supervenience mappings between those levels. In agreement with Kim that a system of

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[6] Hegel makes a similar distinction between formal (or logical) and real (or relative) possibility. Something is formally possible insofar as it is non-contradictory, while something is really possible given the totality of conditions that would necessitate the thing's actualization.

levels need not be linearly ordered, List argues that a system of levels can be partially ordered according to "higher-than" and "lower-than" relations between levels (unpublished-2, 5). To say that the agential level is higher than the physical level is to say that the agential level supervenes on the physical. According to List, this entails that there is a surjective mapping of physical states onto agential states such that every physical state maps onto a specific agential state.[7] A surjective mapping from one set to another simply means that every member of the first set corresponds to a single member of the second set, even though some members of the second set correspond to multiple members of the first set. In short, a surjective mapping from the physical level to the agential implies that the physical facts determine the agential facts. This means that each physical state necessitates a specific agential state, even though multiple physical states may be possible for any given agential state.[8] According to List, higher levels, such as the agential level, are most likely multiply realizable at lower levels, such as the physical level. So although each physical state must correspond to a single agential state, there may be some agential states that correspond to multiple physical states. In other words, some agential states may stand in a one-to-many relation to physical states.[9]

[7] A surjective mapping between lower and higher levels simply means that every lower-level state corresponds to a *single* higher-level state, even if some higher-level states correspond to *multiple* lower-level states. Technically, List may be wrong to think that this mapping is surjective because there are seemingly physical states that do not correspond to any agential state.

[8] To clarify, I do intend to say that every physical state necessitates a specific agential state. One might argue that certain physical states do not necessitate any agential state. For example, puddles of mud do not seem to realize any agential state; therefore, it would be strange to insist that puddles of mud necessitate any sort of agential state. But I would argue that puddles of mud do necessitate the absence of any agential state. I describe necessity relations this way because it captures the idea that supervenience entails the complete necessitation of all supervenient facts by subvenient facts.

[9] It may be worth noting that most philosophers would not endorse their conception of multiple realization. For example, one of List's examples of multiple realization is that "many different states of the individual water molecules in a flask can instantiate the same aggregate state of the water" (2017, 9). But this disjunction of lower-level molecular arrangements of H_2O do not have any relevant differences in the way in which they realize the higher-level functional property of being water, or being drinkable, or boiling at 100 degrees Celsius, etc. So for philosophers such as Shapiro and Polger (2016), who argue that differences in color or material do not necessarily constitute relevant functional differences in the way in which two distinct bottle-openers perform the function of

Since the agential level is likely multiply realizable, List and Pivato argue that the truth or falsity of agential determinism is independent from the truth or falsity of physical determinism. In their jargon, determinism is true if and only if every truncated history is nomologically consistent with only one possible history; while indeterminism is true if some truncated histories are consistent with more than one possible history. So if we assume physical determinism, then we are assuming that every truncated physical history is nomologically consistent (according to the laws of physics) with only one possible physical history. But assuming the agential level is multiply realized, there may be multiple agential histories that are nomologically consistent with any truncated agential history that supervenes on a physically deterministic history.

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opening bottles, List's conception of multiple realization is too liberal. In any case, I will simply assume List's conception of multiple realization for the rest of this paper, which shouldn't be too controversial since many of those who think that multiple realization is false may still believe that something like List's conception of multiple realization is true, even if they would not refer to it as 'multiple realization.' So readers familiar with the multiple realization literature may want to keep in mind that, henceforth, 'multiple realization' will refer to List's conception.
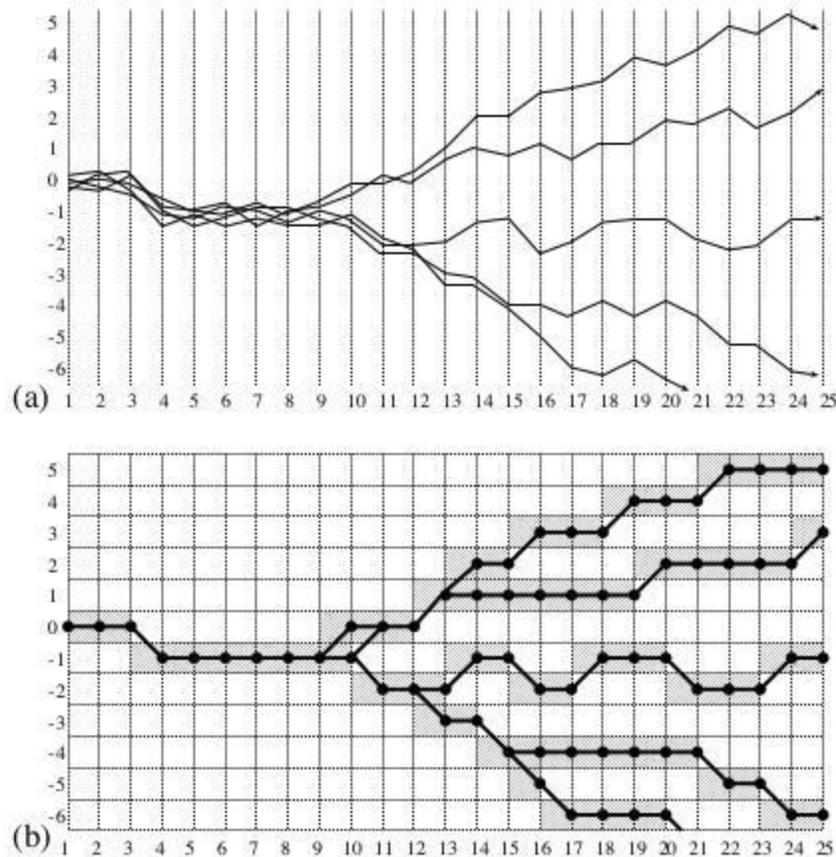
Figure 1. Emergent Indeterminism

To demonstrate, I have borrowed the above diagram from List and Pivato. Figure 1a illustrates a deterministic lower level. Each line represents a specific history that can be divided into truncated histories and futures. Notice that there are no branching histories – for every truncated history, there is only one possible future. In figure 1b, however, there are many branching histories. Most notably, the truncated history h_8 is multiply realized by five distinct truncated histories at the lower level. And since h_8 is multiply realized by these five distinct and deterministic lower-level histories, it may have up to five distinct possible futures.[10]

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[10] Emergent indeterminism is quite similar to Donald Davidon's (1980) anomalous monism. While List and Pivato insist that emergent indeterminism is consistent with the physicalism – the thesis that everything is

It is important to notice that supervenience mappings establish modal relations that must hold between the two levels. List even claims that supervenience mappings can be understood as "necessitation mappings" (2017, 4). Since the agential level supervenes on the physical level, all of the agential facts in a world are necessitated by the physical facts of that world. But notice that this makes it seem as if, despite the appearance of agential indeterminism, any world that is fundamentally physical (i.e. all levels supervene on the physical) and physically deterministic must be actually deterministic at the agential level. If all of the physical facts about the future are necessary and all of those facts necessitate a specific agential future, then there isn't really more than one possible agential future (because if there were more than one possible agential future, then there should be facts about that future that are not-necessary). From this perspective, it would seem as if agential indeterminism is merely epistemic – the agential level only appears to be indeterministic if we leave out information about the level on which it supervenes.

It is probably not surprising, however, that List and Pivato (2014) acknowledge this objection and have a response. They argue that, although the motivation for distinguishing between two levels may be epistemic, the modal properties nomologically defined within each level are objective. As List puts it, we may initially be motivated to develop a distinct level of description to describe agents because explaining human behavior solely in the language of physics would be epistemically impossible. But even if our motivations for describing a new level are epistemic, the modal properties defined within each level need not be epistemic – they may be objective features of the world described at the new level. In other words, their

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fundamentally physical. Thus, List and Pivato are committed to physical monism. Furthermore, the justification List and Pivato provide for assuming agential indeterminism is certain anomalies that agential theories seem incapable of explaining. Similarly, the justification for agential indeterminism is quite similar to what Jerry Fodor (1974) has referred to as the ceteris paribus laws of the special sciences.

suggestion seems to be that levels are externally epistemic, while internally objective. In a nutshell, this response simply reiterates their level-specific conception of modality. As I will explain in more detail in the third section, List argues against the possibility of constructing cross-level modal propositions and making cross-level modal inferences. For now, it will suffice to say that List argues that cross-level modal propositions are not well-formed and that cross-level derivations are fallacious.

2.3   A non-hypothetical conception of possibility

List first proposed his compatibilist-libertarian theory of free will in his paper, "Free will, determinism, and the possibility of doing otherwise" (2014). Citing the compatibility of physical determinism and agential indeterminism, he demonstrates that the libertarian requirement that free agents have the possibility of doing otherwise is compatible with physical determinism. Moreover, he insists that only a modal (or, as I argue, non-hypthetical) interpretation of the 'possibility of doing otherwise' is sufficient to satisfy this requirement – in other words, only a modal conception of possibility is consistent with libertarianism.

Contra other compatibilists, he argues that both the conditional and dispositional accounts of the possibility of doing otherwise fail to conceptualize possibilities as actually being available to agents. In other words, what both the conditional and dispositional accounts have in common is that they only make sense of the possibility of doing otherwise hypothetically. Consider the conditional account. On this account, an agent is said to have the possibility of doing otherwise insofar as they would have acted otherwise *if* they had chosen otherwise. While on the dispositional account, an agent is said to have the possibility of doing otherwise insofar as they would have acted otherwise *if* some unexercised yet present disposition had been exercised. What both of these accounts have in common is that an agent is said to have the possibility of

doing otherwise *if* they would have acted differently in some sort of different context. According to a modal account, however, an agent is said to have the possibility of doing otherwise if and only if that possibility is consistent with the actual history of that world. In other words, a modal account requires future states to be possible without hypothetically altering any of the historical context in order to truly be considered 'possibilities.'

Not surprisingly, List cites the compatibility of physical determinism and agential indeterminism in order to demonstrate that a modal conception of alternative possibilities is consistent with physical determinism. First, if we assume agential indeterminism, then it is logically possible that an agential history could have been otherwise at time *t* without altering any aspect of that *agential* history prior to *t*. According to List, this satisfies a libertarian conception of the possibility of doing otherwise insofar as it does not rely on a hypothetical account of such possibilities. And since agential indeterminism is logically consistent with physical determinism, this should also satisfy the compatibilist. Therefore, he refers to his theory of free will as 'compatibilist-libertarianism.'

But, as Nadine Elzein and Thomas Pernu (2017) have argued, List's theory of free will "fails to break us from [the] deadlock within the free will debate" between compatibilists and incompatibilists. To be clear, the target of their critique is supervenient libertarian theories in general. But since List's compatibilist-libertarianism seems to provide the most formal representation, or perhaps the most prototypical, of these sorts of theories, they focus their argument almost exclusively on his theory of free will. Supervenient libertarianism is essentially the attempt to reconcile the libertarian requirement for alternative possibilities with physical determinism by employing the distinction between distinct levels – such as the physical and agential. So for my purposes, supervenient libertarianism can be considered identical to

compatibilist-libertarianism. According to Elzein and Pernu, what truly distinguishes compatibilist and libertarian accounts of "the ability to do otherwise" is that compatibilists are "non-actualists" and are satisfied with "conditional and dispositional analyses," while libertarians are "actualists" and are committed to a "non-conditional analysis" (222). They argue that List's theory of free will can be described as an actualist-compatibilist theory of free will.

However, Elzein and Pernu are skeptical about whether or not List succeeds in articulating a compatibilist theory of free will that is truly consistent with actualism. The non-necessary possibilities of agential indeterminism seem to be undermined by the necessity of physical determinism and the supervenience relations between the physical and agential levels. Recall that multiple realization is a one way street. Although there are multiple physical states that correspond to a single agential state, each physical state necessitates a specific agential state. And of course physical determinism necessitates each physical possibility – in other words, each physical state is only possible if it is also necessary; or, if (and only if) a physical state is possible, then it is necessary. So unless List wants to abandon supervenience, it seems to follow that the non-necessary agential possibilities are only epistemically non-necessary. In fact, however, only a subset of the agentially non-necessary possibilities are possible given the actual history of the world. To be precise, only those agential states that are necessitated by their necessary physical realizers are possible. And because they're necessitated by necessary states, they must be necessary themselves.

List, of course, justifies the consistency of agential indeterminism and physical determinism by appealing to the level-specificity of modality. Elzein and Pernu discuss two "basic lines of justification" for such a level-specific conception of modality. First, List appeals to the impossibility of predicting agential phenomena with only physical laws. And second, he

appeals to the impossibility of translating agential language into physical language. I do not challenge List on the plausibility of either of these claims. However, I argue that neither of these claims is sufficient to restrict his multi-level modal theory to such a level-specific conception of modality insofar as both of these impossibilities are merely epistemic. As I see it, merely epistemic reasons for differentiating between the two levels is not sufficient to exclude modal reasoning that cuts across those levels. In defense of the first claim, he argues that it is "completely infeasible" to predict human behavior solely at the physical and neuroscientific levels (2014, 168). And in defense of the second claim, he argues that it may be "computationally impossible" to ever know the complete set of physical states upon which any given agential state is multiply realized. But it is both completely infeasible and computationally impossible to provide an objective measure over which futures are nomologically consistent with the entire physical history of the world. Nevertheless, List thinks that this idealized way of thinking provides us with a useful framework for thinking about the modal structure of the world. Likewise, even though cross-level modal reasoning may be epistemically or computationally impossible, there is no reason to think that we can't have an idealized framework for thinking about the cross-level modal structure of the world.

Elzein and Pernu seem satisfied concluding that List's theory of free will *may be* much closer to the standard compatibilist accounts from which he is attempting to distance himself. Although they remain skeptical, they are open to the plausibility of List's level-specific conception of modality and the coherence of his view as both an actualist and compatibilist theory of free will. In contrast, however, I attempt to pose a much more damaging critique in List's argument. Although they remain open to the plausibility of the level-specificity of the multi-level modal theory articulated by List and Pivato, I am not convinced. As I will argue in

the next two sections, List's theory must assume a hypothetical (or, non-actual) conception of possibility. If this argument is sound, then List's theory of free will should be considered compatibilist, plain and simple – it is neither actualist nor libertarian. In the next section, I describe List's response to the consequence argument which explicitly relies on two objections that he makes against cross-level modal reasoning. In both of these objections, List cites formal reasons against the possibility of allowing for a cross-level conception of modality in his multi-level theory. In the following section, I attempt to formalize a new concept – namely, meta-levels – into the theory that avoids both of List's objections and allows us to make cross-level modal inferences.

3   THE INVALIDITY OF CROSS-LEVEL MODAL REASONING

In this section, I explain the consequence argument and List's response, which cites the invalidity of cross-level modal reasoning. But more importantly for the purposes of this paper, I argue that List's response to the consequence argument commits him to the sort of hypothetical analysis of alternative possibilities that he claims compatibilist-libertarianism avoids. As I explain in this section, List's best counter-response is his argument for the invalidity of both cross-level modal propositions and inferences. It is important to recognize, however, that these propositions and inferences are only invalid according to the assumptions of List's multi-level theory. In the next section, I argue that we can formally introduce 'meta-levels' into his theory and develop a sophisticated account of cross-level modal reasoning. But before doing so, the reasons against cross-level modal reasoning should be made clear.

3.1   The consequence argument

The original consequence argument proposed by van Inwagen (1986) presupposes two rules: Rule Alpha and Rule Beta. I will only be concerned with Rule Alpha insofar as List's objection to the consequence argument is that Rule Alpha is invalid. According to van Inwagen's formulation, Rule Alpha states:

- Original Rule Alpha: $\Box P \rightarrow NP$

where NP states that "P is true, and there is nothing anyone could have done to make it false." According to List, we can replace N with the modal operator $\sim\blacklozenge\sim$. So we can revise Rule Alpha in the modal jargon of List and Pivato:

- Rule Alpha: $\Box P \rightarrow \sim\blacklozenge\sim P$

When we say that there is "nothing anyone could have done make P false," we are saying that $\sim P$ is impossible at the agential level. Therefore, NP is equivalent to $\sim\blacklozenge\sim P$. So, at least according to

List, the Original Rule Alpha and Rule Alpha as they are depicted above are equivalent – I have

no qualms with this view.

Given the revision of Rule Alpha in the language of the multi-level modal theory, List

reconstructs the consequence argument as follows[11]:

- Rule Alpha: $\Box P \vdash \sim\blacklozenge\sim P$

- Rule Beta: $\sim\blacklozenge\sim(P \rightarrow Q), \sim\blacklozenge\sim P \vdash \sim\blacklozenge\sim Q$

1. $\Box ((p_o \,\&\, L) \rightarrow P)$ Determinism

2. $\Box (p_0 \rightarrow (L \rightarrow P))$ Exportation

3. $\sim\blacklozenge\sim(p_o \rightarrow (L \rightarrow P))$ Rule alpha

4. $\sim\blacklozenge\sim p_o$ Assumption

5. $\sim\blacklozenge\sim(L \rightarrow P)$ Rule beta

6. $\sim\blacklozenge\sim L$ Assumption

7. $\sim\blacklozenge\sim P$ Rule beta

The basic idea is that, if physical determinism is true, then any physical state that is

nomologically possible (relative to the laws of physics and the physical past of the actual world)

is also necessitated by the past and the laws of physics. And since there is nothing anyone can do

to change the past, the laws of physics, or the fact that each possible future state is a necessary

consequence of the past and the laws of physics, then there is nothing anyone can do (or could

have done) to change the fact that some future state must occur.

Before explaining List's response to the consequence argument, it is important to note

what most compatibilists consider to be the best type of response. Perhaps most notably, David

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[11] To be clear, if the two iterations of Rule Alpha described above are equivalent (which I assume is the case), List's reconstruction of the consequence argument should be equivalent to van Inwagen's initial formulation of the argument.

Lewis (1981) points out that, if the laws had been slightly different, then a different agential state would have been possible. Notice that this relies on the sort of conditional (or, hypothetical) analysis of possibility described in the previous section. In fact, Kadri Vihvelin (2013) refers to Lewis' response (and similar responses) as conditional. What these sorts of views have in common is their hypothetical structure – *if* the laws had been slightly different, or *if* the past had been completely different, then some other agential state would have been possible. Both of these sorts of responses rely on hypothetically altering the actual past or the actual laws in order to derive alternative possibilities. Although Vihvelin's own account of the possibility of doing otherwise is dispositional rather than conditional, it too is hypothetical. The basic idea is that an agent could have acted otherwise *if* they had acted on a disposition that was unexercised in the actual circumstances. This is consistent with the agent having the disposition in question in the actual circumstances, as long as the disposition was unexercised. So although an agent's dispositional constitution need not be hypothetically altered to make sense of the possibility of doing otherwise, whether or not the disposition was exercised must be. Thus, even the dispositional account of the possibility of doing otherwise is hypothetical.

As I explained in the previous section, List insists that the theoretical virtue of compatibilist-libertarianism is that it need not rely on such a hypothetical analysis of the possibility of doing otherwise. Given his level-specific conception of modality, compatibilist-libertarianism provides agents with robust modal possibilities, i.e. non-necessary possibilities that may be considered possible without hypothetically assuming that the entire past or some of the laws had been different. Therefore, a conditional response to the consequence argument is not available to List without undermining the libertarian side of his theory of free will. Although he doesn't say so explicitly, he does seem to suggest that these sorts of objections to the

argument are inconsistent with compatibilist-libertarianism. Without an argument to the contrary, I will assume that a hypothetical response to the consequence argument is inconsistent with the compatibilist-libertarian theory of free will that List has in mind.

3.2 The compatibilist-libertarian response to the consequence argument

List argues that the primary problem with van Inwagen's consequence argument is the invalidity of Rule Alpha. What is invalid about the rule is its cross-level modal structure. According to List, we cannot infer modal propositions at one level from modal propositions at another level. And in van Inwagen's depiction of the argument, Rule Alpha must be used to derive an agential modal proposition from a physical modal proposition. There are two ways in which we can understand this inference, both of which are invalid. First, we might interpret P as a physical state. If so, then the expression '$\sim\blacklozenge\sim P$' would not be well-formed insofar as the domain of the agential modal operator '$\blacklozenge$' only consists of agential states. Second, we might interpret P as an agential state. If so, then '$\square\ P$' would not be well-formed insofar as the domain of the physical modal operator '$\square$' only consists of physical states. Either way, Rule Alpha is invalid because it must rely on an assertion that is not well-formed. Since List believes that the agential level is most likely both multiply realized and indeterministic (even if physical determinism is true), he insists that there are often multiple possible agential futures (even though there may be only one possible physical future). Therefore, he concludes that the consequence argument, as advanced by van Inwagen, relies on an invalid inference from a physical-level modal proposition to an agential-level modal proposition.

With that said, List does consider two valid versions of the consequence argument – one physical, the other agential. The problem is that neither is sufficient to make an inference about free will. The physical version derives a physical-level modal proposition from the truth of

physical determinism. But physical-level modal propositions are not sufficient to determine whether or not multiple possibilities are available to an agent. Therefore, this version of the consequence argument is irrelevant with respect to free will despite being both valid and sound. Alternatively, an agential version is capable of concluding that no agent ever has the possibility of doing otherwise. But it must assume the truth of agential determinism, which (according to List) is unlikely to be true. Therefore, the agential version can only undermine the existence of free will by assuming an implausible premise, rendering it unsound.[12] What both of these valid arguments have in common (besides being insufficient to undermine free agency) is that they are both level-specific. Consequently, we must conclude that level-specific versions of the consequence argument are valid but insufficient to undermine free will, while cross-level versions are sufficient to undermine free will but invalid.

So perhaps the most obvious challenge to List's view is to reject his level-specific conception of modality. He considers two possible strategies – one of which involves making a cross-level inference, while the other involves a cross-level modal proposition. In response to the first, he points out that any cross-level modal inference must rely on the language of supervenience, which is the only sort of cross-level logical relation available within his multi-level modal theory. But, he argues, the language of supervenience only allows us to assert propositions about the relations between states at different levels – supervenience does not allow us to assert modal propositions about states at a specific level. And in response to the second strategy, he points out that cross-level modal propositions (e.g., the agential state *A* is physically

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[12] It is worth noting that List's concession that agential determinism is sufficient to undermine free will may satisfy van Inwagen. If agential determinism is true, then we could construct a valid and sound version of the consequence argument. This may be sufficient to capture van Inwagent's intention – if agential determinism is true, then free will is not possible. The question is whether or not physical determinism implies agential determinism.

necessary and the physical state *P* is agentially necessary) are not well-formed propositions insofar as the domain of such modal operators is level-specific. And since the domain of the modal operators is level-specific, such cross-level modal propositions are meaningless.

But notice that both of these objections are formal. List is only appealing to the rules of the system that he has designed. Beyond citing such formal rules, List's only arguments against cross-level modal reasoning are epistemic, as I discussed in the previous section. These arguments, however, only cite epistemic limitations and do not place any normative restrictions on the type of concepts that we can formalize in a multi-level modal theory. If sufficient justification were provided to introduce a new concept into the theory that allowed for cross-level modal reasoning, then both List's response to the consequence argument and his theory of free will may be undermined. In order to fill the cross-level gap in List's multi-level modal theory, I introduce what I refer to as meta-levels in the next section.

4 META-LEVELS

In this section, I propose an addition to the multi-level modal theory described in the first section. Specifically, I introduce the notion of a meta-level.[13] The purpose of a meta-level is to provide a formal basis for cross-level modal reasoning. Contra List, I see no reason to exclude cross-level modal reasoning from the multi-level modal theory. To be blunt, it seems obvious to me that scientists frequently make inferences about the modal properties at one level based upon the modal properties at another. In a nutshell, we can describe this sort of cross-level modal reasoning with the concept of a meta-level. Moreover, as I will argue below, the concept of a meta-level helps demonstrate the significance of the argument for the emergence of indeterminism. Without assuming at least one of the rules of inference I introduce in this section, List and Pivato's argument for the emergence of indeterminism loses its significance. This section is divided into two sub-sections. First, I define meta-levels in more detail and defend their inclusion within the multi-level modal theory by introducing the modal properties of a meta-level. Second, I revise the consequence argument by describing a meta-level version that is both valid and (I think) sufficient to undermine free will. At the end of this section, I hope to have convinced the reader that List must be committed to a hypothetical conception of the possibility of doing otherwise, and therefore that List's theory of free will is neither actualist nor libertarian.

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[13] For a thorough discussion of the 'levels' metaphor, see Carl Craver (2015). He argues that there are many applications of the levels metaphor. The notion of meta-levels is simply another instance of the 'levels' metaphor that I think is helpful for thinking about the ontological levels described by List.

4.1 Meta-level modality

So what is a meta-level? To start, consider those scientific disciplines that we might think of as a specific level of description (such as biology) that seem capable of being broken down into multiple distinct levels of scientific description (such as genetics, organic chemistry, and neurobiology). What I have in mind is a level that can be broken down into multiple levels –a meta-level is some level (such as biology) that consists of multiple levels itself.[14] The basic idea is that scientists often operate at some meta-level by considering how the modal properties at one level determine the modal properties at another level given both sets of level-specific laws and the laws of supervenience that connect those levels. An important question, then, is – what sort of theoretical virtue do meta-levels add to the multi-level modal theory discussed in the first section. I think the justification for thinking about meta-levels comes from the theoretical virtue of supervenience claims. It seems to me that the entire point of talking about supervenience is to acknowledge scientifically significant ways in which the processes described at one level stand in a modal relation to processes at another level. In my view, if we are going to develop a sophisticated multi-level modal theory, we must recognize that there are levels within levels – or, according to the formal jargon that I am developing, there are base-levels within meta-levels.

To demonstrate, consider a biological description of the history of a specific organism. At any given time, the state of an organism includes genetic, cellular, physiological, and neural arrangements. We could describe the organism solely at the genetic level, or we could describe

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[14] The term 'meta-level' is admittedly vague. I considered referring to meta-levels as 'levels of abstraction,' where the basic idea is that there is a different hierarchy of ontological levels at different levels of abstraction. So, for example, at one level of abstraction there may only be the following levels – physics, chemistry, biology, psychology, and so on; while at another level of abstraction, there may be a finer-grained hierarchy of levels – particle physics, atomic physics, atomic chemistry, biochemistry, cellular biology, and so on. The primary point is that a more coarse-grained system of levels would consist of 'meta-levels' (such as biology) that are constituted by the conjunction of base-levels (such as biochemistry, molecular biology, cellular biology, and so on).

the organism solely at the physiological level.[15] But we might want to describe the state of the organism at a more general level, which we may choose to refer to as the biological level. Such a description will not specify the state of the organism at a single level; rather, the state of the organism at the level of biology in general will consist of specifying the state of the organism at multiple levels. So when we specify the state of an organism at a specific level at a specific time, we assign the organism a single state at that level. But if we are operating at a meta-level, we will assign the organism a set of states that includes a single state for each base-level. To be clear, a meta-level can simply be understood as a conjunctive-level. Nomenclature aside, the basic idea is that scientists often operate at a 'level' that is better understood as a conjunction of multiple levels.[16]

So for example, we might specify the state of some human being at the physical level by assigning it the physical state P, and we might specify the state of that same human at the agential level by assigning it the agential state A. But if we are operating at some meta-level that includes only the agential and physical levels as base-levels, we would specify the state of the human by assigning it the pair of states $\{P, A\}$. In general, if we are operating at a meta-level that consists of n base-levels, then any specification of a system at that meta-level will be a set of

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[15] It may be argued that you cannot actually talk about an organism at the genetic level. This, I think, helps make my point – if you want to talk about the organism as a whole, you must talk about how certain high-level properties of the organism (such as its anatomy) supervene on low-level properties (such as its genetic make-up).

[16] For skeptics of the notion of a meta-level, I must emphasize that I am not claiming that biology is a meta-level and that genetics is a base-level. What I am suggesting is that there are certain scientific inquiries that must be conceptualized as operating at some sort of meta-level in which two or more base-levels are being considered. Similar to List, I am not providing a taxonomy of levels; rather, I am only providing a basic framework for thinking about levels. A more thorough analysis of the notion of a meta-level could certainly be provided, but this is beyond the scope of this paper. For my purposes, the most important point is that scientific inquiry often operates by thinking about a system as a whole and the level-specific laws and supervenience mappings that determine the structure of that system.

n base-level states. To provide a more formal representation of a meta-level, let's make the

modal operators described by List more explicit:

- $\Box\,(P)_{\,def}\ =\ \Box_{tw}(P\mid PL_w\ \&\ p_{tw})$

This states that, to say that the physical state *P* is physically necessary is equivalent to saying that

P is necessary at time *t* in world *w* conditionalized upon the physical laws of *w* (PL_w) and the

physical history of *w* at time *t*. This notation simply makes explicit what List packs into his

modal operators. Given this notation, I provide a formal definition of meta-level necessity:

- $\Box_M(P,\,A)_{\,def}\ =\ \Box_{tw}(P,\,A\mid PL_w\ \&\ AL_w\ \&\ p_{tw}\ \&\ h_{tw}\ \&\ SL_w)$

This states that, to say that the physical and agential '*P & A*' states are necessary at the meta-

level is equivalent to saying that *P* and *A* are necessary at *t* in *w* conditionalized upon the

physical and agential laws of *w*, the physical and agential histories of *w* at *t*, and the laws of

supervenience connecting each level in *w*. A corresponding definition can be provided for

possibility.

Since each meta-level is constituted by multiple levels, meta-level modal propositions are

derived from the laws of each base-level and the laws of supervenience connecting the base-

levels. For example, if we are operating at a meta-level that includes only the physical and

agential levels as base-levels, then the truncated history of some world *w* at that meta-level will

consist of the pair $\{a_t,\,p_t\}$ where a_t is the agential-level history of *w* and p_t is the physical history

of *w*. Therefore, modal propositions at this meta-level are determined by the number of pairs $\{a,$

$p\}$ that are nomologically consistent with $\{a_t,\,p_t\}$ according to both the agential and physical laws

of *w* and the laws of supervenience that connect the agential and physical levels.

To demonstrate the utility of the notion of a meta-level, I must introduce some rules of

modal inference at the meta-level. There is one modal inferences that I think is justified, and one

that is not. In general, if a future state is nomologically necessary at the base-level at which it is defined, then we can infer that the state is nomologically necessary at the meta-level that includes that base-level. So inferring meta-level necessity from the base-level is justified. But, if a future state is nomologically possible at the base-level, then we cannot infer that the state is nomologically possible at the meta-level. So inferring meta-level possibility or the lack of necessity from the base-level is not justified.

Let's start with the inference of necessity. If a state is necessary according to a specific law, then that state must be necessary according to that law in conjunction with any other set of laws that are consistent with that law. If a state is necessary according to some set of nomological information, then there is no additional information that could make that necessary state non-necessary. Therefore, necessity is *overdetermined* by level-specific laws – no amount of additional information that will change the modal fact that some state is necessary. But this is not true for possibility. A state may be possible according to a specific law even though it is impossible according to that same law in conjunction with other laws. This is because possibility and the negation of necessity are *underdetermined* by level-specific laws. A state may be possible according to some set of nomological information, even though that same state may be necessary according to additional information.

Think of this asymmetry between necessity and possibility in epistemic terms. If you believe that some state P is possible given your incomplete background knowledge K, while it is in fact impossible relative to a complete set of modally relevant information I (i.e., the laws and histories at the specific level in question). In this case, it is possible for K to be consistent with I. You may not know that P is actually impossible simply because of your epistemic limits. In other words, your background knowledge K does not contain all of the information I but that

information need not be inconsistent. Something may have been possible relative to an incomplete specification of the past or the laws of nature even though it is impossible relative to a complete specification of the past and those laws. In contrast, if you believe that *P* is necessary given *K*, while it is in fact not-necessary relative to *I*, then you may not consistently believe *K* is true upon learning *I*. In this case, your belief is mistaken due to your epistemic fallibility. In other words, *K* must be incorrect even if it is incomplete, since *K* must be inconsistent with *I*. If your theory predicts that something is necessary and it turns out to be non-necessary, then your theory must have been false in some way – it could not have been merely incomplete. This asymmetry between necessity and possibility should not be surprising insofar as necessity, by definition, has a stronger modal force than possibility.

   With this in mind, I introduce the following rules of modal inference between the meta-level and its base-levels. For the sake of simplicity, I will consider the meta-level that includes only the agential and physical levels as base-levels. Before I introduce the rules, I must introduce modal operators that are specific to the meta-level. Henceforth, the modal operators $\Box_M$ and $\Diamond_M$ will refer to the nomological necessity and possibility at the meta-level that includes only the agential and physical levels as base-levels. Additionally, any reference to the meta-level will be in reference to that meta-level that includes only the agential and physical levels. With this, we can introduce the following rules:

- $[\Box\, P \vdash \Box_M P]$ and $\sim[\Box_M P \vdash \Box\, P]$

- $\sim[\Diamond P \vdash \Diamond_M\, P]$ and $[\Diamond_M P \vdash \Diamond P]$

With these, you can derive:

- $\sim[\sim\Box P \vdash \sim\Box_M\, P]$ and $[\sim\Box_M P \vdash \sim\Box P]$

- $[\sim\Diamond P \vdash \sim\Diamond_M P]$ and $\sim[\sim\Diamond_M P \vdash \sim\Diamond P]$

Notice the asymmetry between necessity and its negation, and possibility and its negation. If a state is necessary at a base-level, then it is necessary at the meta-level – same thing for impossibility. But just because it's necessary at the meta-level does not imply that it is necessary at the base-level – again, same thing for impossibility. On the other hand, if a state is possible at the base-level, then it may or may not be possible at the meta-level – same thing for the lack of necessity. With that said, a state cannot be possible at the meta-level without being possible at the state's base-level – and again, same thing for the lack of necessity. So although there are no justifiable rules of inference from base-level possibility (or from the lack of necessity) to the meta-level, there are justifiable rules of inference from meta-level possibility (or the lack of necessity) to one of the base-levels.

To demonstrate, suppose that the world is physically deterministic. According to List and Pivato, the truth of physical determinism implies that all physically possible states are physically necessary. So, assuming physical determinism and the rules of meta-level modal inference defended above, we can infer that there is some future state P that is necessary at the meta-level M. We might also assume agential indeterminism, such that there are two states A^1 and A^2 that are both possible and non-necessary at the agential level. But given the above rules of inference, this is not sufficient to conclude that A^1 and A^2 are either possible or not-necessary at the meta-level. In fact, given the law of supervenience as articulated by List, there is a surjective mapping from the physical level onto the agential level. Therefore, there is a single agential state that is necessitated (as a matter supervenience) by each physical state. So if P is necessary at the meta-level and P is the subvenient base of A^1 but not A^2 (since only one higher-level state will supervene on a specific lower-level state), then A^1 must be necessary at the meta-level (while A^2 must be impossible).

At this point, I must emphasize that, without assuming the rules of inference introduced above, List and Pivato's argument for emergent indeterminism loses its significance. What makes this argument significant is the implicit assumption that there is at least some modal relations that must hold between higher and lower levels. Specifically, the argument assumes that a higher-level state is possible if and only if its history (at the higher-level) is realized by a physical history that is also possible. Remove this constraint and the argument for the consistency of higher-level indeterminism and lower-level determinism becomes trivial. The simple fact that List and Pivato consider multiple realization to be an essential ingredient in their argument demonstrates that they make this implicit assumption. Thus, the notion of a meta-level actually provides a foundation for the significance of their argument. In other words, introducing meta-levels into the multi-level modal theory does not undermine the argument for emergent indeterminism; rather, it makes the significance of that argument clear. To be precise, what's significant about the argument is that agential indeterminism is consistent with physical determinism despite the modal relations that must hold between those two levels at the meta-level.

Finally, I want to emphasize another important implication of my argument. A meta-level is deterministic if its lowest base-level is deterministic[17], while a meta-level is indeterministic if (and only if) its lowest base-level is indeterministic.[18] This is because the state of the system at the meta-level at any given time will be specified by the pair $\{P, A\}$. Assuming physical

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[17] See Appendix A. There, I provide an argument to demonstrate that determinism at the lowest base-level entails determinism at the meta-level.

[18] To be precise, it is possible for a meta-level to be deterministic even if all of its base-levels are indeterministic, but it is not possible for a meta-level to be indeterministic if it's lowest base-level is deterministic. Demonstrating the compatibility of meta-level determinism given indeterminism at each base-level is a complicated proof that is unnecessary for the purposes of this paper.

determinism, we can see that there is only one state *P* that is possible at any given time. And since there is only one state *A* that supervenes on *P*, there is only one pair {*P, A*} that is possible at the meta-level.

Before turning towards the consequence argument, recall List's two objections against cross-level modal reasoning. In the first, he points out that any cross-level modal inference must rely on the language of supervenience. But, he argues, the language of supervenience only allows us to assert propositions about the relations between states at different levels – supervenience does not allow us to assert modal propositions about states at a specific level. And second, cross-level modal propositions (e.g., the agential state *A* is physically necessary and the physical state *P* is agentially necessary) are not well-formed propositions. Since the domain of such modal operators is level-specific, such cross-level modal propositions are incoherent. However, cross-level modal inferences made at the *meta-level* avoid both of these objections. The first objection states that the language of supervenience cannot be used to assert modal propositions about specific states. But the language of the meta-level is not identical to the language of supervenience. Rather, modal propositions at the meta-level are merely conditionalized on the laws of supervenience. But meta-level propositions are also conditionalized on multiple sets of level-specific laws which makes the meta-level language capable of asserting modal propositions about specific states. And since the meta-level has its own modal operators, it can assert modal propositions about any of the possible states in its domain. Therefore, List's second objection, which states that level-specific modal operators cannot be used to assert modal propositions about states at other levels, does not apply to the meta-level modal operators. By stipulation, the domain of a meta-level modal operator includes all of the states in the domain of each of its base-

levels. So, the modal operators at the meta-level may be used to assert modal propositions about both agential and physical states.

4.2   A meta-level version of the consequence argument

Contra List, I argue there is yet another version of the consequence argument that is valid, sound, and relevant to free will. This version of the argument operates at the meta-level. To start, we must introduce a revised version of Rule Alpha designed to work at the meta-level:

- Revised Rule Alpha: $\Box P \vdash \sim\Diamond_M \sim P$[19]

Notice that this revised version of Rule Alpha simply follows from the first meta-level modal inference described in the previous section. Therefore, if my argument for those modal inferences is sound, then the revised version of Rule Alpha should be valid.

Before introducing my revision of the consequence argument, I want to first point out that many of the premises of the initial consequence argument are unnecessary given the modal semantics developed by List and Pivato. Since the modal propositions in the multi-level modal theory are nomological modal propositions that are determined by a measure over the number of possible futures given a specific truncated history and the natural laws, much of the original consequence argument is unnecessary within the modal framework developed by List and Pivato. Recall from the formal equivalences discussed above, to say that P is necessary is to say that P is nomologically necessary according to the laws of physics given the truncated physical history of a specific world. Therefore, the proposition '$\Box ((p_o \& L) \rightarrow P)$' is equivalent to the modal proposition '$\Box P$' since the truncated physical history p_0 and the physical laws L are

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[19] To be clear, whether or not $\sim\Diamond_M$ articulates a truth about what is not possible for agents to do is what is up for debate. I am arguing that meta-level modal propositions are capable of saying something about what agents can and cannot do. As I discuss below, one of List's possible recourses against my argument is to argue that meta-level modal propositions don't say anything relevant about agents.

presupposed within the modal operator '□.' In other words, the modal operators within the multi-level modal theory are, by definition, a measure over what is possible relative to the past and the laws of the specific level in question.[20]

So the multi-level modal theory actually makes the consequence argument much simpler. At the meta-level, we can reconstruct the argument as follows[21]:

- Revised Rule Alpha: $\Box\, p \vdash\ \sim\!\Diamond_{\text{M}} \sim\!p$

- Rule Beta: $\Box_{\text{M}}(p \rightarrow a),\ \Box_{\text{M}}p \vdash\ \Box_{\text{M}}a$

1. $\Box\, P$		Physical Determinism
2. $\sim\!\Diamond_{\text{M}} \sim\!P$		Revised Rule Alpha
3. $\sim\!\Diamond_{\text{M}} \sim (P \rightarrow A)$		Supervenience
4. $\sim\!\Diamond_{\text{M}} \sim\!A$		Rule Beta

Notice that the third premise is derived from supervenience. Recall that supervenience entails that each lower-level state maps onto a specific higher-level state. So the conditional in the third premise is necessary according to the laws of supervenience, and is therefore necessary at the meta-level since meta-level modal propositions are conditionalized on all of the base-level laws and the laws of supervenience. To be precise, it is necessary at the meta-level that each physical state

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[20] I assume List presents the consequence argument as it was originally formulated by van Inwagen in order to maintain consistency between the original argument and his objection (which is also why I have included List's formulation of the argument). But I think he may have been mistaken to do this. Given the modal semantics he and Pivato have developed, it's not clear what it even means to say that the laws of physics are nomologically necessary according to the laws of physics. Laws are not states of a system, so I'm not sure they are included within the domain of any of the modal operators within the multi-level modal theory. In any case, assuming such modal propositions about laws do have meaning, their meaning must be trivial. Similarly, modal propositions about the past must also be trivial. According to List and Pivato, the past is simply trivially necessary (in both deterministic and indeterministic worlds). The basic point is that the modal proposition '$\Box_t (P_t\ \&\ L)$' must be trivial insofar as the meaning of '$\Box_t P$' is 'P is necessary at t according to the laws of physics (i.e. L) and the truncated physical history up to time t (i.e. p_t).'

[21] Notice that Rule Beta has also been revised. This revision is not intended to replace the original Rule Beta since I believe they are both derived from the same general rule. The revision of Rule Beta depicted above is simply articulated in meta-level jargon.

implies a single agential state. So then, applying Rule Beta, we can conclude that any agential state that supervenes on a physical state that is necessary at the meta-level must also be necessary. Finally, if a state is necessary, then its negation is not possible. So according to the revised consequence argument, there is only one possible agential state at the meta-level assuming physical determinism. And if there is only one agential possibility, then an agent does not truly have the possibility of doing otherwise (if 'possibility' is understood to be meta-level possibility as I have described it).

There are two ways in which List could object to my argument. First, he might object to the concept of a meta-level. Although I have not defended this view in this paper, I do not think that such an objection would be sound. His framework for a system of levels is already questionable due to how rigidly his theory distinguishes between different levels. It seems to me that the only way to salvage his framework against such a worry is to introduce the notion of a meta-level. Moreover, as I argued above, the modal properties of the meta-level actually provide a background against which the argument for the emergence of indeterminism may seem significant.

Second, he might accept the notion of a meta-level but argue that a modal analysis of free will should be restricted to the agential level. I think that this is his best option for responding to my argument. This objection, however, must consist of an argument for the irrelevance of physics (or other deterministic lower levels) with respect to free will. Currently, he has not provided such an argument. And I think there are some reasons to be skeptical of the soundness of such an argument. In particular, the effects of our agency seem to be quite diverse. Our actions seem to have physical, biochemical, social, and many other sorts of consequences. It seems to me that we should want our multi-level modal theory to account for this sort of inter-level

causation. When an agent makes a decision, that decision not only has consequences describable at the agential level, there seem to also be consequences that are describable at the physical level. For example, consider an agent's decision to go on vacation. This decision has consequences concerning where in space and time the physical constituents of that agent's body will be. Given my understanding of List's view, it seems plausible to me that he would that the consequences of an agent's actions are only describable at an agential level. But to be quite honest, I'm not sure what it means for an agent's decisions to have agential consequences but not physical consequences. I'll say a bit more about inter- and intra-level causation in the next section. For now, I just want to point out that List may be able to avoid my objections by arguing that causation is level-specific. Although I am skeptical of this view, I will not consider its merits and demerits in this paper.

5   A DILEMMA FOR THE COMPATIBILIST-LIBERTARIAN

The gist of List's view on free will is to take all of the good from both compatibilism and libertarianism without taking any of the bad. If my argument so far has been sound, then compatibilist-libertarianism fails to deliver a robustly libertarian (i.e., non-hypothetical) conception of possibility of doing otherwise. Instead, despite his intentions, List must rely on a hypothetical conception of an agent's ability to do otherwise. As I stated in the introduction, my primary goal in this paper is to convince the reader that List has accomplished the opposite of his intended goal. Not only does List's theory fail to satisfy any libertarian requirements (and is therefore just compatibilist), I argue in this section that he has taken all of the bad from both theories without taking any of the good. Specifically, I argue that List's response to what I will refer to as the causal source objection against compatibilism fares worse than other (non-libertarian) varieties of compatibilism when considered in conjunction to what I will refer to as the randomness objection to libertarianism.

5.1   The causal source objection

Consider the causal source objection against compatibilism. In a nutshell, the causal source objection states that agents cannot be the causal source of their actions in a deterministic world. In other words, since all of an agent's actions are necessitated prior to their birth, an agent cannot be the difference that explains why one set of possibilities was actualized as opposed to another. Instead of the agent, the initial conditions of the universe seem to be the causal source of everything that happens.[22]

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[22] An example of such an argument is Derk Pereboom's argument for source incompatibilism – e.g., see Pereboom (2006). A similar argument is the manipulation argument, which attempts to demonstrate that there is no difference between a case in which an agent's behavior is determined by natural laws and a case in which an agent's behavior is determined by some omnipotent agent capable of manipulating an agent's behavior.

In response to objections of this kind, however, compatibilists have convincingly argued that this sort of argument relies on a conception of causal source that is profoundly inadequate. Most notably, if causality is understood according to a causal interventionist framework, then an agent may be rightfully identified as the causal source of their behavior if intervening on the states of that agent (such as their beliefs, desires, motivations, etc.) regularly produces changes in that person's behavior. In other words, for an agent to be the causal source of their action, they must be the difference that makes a difference. The problem with the causal source objection is that it implies that there are no local causal sources in a deterministic system – all causal sources trace back to the totality of the initial conditions. Such a conception of causality seems practically useless. In contrast, causal interventionist and difference-making accounts of causation tend to isolate some local variable that regularly makes the difference between whether or not some future event takes place. List has also defended a difference-making account of agential causation with Peter Menzies.[23] Citing the likely multiple realization of most agential states, they argue that an agential state is more likely to be the difference that makes a difference at the agential level than any disjunction of lower-level realizers. How multiple realization makes this work is not relevant for my purposes – what's important is simply that List's conception of agential causation relies on a difference-making account of causation in general. Put simply, an agent is the cause of some effect insofar as that agent (or some state of that agent) is the crucial difference that explains the occurrence of the effect in question.

To be clear, the causal source objection that I described above should not be conflated with the causal exclusion argument. The causal source objection need not rely on the distinction

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[23] Similar responses to what I am characterizing as causal source objections can be found in Deery and Nahmias (2017).

between physical and agential states, whereas the causal exclusion argument states that agential states cannot be understood as the cause insofar as their subvenient base, the physical level, supposedly overdetermines all causal relations. I do not wish to comment on the adequacy of the causal exclusion argument here. For this reason, I have introduced the causal source as a sort of argumentative caricature simply in order to highlight a shortcoming of compatibilist-libertarianism. But before demonstrating that shortcoming, I must discuss another argumentative caricature against the libertarian, which I refer to as the randomness objection. For now, it will suffice to say that List and many other compatibilists agree that some sort of difference-making account of causation is necessary to make sense of a compatibilist theory of free will.

5.2   The randomness objection

Perhaps the most general argumentative caricature posed against libertarianism is the randomness objection.[24] According to this objection, indeterminism cannot make any difference with respect to whether or not agents are free because it simply introduces a degree of randomness. Some compatibilists are willing to allow for free will in an indeterministic world, but they insist that free will is merely compatible with both determinism and at least some forms of indeterminism. There may be some degree of randomness to what we choose to do, but that randomness doesn't make us more free – in fact, randomness may make us less free. However, List, along with standard libertarians, cannot appeal to such a position in order to avoid the randomness objection. A true libertarian cannot be satisfied with the mere compatibility of free will and indeterminism; rather, they must require indeterminism. The fundamental challenge for any libertarian theory of free will is to explain why indeterminism is necessary for free will. List,

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[24] See Widerker and Schnall (2015) for a discussion of the randomness objection. Pereboom (2006) also discusses the problem of randomness for the libertarian, although he does not refer to as 'the randomness objection.'

for example, insists that agential indeterminism must be true in order to provide agents with alternative possibilities. But by introducing agential indeterminism, he has simply introduced a degree of randomness with respect to which agential possibilities are actualized.

And it is here that I hope the reader will begin to see the unraveling of compatibilist-libertarianism. Recall that List defends agential causation by arguing that agents (or agential states) may be understood as the causal source of some change in the world when they are (roughly speaking) the difference that makes a difference with respect to that change. This, however, is undermined by the truth of physical determinism in conjunction with agential indeterminism. Notice that the difference that truly makes a difference between two worlds with identical agential histories and distinct agential futures must be their unique physical histories. It's not a matter of whether or not the agential state or the disjunction of physical states is a better explanation, because there is simply no agential state that can explain the difference. By conjoining agential indeterminism with physical determinism, List seems to have made the prospect for a plausible conception of indeterministic agential causation even worse. As long as physical determinism is true, the causal source of which of two or more alternative agential possibilities is actualized seems to be something in the distinct physical histories that preceded the modal splitting at the agential level.

One plausible response is that causality is level-specific.[25] Given List's level-specific proclivities with respect to modality, it seems plausible that he might also endorse a level-specific conception of causality. This would allow him to appeal to a probabilistic account of

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[25] For a defense of the level-specificity of causality, see Craver and Bechtel (2007). They argue that, although there may be top-down causation, there are no top-down causes. Top-down causation may only occur by being "mechanistically mediated" by lower-level realizers; so, the lower-level realizers would be the cause rather than the higher-level states themselves.

difference-making in which agential causes need not deterministically necessitated their effect.

Rather, an agential state may be rightfully identified as the cause of some effect if that state

makes some probabilistic difference in whether or not the possible effect is actualized. Without a

level-specific conception of causation, however, any probabilistic differences that could be

identified at the higher level would make less of a probabilistic difference than their physical

realizers that deterministically necessitate the possible effect.

In contrast, if we assume both the physical and agential levels are indeterministic, then

higher-level states may make more of a probabilistic difference than their physical realizers. To

demonstrate, consider the following example, which is only designed to demonstrate the logical

possibility of higher-level difference-making assuming both physical and agential indeterminism.

We'll start with four possible physical states {*P1, P2, P3, P4, P4*} that are all equally probable

relative to the laws of physics – this would assign each state a probability of 0.2. Further, we'll

stipulate that there are two possible agential states {*A1, A2*} where (we'll assume) the probability

of *A1* is 0.8 and the probability of *A2* is 0.2. This is demonstrated below – where the darker line

leading to *A1* is supposed to indicate that *A1* is more probable than *A2*.
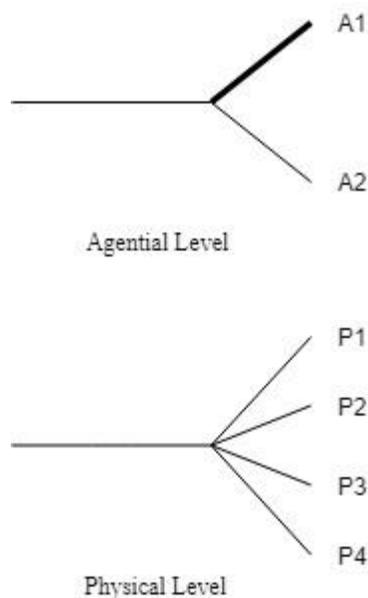
Figure 2. Levels

Finally, we'll assume that *A1* is multiply realized by *P1* and *P2*, while *A2* is multiply realized by *P3* and *P4.*
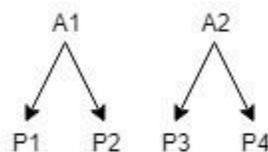

Figure 3. Multiple Realization

Taken in conjunction with one another, we can see that, at the meta-level, the probability of (*P1, A1*) and (*P2, A1*) is greater than the probability of (*P3, A2*) and (*P4, A2*) despite the fact that all of the physical states are equally probable when solely conditionalized on physical laws. In this case, the agential history makes more of a probabilistic difference than the physical history with respect to both *P1* and *P2*. To be clear, I am not arguing that this scenario is necessary if we assume both physical and agential indeterminism. Rather, I have only stipulated the parameters

of the scenario in order to demonstrate the logical possibility of agential difference-making given both physical and agential indeterminism. So if we assume (as List does) that determinism is true at the physical level while it is false at the agential level, then the difference-making account of agential causation seems to be in trouble unless we assume that causation is level-specific. In contrast, if we assume determinism is false at all levels, then we have an account that renders agential causation much more plausible.

In any case, even if causality should be understood as a solely level-specific phenomenon and the above argument is rendered meaningless (since it relies on a cross-level conception of causation), I think I have at least demonstrated that List's compatibilist-libertarian theory of free will must provide more answers to some theoretical questions concerning the relationship between agential indeterminism and agential causation. If I am right, List may need to abandon his attempt to reconcile free will with determinism at the physical level.

6   CONCLUSION

Assuming something like my meta-level revision of the multi-level modal theory is sound, List's theory of free will seems to be neither libertarian nor actualist. At best, he can avoid the causal source objection by employing a level-specific conception of causality. At worst, his theory renders agential causation incoherent according to a difference-making account of causation. In any case, if I have at least backed List into a corner in which he must insist on a level-specific conception of causality, then I have believe I have accomplished my primary goal, which is to place a heavier burden of proof upon List's shoulders. Furthermore, I'm in agreement with Elzein and Pernu that List should provide a more substantial argument for restricting the analysis of free will to the agential level. As I suggested earlier, he may accomplish this by either rejecting the notion of a meta-level or by insisting that only the agential level alone is capable of articulating modal propositions that are relevant to free will. I have attempted to argue that the former move would undermine the significance of the argument for the emergence of higher-level indeterminism, while the latter move seems to conflict with the seemingly plausible claim that our actions have non-agential causes. Finally, I have speculated that, if we assume both physical and agential indeterminism, we may be able to generate an account of agential causation that avoids the causal source objection.

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APPENDICES

Appendix A. Lower-level determinism entails meta-level determinism

Below is a formal argument to demonstrate that lower-level determinism entails meta-level determinism. All of the modal operators are assumed to be relative to the same point in time t, and in the same world w. For the sake of simplicity, I will only consider two physical histories and two agential histories. But if I am right, this argument would be valid for any number of physical and agential histories. The primary point is that, if a physical history is necessary at the physical level (as a consequence of assuming physical determinism), then the agential history that supervenes on that physical history is also necessary at the meta-level.[26] Two agential histories are assumed only for the purpose of assuming agential indeterminism, which requires at least two histories that are both possible and mutually exclusive.

1. $\Box p^1$

    - This premise assumes that the world in question is physically deterministic. There is a physical history of this world that is necessary at time t.

    - It is important to recognize that this premise entails the following: $\Box \sim (\sim p^1)$. Since histories are complete descriptions of a possible world, any physical history $p^n \neq p^1$ is impossible.

2. $(\blacklozenge a^1 \ \& \sim \blacksquare a^1) \ \& \ (\blacklozenge a^2 \ \& \sim \blacksquare a^2) \ \& \ (a^1 \neq a^2)$

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[26] It may be important to remind the reader that 'histories' are technical terms within List's theory. Histories are complete specifications of an entire world from the beginning of that world to the end of that world. So if we are talking about the modal properties of a history at a specific time within that world, then it makes sense to talk about the possibility (or impossibility) of histories.

- This premise assumes that the world in question is agentially indeterministic. There are two distinct agential histories that are possible, which implies that neither is necessary.

- It is important to recognize that the following argument will work for any number of possible agential histories. I am only considering two for the sake of simplicity.

3. $(\Box_M p^1 \rightarrow \Box_M a^1) \,\&\, (\Box_M p^2 \rightarrow \Box_M a^2)$

- This premise assumes that a^1 supervenes on p^1, and that a^2 supervenes on p^2.

- It is important to recognize that this assumption is consistent with multiple realization. One could stipulate that there are some other physical histories that multiply realize either a^1 or a^2. Regardless of how many physical histories are stipulated, the fact remains that only one of those histories (namely, p^1) is possible (see 1b).

4. $\Box_M p^1$

- This premise is derived from premise 1 according to the first meta-level rule of inference, which states that base-level necessity is sufficient to infer meta-level necessity.

5. Therefore, $\Box_M a^1$

- The conclusion is derived from premises 4 and 5.

This argument demonstrates that, even if there are multiple possible higher-level futures at the higher-level, there is only one possible higher-level future (assuming lower-level determinism) at the meta-level.