**Lemos on the Physical Indeterminism Luck Objection**

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*Abstract*: I recently argued that reductive physicalist versions of libertarian free will face a physical indeterminism luck objection. John Lemos claims that one potential advocate of reductive physicalist libertarianism, Robert Kane, avoids this physical indeterminism luck objection. I here show how the problem remains.

*Keywords*: Libertarian Free Will; Luck; Robert Kane; Reductionism; Compatibilism; Manipulation

I recently argued that reductive physicalist versions of libertarian free will face a physical indeterminism luck objection (blinded-1). John Lemos claims that one potential advocate of reductive libertarianism, Robert Kane, avoids this physical indeterminism luck objection (Lemos, 2022). This is done by adopting certain compatibilist principles, which not only overcomes the objection, but also addresses the related active control problem and quausation problem I raised. I here show that the issues remain, and I do so in five parts. First, I outline the physical indeterminism luck objection (§1) and the reply given by Lemos (§2). I then argue that the compatibilist standards Lemos suggests do not overcome the objection (§3), indeed evaluation of a leading argument against compatibilism, namely, the manipulation argument, provides supplemental resources to buttress both the active control problem (§4) and the quausation problem (§5).

**1. The Physical Indeterminism Luck Objection**

Advocates of libertarian free will typically espouse *Agential Indeterminism*, according to which agential causes *A*, such as an agent’s character, intentions, efforts, or reasons, cause some effect *E* to occur or not. Shanice is deliberating about whether to take an exciting new job in a distant city or stay where her family lives. After much consideration, she decides to take the new job, though she almost chose to stay in her home city. This is a case of agential indeterminism, where her agential states *A*, such as her reasons and intentions to climb the corporate ladder, caused her decision to move *E*, though her countervailing reasons favouring staying home almost caused her to turn down the job.

In a recent paper (blinded-1), I leveled the *Physical Indeterminism Luck Objection* at certain models of libertarian free will that uphold Agential Indeterminism. The problem afflicts those models of libertarian free will that also grant *Physical Indeterminism*, or, that *E* is actually completely caused by indeterministic physical causes *P*. Here is how the objection unfolds:

(1) *Physical Indeterminism*: Physical cause *P* indeterministically causes *E* to occur.

(2) *No-Control Over Physical Indeterminism*: Agents have no control over the physical cause *P* that indeterministically causes *E* to occur.

(3) *Transitivity of No-Control*: Agents that do not have control over the cause *P* of *E* do not have control over *E*.

(4) *No-Control Condition on Luck*: If an agent cannot control whether event *E* occurs, then *E* occurring is a matter of luck for the agent.

(5) *Luck Objection to Free Will*: If *E* occurring is a matter of luck for the agent, then the agent does not freely cause *E* to occur.

(6) *Luck Objection to Moral Responsibility*: If *E* occurring is a matter of luck for the agent, then the agent is not morally responsible for *E* occurring.

The charge is that action *E*, although agents have reasons *A* favouring *E*, is actually completely caused by indeterministic physical events *P* (from (1)) which the agent has no control over (from (2)). Since the agent has no control over the cause *P* of *E*, the agent has no control over *E* (from (3)), so whether *E* happens to occur is lucky (from (4)), hence the agent does not freely cause *E* to occur (from (5)), and is not morally responsible for whether *E* happens to occur (from (6)). To return to the example, little does Shanice know that her decision to take the job is actually completely caused by a swarm of neural processes occurring in her brain, from quantum states to stochastic neural processes occurring in axon terminals to the cross-firing neural assemblies in her brain. She has no control over how these physical processes play out, so she has no control over whether she ends up moving to a new city or not. That she ends up moving rather than staying is a matter of the luck of how these physical processes play out, which calls into question her free will and responsibility for moving. Philosophers have raised similar worries before, here are some examples:

If causation by actions did reduce in this way to causation by such things as neurological events, it would seem as though we would have to accept that actions must themselves be neurological events … But in that case, how could an action manage to be a settling by the agent, at the time of action, of such matters as what she will do, how and when she will do it, etc.? Must not those matters have been already settled by the prior neurological causes? (Steward, 2012, 205-206).

… whatever links exist between our brain and our selves, decisions that are made solely as a result of purely physical or neurological features of our brain do not count as free decisions … The agent is totally removed from the process—she does not control the emergence of [some decision] *P*\* or its subvening neurological state. Insofar as all the causal factors are neurological, even if the sum of those factors does not add up to a sufficient condition, the agent is missing from the story (Berofsky, 2012, 128-129; cp. Pereboom, 2001, 71; Bernstein, 1995, 154; Double, 2020, 300-301; Harris, 2012, 28; O’Connor, 2014, 29; Bailey and Rasmussen, 2020, 204-206; Capes, 2010, 131-133; 71-72; Turner, 2009, 570ff; Merricks 2001, 156-158; Dupre, 1996, 389; Cover and Hawthorne, 1996).

After raising this physical indeterminism luck objection, I considered the models of three contemporary advocates of libertarian free will, namely, Mark Balaguer, Christopher Franklin and Robert Kane. They each gesture towards, to varying degrees and manners, the following reductive physicalist libertarian solution:

*Agential/Physical Identity Theory*: Agential cause *A* is identical with the physical cause *P* of *E*.

Agential causes *A* are identical with the indeterministic physical causes *P* of *E*, so *A* is the cause of *E*, so *A* at least possesses causal control over *E*, falsifying premise (3) above. Shanice *does* have causal control over her decision to move away, since Shanice’s reasons and motivations *A* are identical with those physical processes *P* that cause her to move away, so her moving away is not lucky, so she is free and responsible.

 I leveled two objections at this reductive solution. First, the active control problem, which can be outlined via the following definitions:

*Passive Control*: *A* has passive controlover *E* if *A* is the cause of *E*.

*Active Control*: *A* has active control over *E* if *A* is the cause of *E*, and *A* has control over whether *A* causes *E*.

The reductive libertarian solution delivers passive control in virtue of the fact that *A*, as the physical cause *P*, causes *E*. But it cannot deliver active control, since the agent has no control over whether *A* causes *E* or not, rather whether *A* causes *E* or not is completely caused by physical processes happening in the agent’s brain that the agent does not control. I conclude that active control is a necessary condition for free will and responsibility, so reductive libertarianism delivers neither free will nor responsibility.

The reductive solution also faces a quausation problem, according to which *A* is only a cause of *E* because *A* is identical with *P* and *P* is the cause of *E*. In other words, *A* in virtue of being *P* causes *E*, or, *A* in virtue of its physical properties causes *E*. *A* is not the cause of *E* because *A* makes its own distinct causal contribution to *E*, or, *A* in virtue of its solely agential properties does not cause *E*.

**2. Lemos’ Reply**

John Lemos (2022) argues that at least one of the possible advocates of reductive libertarianism, namely, Robert Kane, can overcome these two problems. According to Kane’s influential model, Shanice has reasons favouring both moving and staying put, and makes efforts to both move and stay in her hometown. In making her effort to move she strives to overcome her temptation to play it safe and stay home, while in making her effort to stay home she strives to overcome her temptation to climb the corporate ladder at all costs. It is undetermined which of these dual (indeed, dueling) efforts will win, but Shanice ultimately decides to move. Hence Shanice succeeds in her reasons-based effort to move, despite the possibility she would stay put. Kane describes the physical processes underlying this agential processing as follows:

The uncertainty and inner tension we feel at such soul-searching moments of self-formation would thereby be reflected in some indeterminacy of our neural processes themselves … I thus postulate, in such cases, that multiple goal-directed cognitive processes (volitional streams, as I call them) would be involved in the brain, corresponding to these efforts, each of them with a different goal corresponding to the different choices that might be made—in short, a form of parallel processing in the free decision-making brain. One of these neural processes or volitional streams would have as its goal the making of one of the competing choices (say, a moral choice), realized by reaching a certain activation threshold … The competing processes or volitional streams would have different inputs, e.g., moral motives … if either cognitive process succeeds in reaching its goal (the particular choice aimed at) despite the indeterminacy involved, the resulting choice would be brought about by the agent’s effort or striving to bring about that choice for those motives. This would be so because the process itself (the volitional stream) was the neural realizer of this effort and it succeeded in reaching its goal, despite the indeterminism (Kane, 2019, 148-149).

Shanice’s effort to move corresponds with, and is realized by, some neural process *P*1, which is called a volitional stream, which is a goal-directed cognitive process aimed at the goal of moving away. Shanice’s effort to stay in her hometown corresponds with some other neural process *P*2, which is a different volitional stream aimed at the goal of staying put. The neural turbulence resulting from this parallel processing opens a window for indeterministic brain processing to have influence as well, rendering it indeterminate what will occur. Finally, the neural process *P*1, despite the cross-firing and indeterminate neural interference, causes a certain activation threshold to be reached, realizing Shanice’s decision to move away.

 Kane thinks this process delivers two important types of control. First, since the agent’s efforts are realized by a volitional stream aimed at a goal, the agent has teleological guidance control (TGC) over the outcome, meaning that the agent acts for reasons (since the inputs into the volitional stream are reasons) and on purpose (since the volitional stream is aiming at her goal) (Kane, 2019, 157). This type of control is consistent with compatibilist free will, as the volitional stream aims in only one direction, so it can be true that the volitional stream deterministically leads to the goal. Kane goes so far as to call TGC by the name of “compatibilist guidance control” (Kane, 2019, 157). Second, and this is key for establishing the free will that libertarians want, agents possess plural voluntary control (PVC) as well. Since dual volitional streams are operating within the agent, and it is undetermined which stream will overcome the countervailing neural noise, agents might succeed in making either choice.

Given this backdrop, Lemos says Kane has the conceptual resources to overcome both the active control problem and the quausation problem. With respect to the active control problem, Lemos thinks Kane secures passive control. Lemos cites the following passage from Kane: “... from a merely physical point of view every process in the brain is simply a happening yet some of those physical happenings are mental actions the agents are performing (such as concentrating, attending, or choosing) …” (Kane, 1996, 235). In this passage Kane appears to identify agential causes with physical causes, thereby establishing that agent’s cause actions by virtue of agent’s being identical with physical causes of action (Lemos, 2022, 12).

Despite Kane establishing passive control, Lemos thinks that “passive control is really no control at all” (Lemos, 2022, 14). It is possible, after all, for passive control to be satisfied even when agents are not free. Kleptomaniacs and drug addicts have passive control over their behaviour, as their desires cause their behaviours, though they are not really in control of themselves. Hence, Lemos adds the following additional definition of control:

*Compatibilist Control*: *A* has compatibilist control over *E* if *A* causes *E*, and *A* satisfies additional compatibilist standards for free will.

Compatibilist control includes passive control (i.e., that *A* causes *E*), but adds all the standard types of control that compatibilists endorse, such that: “if in making these efforts the agent is not being threatened, subject to coercion or external neural controllers, she wants to be moved by her desires to make the efforts, she is reasons responsive in making the efforts, etc., then the agent controls the making of the efforts” (Lemos, 2022, 9). Following McKenna, an agent who satisfies all these additional compatibilist conditions of control has a “Compatibilist-friendly Agential Structure (CAS)” (McKenna, 2008, 142).

Lemos introduces compatibilist control because Kane accepts it as a legitimate form of agential control. As discussed, teleological guidance control is a compatibilist sort of control. Though Kane and Lemos ultimately augment compatibilist control with additional libertarian elements, compatibilist control is a baseline version of agential control that is sufficient for establishing free will and responsibility:

Kane has said that as long as one has compatibilist style control over these efforts that will suffice. That is, as long as in making the efforts of will one meets a plausible set of compatibilist criteria of free agency, then one will have control over these efforts … Such compatibilist standards allow that what one does, such as making an effort, may have a complete physical cause. (Lemos, 2022, 9).[[1]](#footnote-1)

Lemos notes that the benefit of appealing to compatibilist controlis that it is consistent with the naturalistic sentiment that *E* has a complete physical cause *P*. That is, even if an action *E* is determined by physical processes from the remote past, an agent can have control over his action *E*, so long as the action is caused in a manner consistent with the standards of compatibilist control.

 After establishing compatibilist control as a sufficient form of control, Lemos interprets active control as akin to Derk Pereboom’s requirement that agents must settle which of several possible options is chosen. But Lemos thinks agents *do* settle which option is chosen, given that agents possess compatibilist control over both efforts, one of which prevails:

We might wonder precisely why the agent won’t control or settle which option is ultimately chosen. The mere fact that his efforts are identified with higher-level neural processes that are completely caused by other physical processes doesn’t explain why that agent lacks control over the choice. This is because they are still efforts over which he has compatibilist control and compatibilist control is consistent with there being complete physical causes of the efforts (Lemos, 2022, 11).

Lemos explains how compatibilist control is sufficient for genuine agential control by means of an example. Tom is blown by the wind into another man, causing harm to the man. Tom did not desire to harm the man, nor did he form the intention to harm the man. Rather, he was controlled by external forces, so he lacks compatibilist control, so Tom is not free or responsible. Jerry desires to harm the man, and forms the intention to harm the man, so bumps into the man causing harm. Since Jerry has a compatibilist-friendly agential structure, he has compatibilist control, so is free and responsible. As Lemos concludes, “Jerry has a kind of control and responsibility for his action that Tom lacks” (Lemos, 2022, 15).[[2]](#footnote-2)

Lemos solves the quausation problem by arguing that the identity between an agent’s efforts of will and the causally efficacious neural process allows both an agential explanation and a neural explanation to be truly stated of the same causal relation. As Lemos explains: “given that the indeterministic cause of an SFA is at once correctly identified as both a neurophysiological process and an effort of will, an adequate causal explanation of the choice can be made in either physicalistic terms or folk psychological terms” (Lemos, 2022, 17). He notes that Kane agrees that agential descriptions truly describe the causal process as well, so these agential descriptions cannot “be lopped off the top of one’s worldview, leaving only physio-chemical description of the brain” (Kane, 1996, 147).[[3]](#footnote-3)

**3. Compatibilist Control**

In this section I not only show that compatibilist control is insufficient for free will and responsibility, but I highlight key principles from the compatibilism debate that will later bolster the case that reductive libertarianism does not deliver free will or responsibility either.

The attempt to solve the physical indeterminism luck objection by appealing to compatibilist control is surprising. After all, advocates of libertarian free will are often drawn to libertarian free will precisely because they already think that compatibilist control fails to deliver enough agential control. Marcus Schlosser explains, “traditional libertarians have always argued that compatibilism is objectionable not only because it does not secure metaphysically open alternatives, but also because it does not endow agents with sufficient control” (Schlosser, 2014, 379; cp. Clarke, 2003, 220; Pereboom, 2001, 44; Jacobs and O’Connor, 2013, 179). Libertarians often think that compatibilist control fails for exactly similar reasons described in the physical indeterminism luck objection. Namely, since agents are determined by physical forces beyond their control in the remote past, they cannot be free. In other words, compatibilists face a *luck objection from before* (i.e., problematic luck arises because agents do not control the deterministic physical events *P* occurring in the remote past that actually cause *E*), where reductive libertarians face a *luck objection from below* (i.e., problematic luck arises because agents do not control the indeterministic physical events *P* occurring in their brains that actually cause *E*) (cp. Markosian, 2012, 392-393; Mele, 2006, 77; Pereboom, 2001, 110-117; Clarke, 1996, 27; Smilansky, 2001, 75; Levy, 2011, 85). Since compatibilist control faces the same type of problem that reductive libertarianism faces, it is of little profit to appeal to compatibilist control to save reductive libertarianism now. The luck problem simply runs much deeper than the appeal to compatibilist control goes.

To further bolster the case against compatibilist control, I shall outline one relevant objection to compatibilism, the so-called manipulation argument (Pereboom, 2001, 110-117; Mele, 2006, 184-196; Todd, 2011). On Derk Pereboom’s influential version, Professor Plum kills Ms. White for personal advantage. Plum satisfies compatibilist control (he wishes to have the desire to kill White, he is reasons responsive, he is not coerced by a co-worker, etc.). Little does Plum know that neuroscientists are manipulating his brain into reasoning egoistically, which is the reasoning Plum uses to choose to murder White. Is Plum free and responsible for the murder? Pereboom’s answer: “Intuitively, he is not morally responsible because he is determined by the neuroscientists’ activities, which are beyond his control” (Pereboom, 2001, 113). Pereboom then argues there is no substantial difference between this manipulation case and the deterministic case where Plum continues to not be morally responsible because “his action results from a deterministic causal process that traces back to factors beyond his control” (Pereboom, 2001, 116). In both the manipulation case and the determinism case, Plum has passive control (Plum’s reasons/intentions cause him to murder White) and compatibilist control (Plum wanted to act on these reasons/intentions, which were reasons responsive and uncoerced, etc.), but free will still fails. Why? Pereboom is clear: forces beyond the agent’s control cause Plum to kill White, so Plum is not responsible.

Kane agrees that manipulation arguments pose problems for compatibilism. Kane imagines B. F. Skinner’s fictitious world of Walden Two, where behavioural engineers condition the inhabitants to want certain things, say, to be a farmer, which they then happily act on. Since these inhabitants satisfy the conditions of compatibilist control, they are free and responsible on compatibilism. Kane complains, however:

… most people who look at Walden Two would say—and say rightly, in my opinion—that its citizens lack free will in a deeper sense than being able to do what they want and will what they want. In this deeper sense, their wills are not “their own” because they are not the original creators of their own ends or purposes. Their ends or purposes are created by their conditioners or controllers” (Kane, 1996, 65).

Although the farmer’s reasons/intentions cause his farming lifestyle in a compatibilist friendly way, his reasons/intentions are controlled by behavioural engineers, which he has no control over, so the farmer is not free or responsible (Kane, 1996, 70-71). The lesson is once again: free will fails because forces beyond the agent’s control cause the agent to act.

Some claim that manipulation arguments pose problems for libertarianism as well (Mele, 2005, 75-76; Cyr, 2020), including, most relevantly, Kane’s model (Pereboom, 2001, 52-53; Dennett, 2003, 132; King, 2013, 71). We can replace the manipulator’s deterministic influence—say, manipulating some citizen to be a farmer—with a manipulator’s indeterministic influence—say, while the citizen is deliberating about what profession to take up, the manipulator implants an indeterministic dial into the farmer’s head, such that when the farmer is deliberating about what profession to take up, the dial activates and indeterministically selects the farming profession. The citizen is not free in this case. But now imagine the normal case: instead of the manipulator’s implant indeterministically causing the choice, a naturally occurring set of indeterministic events in the citizen’s brain selects the farming profession. In these cases, “it is yet implausible that indeterminacy … provides for moral responsibility, and this is intuitively because she lacks the control over her decision … she is not the source of her decision” (Pereboom, 2001, 53). The central intuition is the same: it does not matter whether the agent is controlled by neural manipulators, behavioural engineers, deterministic physical processes in the remote past, or indeterministic physical processes in the agent’s brain, for so long as the agent’s actions are caused by factors beyond his control, the agent is not free.

Lemos replies to the manipulation argument against Kane by emphasizing that a manipulating device that takes the place of quantum indeterminacy in the brain would not threaten free will: “in the [manipulated case] it is the position the dial lands on which indeterministically causes the choice, but in [normal case] it is one of her efforts which indeterministically causes the choice. This is a crucial difference, for in the latter case it is her own effort which indeterministically causes the choice and this is what gives her agency” (Lemos, 2020, 618; cp. Lemos, 2017, 242). Even if a manipulating device replaces the quantum indeterminacy, the agent’s efforts still cause the choice in the face of the neural or implanted indeterminacy, so the agent is free.

But the manipulation problem can easily be reconstituted by adjusting the location of the manipulation. Two competing neuroscientists are vying for control of Plum. One prods the region of Plum’s brain corresponding to egoistic reasoning with electrodes, so Plum tries to kill White. The other neuroscientist implants electronic devices in the region of Plum’s brain corresponding to altruistic behaviour, so Plum tries not to kill White. These competing efforts open a window for indeterministic processes in Plum’s brain to influence the process as well. In the end, Plum’s effort to kill White overcomes his temptation not to, though Plum’s effort to be moral almost succeeds instead. Plum has a Kane-friendly agential structure, though Plum is not free. Why? For the same old reason: his deliberations and efforts are caused by factors beyond his control, namely, the manipulators. We can now replace the manipulators with physical processes: differing physical processes in Plum’s brain, which Plum has no control over, give rise to his effort to kill White and his effort to be moral. The electric signals of these neural assemblies compete with and inhibit one another, stirring up quantum indeterminacy in the brain as well, until some activation threshold is reached, realizing Plum’s decision to kill White. Plum has no control over these neural assemblies, or the quantum indeterminacy, or the way in which these processes compete or resolve, so Plum’s decision to kill White is caused by forces beyond his control, so Plum is not free.

Lemos can deploy what McKenna calls a soft-line reply (McKenna, 2008, 142) here. That is, he can grant that Plum is not free in this manipulation case, but argue that a substantial difference exists between being controlled by manipulators and being controlled by brain processes, so Plum is free in the physical indeterminism case. McKenna discourages this soft-line reply, as he suspects that the imagined manipulation can be suitably amended until no substantial difference between the two cases finally remains. Indeed, since the damaging feature of manipulation arguments is that the agent lacks control over the ultimate source of the action, and this feature remains constant between the two cases, McKenna is correct that a soft-line reply can only “temporarily forestall the inevitable” (McKenna, 2008, 144).

Lemos can instead make what McKenna calls a hard-line reply (McKenna, 2008, 142). That is, he can argue that there is no substantial difference between manipulation cases and physical indeterminism cases, but Plum is free in the physical indeterminism case, so Plum remains free in the manipulation case. McKenna encourages this hard-line reply, though compatibilists grant that admitting that manipulated agents are free amounts to revealing “compatibilism’s dirty little secret” (Fischer, 2000, 390), and amounts to “taking it on the chin” (McKenna, 2014, 477). The proper response to hard-line replies is to hoist this compatibilist response up onto the town gallows, so bystanders can witness these stark implications and turn their heads away. Kane, for his own part, agrees that it is an unpalatable pill to swallow: “this is a hard line indeed, and one that I think it is also hard to accept” (Kane, 1996, 67).

**4. Active Control**

The result of the last section is that compatibilist control does not salvage Kane’s model from the physical indeterminism luck objection. On the contrary, investigating the compatibilist landscape shows that compatibilist control is in dire straits itself, and for the same reasons undergirding the physical indeterminism luck objection. Namely, it is possible to have a compatibilist-friendly agential structure but nevertheless be caused to act by forces beyond the agent’s control, either a manipulative neuroscientist, a behaviour engineer, or deterministic physical processes in the remote past. This is the same problem infecting reductive libertarianism: it is possible to have a Kane-friendly agential structure but nevertheless be caused to act by forces beyond the agent’s control, namely indeterministic physical processes in remote regions of the brain. Here are some expressions of this concern:

And it does not help, I think, with the basic difficulty, to insist that a movement’s being ‘up to me’ is a matter of its being caused by some appropriate mental state or collection of states, such as a desire or an intention or cluster of such things, something that, it is then supposed, must have a neural realization in the brain. For if desires and intentions are just names for certain neural states, the problem remains that it seems to be those neural states, not me, that are calling the shots. Given that I am in those states, what I will do, it would seem, is settled by them. It is not settled by me (Steward, 2012, 228).

And even if such a theory should consider there to be a self-conscious subsystem in the brain that could be identified as the agent’s self, she would nonetheless be just a passive observer, deluded and conceited, who thinks she’s in charge but has actually no real power over her decisions and actions, whether they’re necessitated or not by past events (Rigato, 2015, 110).

… whether the laws of physics are deterministic or fundamentally statistical, events with microphysical constitutions governed by these laws are not sufficiently within our control. If everything is wholly constituted of microphysical entities governed by either sort of law, no room is left for agent-caused free decisions (Pereboom, 2001, 72).

If *A* causes *E*, but this agential process is completely caused by nothing but physical processes in the brain that the agent has no control over, the agent lacks the requisite active control, so is not free.

Interestingly, both Kane and Lemos object to Mark Balaguer’s model for similar reasons. Balaguer takes decisions to be identical with quantum processes in the brain, so Balaguer grants that when decisions settle which course to take it is actually indeterministic neural processes that settle which course to take. Kane objects that, “even if these neural coin tosses are internal to the torn decisions, the agent does not have control over how the neural coin tosses come out … and if how these coin tosses come out ‘settles’ which option is chosen, the agent would not have control over that either” (Kane, 2014, 54-55). Lemos agrees that for Balaguer, free acts are “undetermined consequences of quantum level phenomena in the neurons of the brain over which there is no agential control and, thus, no freedom … there is nothing in Balaguer’s view which explains why an undetermined choice isn’t just something that happens or transpires within her as opposed to something which she does” (Lemos, 2018, 53-54). In other words, since physical processes *P* (in this case quantum processes *P*) completely cause *E*, and we have no control over *P*, we have no control over *E*, even if our agential states *A* are identical with those efficacious quantum states that we lack control over.

Kane and Lemos think that by increasing the complexity of the agential machinery, this problem facing Balaguer can be solved—since the agent makes an effort to act based on reasons, and successfully acts despite the uncertainty arising from the countervailing temptation not to act, free will is established. But the same problem remains. Namely, this effort is a higher-level physical process which the agent has no control over. The reasons leading to the effort are physical processes which the agent has no control over as well. The countervailing effort of will is a different higher-level uncontrolled physical process. The indeterminacy that arises from the competition amongst the neural assemblies are physical processes which the agent has no control over. All these agential states (and any other agential state or agential architecture Lemos proposes as relevant) are physical states that the agent has no control over, and it is these physical states that completely cause what actions ensue. Since these agential processes are caused by physical processes that the agent cannot control, we lose free will. Indeed, Balaguer even turns this problem back on Kane as well (Balaguer, 2014b, 91).

 Lemos protests: but the uncontrolled physical causes of the action are identical with the agent’s efforts of will, and actions caused by an agent’s efforts of will are free, regardless of the fact that the action is completely caused by uncontrolled physical processes. But the identity is a double-edged sword that cuts both ways, for the opposite is also true. Namely, the agent’s efforts of will are actually just uncontrolled physical causes, and actions completely caused by uncontrolled physical causes are not free, regardless of the fact that the action is caused by an effort of will. As it turns out, the reductive approach is not *the solution*, it is *the problem*.[[4]](#footnote-4) Identifying the agent with physical processes that the agent has no control over does not bestow control onto the agent, rather it locks into place the fact that the agent is literally identical to something the agent has no control over—the agent literally has no control over themselves. To emphasize this central point, notice that reductive libertarians must accept the truth of the following principle:

*Complete Physical Control*: The effect *E* is completely caused by physical causes *P*, and physical causes *P* are events that the agent has no control over, so the effect *E* is completely caused by physical causes *P* that the agent has no control over.

Lemos acknowledges that reductive libertarians accept complete physical control because they take *A* to be nothing but *P*, which guarantees that there are no distinct agential causes contributing to whether *E* occurs, leaving it true that there are only physical processes *P* that completely cause *E*.

Free will, however, requires the falsity of complete physical control, or so I argue. I think this intuition is obvious: of course, if our actions are the result of nothing but the physical processing occurring in our brains that we have no control over, those actions are not free. I also think that both Kane and Lemos apprehend glimmers of this intuition, as they criticize Balaguer’s model for similar reasons. That is, they agree that decisions as identical with quantum states are not free because it is the uncontrolled quantum processing that ultimately settles the case. I also supplied a remote-to-local argument in support of this intuition in the original paper (blinded-1, 165ff): agents lack control over, and free will over, microphysical processes *P* in remote regions of space, and when these same types of physical processes, obeying the same physical laws and bestowing efficacy in virtue of the same physical properties, occur in brains, agents still lack control over, and free will over, these processes. I bolstered this case with the manipulation argument in the prior section: as agent’s who deliberate and decide under the influence of controlling manipulators lack free will, so agents who deliberate and decide under the influence of nothing but uncontrolled physical processes lack free will. In order to further motivate this intuition, consider the following drastic case:

*Psychic Vacuumizer*: The goddess Diana goes shopping at the Shoppe of Metaphysical Marvels. She buys a Psychic Vacuumizer, an expensive gadget that sucks all the agential properties out of the brain of anyone she points the device at, leaving only the physical processing behind. While looking for someone to try the device on, Diana sees Jerry, who is angrily marching towards Butch with plans to strike him! Diana quickly points the device at Jerry. Diana expects Jerry’s angry march towards Butch to stop, given the zombification of his reasons and efforts to strike Butch. To Diana’s surprise, Jerry continues his angry march and strikes Butch. Diana bangs the device a few times, trying to get it to start working. Little does Diana know, the device did work perfectly, it did excise Jerry’s reasons and efforts to strike Butch. But it left behind the neural assembly which, despite the other remaining cross-firing and indeterminate neural activity, still caused an activation threshold to be reached, causing the strike.[[5]](#footnote-5)

This thought experiment imagines the case where agential properties (i.e., efforts of will, reasons, decisions, etc.) are removed, though the agent’s physical processing is untouched. The question is: does zombified-Jerry act any differently than normal-Jerry? For those who accept complete physical control, the answer is no. Jerry’s strike is completely caused by physical processes that he has no control over, and these physical processes remain in tact during the influence of the psychic vacuum, so zombified-Jerry still strikes Butch. The fact that these physical processes are also efforts of will in the normal-Jerry case does not change anything about how normal-Jerry behaves. This is a troubling consequence of reductive libertarianism; I do not see how the seeds of free will can grow in this parched metaphysic. Some will disagree, continuing to think Jerry is free, despite the fact that removing his entire agential structure leads to exactly the same behaviour. This response is similar to the hard-line reply discussed above, as the reductionist just grants the counterintuitive consequence of his position. The reply, therefore, should be the same: it is enough that reductive libertarianism is hoisted on the town gallows this time, so bystanders can witness these stark implications, and turn their faces away.

**5. The Quausation Problem**

Donald Davidson famously secures mental causation by reductively identifying mental events with causally efficacious physical events of actions (Davidson, 1993). This is like the reductive libertarian identity solution, where agential states are identical with causally efficacious physical causes of actions. Lemos accepts this strategy as well, claiming that efforts of will are identical with neural processes, so efforts of will cause actions. The quausation problem was quickly fashioned against Davidson, according to which events do not simply cause as events, rather events cause in virtue of certain metaphysically existent properties they possess (Kim, 1993; Sosa, 1993; McLaughlin, 1993). The pear depresses the scale in virtue of its mass, not in virtue of its colour; the jog is tiring in virtue of its length not in virtue of its being northward. Similarly, when an agential effort, which is a neural process, causes an action, the question is: does the event cause in virtue of its being an agential effort or in virtue of its being a neural process? Naturalistically inclined philosophers say this event occurs in virtue of its neural properties. The result: even though the neural assembly is an effort of will, the neural process still causes in virtue of it reaching a certain activation threshold, not in virtue of it being a goal-directed effort of will, so agential quausation fails, which threatens free will.

 Davidson replied to the quausation problem by deploying a simple cause strategy: events cannot be divided into causally efficacious and inefficacious properties, rather events cause as events (Davidson, 1993, 13), re-establishing mental causation. In its place, Davidson proposed that these ontologically simple events can be truly described in various ways, so events can be truly given both a physical description and a distinct mental description (Davidson, 1993, 187). Lemos follows Davidson’s path:

When a neural process causes a choice in an undetermined way and that neural process is also rightly labeled as an effort of will, then it is also true that the choice is caused by an effort of will. Both ways of describing what is going on here may be legitimate and true … before Moore concludes that the agent’s efforts are causally irrelevant to what is chosen, he needs some explanation for why Kane’s view that the choice is simultaneously subject to both physicalistic and mentalistic causation is problematic (Lemos, 2022, 17).

There are several problems with this simple cause strategy. First, most philosophers rejected Davidson’s simple cause strategy because the informational benefits of the aforementioned quausal architecture are appealing: surely it is plausible that the pear actually does tip the scale in virtue of its weight, not in virtue of its colour, and not simply in virtue of it being a pear. Second, by definition, conservative reductionism entails complex events (blinded-2, 2019). To see why, consider the eliminative reductionist first: the neural process is a neural process (i.e., has the property of being a neural process) and is not an agential process (i.e., does not have the property of being an agential process), so the neural process is simple in the sense that it lacks neural *and* agential properties, rather it only has neural properties. Likewise, nonreductive views take the neural process to be a neural process without being an agential process, so the neural process again is simple in the sense that it only has neural properties and lacks agential properties. On the contrary, conservative reductionism is defined as the view that the neural/agential process is a neural process (i.e., has the property of being a neural process) and an agential process (i.e., has the property of being an agential process), so the neural/agential process, by definition, has neural properties and agential properties. So, it is always possible to ask: did the event cause the action in virtue of the event being a neural assembly reaching activation threshold, or did the event cause the action in virtue of the event being an effort of will? The answer that naturalistically inclined philosophers give is that the event, in virtue of its neural properties, cause the action, which leaves it causally irrelevant that the neural assembly is also an effort of will.[[6]](#footnote-6)

 Even if these quausal issues can be rejected, Lemos is not out of the woods. Recall that Lemos says that the same process can be truly described in agential vocabulary as an effort of will and in neurological vocabulary as a neural assembly. Since both descriptions are true, he says we cannot eliminate the agential description. But there is reason to think we can. Let us assume that neural process *P* causes *E*, which is given a physical explanation ‘*P* caused *E.*’ Is this physical explanation a complete causal explanation, that is, is it a causal explanation that captures all the true facts about the causal process? It is tempting to say no: a complete physical explanation does not capture all the true agential features of the case. For example, the physical explanation stating ‘neural assembly *P*1 caused a certain activation threshold in Shanice’s brain’ leaves out key agential details captured by the agential description, namely, that ‘Shanice’s attempt to climb the corporate ladder caused her to decide to move away from home.’ Surely, we cannot do away with these true agential facts.

The problem is that this intuition cannot be sustained on reductive libertarianism. This is due to a principle of physical explanatory completeness that states that there is, in theory, a complete physical explanation for all physical events. As Kim says: “when the causal relation provides a sufficient cause, the explanans can also be said to be complete and sufficient” (Kim, 1989, 234). Or, as David Papineau says: “prior physical factors will always suffice to give us as full an explanation of that result as is possible” (Papineau, 1995, 228-229). Since *E* can theoretically be given a complete physical causal explanation, then it would be possible, in principle, to do away with the agential explanation—indeed, a parsimony principle gestures at its exclusion (blinded-3, 2016). In addition, to reject the view that *E* has a complete physical explanation, and insist instead that there are more true facts left to be described after all the physical facts have been described, is typically construed as a rejection of physicalism, which naturalistically inclined libertarians will be hesitant to do.[[7]](#footnote-7)

**6. Conclusion**

Despite Lemos’ notable attempts, reductive physicalist models of libertarian free will continue to face the physical indeterminism luck objection and the related active control problem and quausation problem. I suggest, as I did in (blinded-1, 2022), a nonreductive model of libertarian free will, where there exists both physical causes *P* and distinct agential causes *A* that contributes to whether *E* occurs. Such a model is both a plausible interpretation of Kane, and overcomes the difficulties outlined here. Namely, it overcomes the physical indeterminism luck objection, as actions are not only caused by physical events that agents do not control, but rather there are also distinct agential causes that contribute to the effect. It overcomes the active control problem, for while physical processes are in control of the physical causes of *E*, there are distinct agential causes that the agent is in control of. It overcomes the quausation problem as agent’s efforts of will cause actions in virtue of their own solely effortful nature. And, it overcomes the explanatory irrelevance problems, for while physical causes of effects can be given a complete physical explanation, there remains a distinct agential cause of the effect that requires an agential explanation. In addition, there are ways of housing a nonreductive model of libertarian free will within a naturalistic framework, though the details of such a model lie beyond the scope of this paper.

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1. Mark Balaguer agrees that compatibilist free will is true. He calls compatibilist free will by the name of ‘Hume-style free will,’ according to which agents are free if their “decisions and actions are caused by your desires” (Balaguer, 2014a, 46). He then says it is “obvious that Hume-style free will is compatible with determinism and that we have Hume-style free will” (Balaguer, 2014a, 52), though he also wants to deliver libertarian free will. Likewise, Franklin’s model of libertarianism begins with elements that are compatible with compatibilism (i.e., being normatively competent, having our reasons causing our direct actions), but then adds an indeterministic element. He concludes: “The strategy behind minimal event-causal libertarianism is to adopt the most plausible compatibilist theory of freedom and responsibility and simply add the requirement of indeterminism” (Franklin, 2018, 23). [↑](#footnote-ref-1)
2. Franklin also questions the requirement for *active control*. He says: “an agent’s exercising control over some action *u* is not something she does in addition to *u*-ing” (Franklin, 2011, 227). Balaguer grants that his model decreases the amount of *active control* (Balaguer, 2014a, 88), but he claims that the *passive control* he delivers is worthwhile, while *active control* may be a problematic concept (Balaguer, 2014a, 82-85). [↑](#footnote-ref-2)
3. For his part, Balaguer comes to a similar conclusion: “You have to say that the conscious decision just is the neural event. There aren’t two different things here; there are just two different ways of describing a single event” (Balaguer, 2014a, 56-57). Balaguer provides the classic example of Mark Twain, which is the pen name of Sam Clemens. The same man can be described as ‘being Mark Twain’ and ‘being Sam Clemens.’ [↑](#footnote-ref-3)
4. The clash of intuitions can be clarified by considering successful and failed attempts at reduction. When focusing on cases of successful reductions, Lemos’ intuition appears strong. For example, water reduces to H2O, so there is no difficulty with saying that water causation exists and H2O causation exists by virtue of the same causal relation. Indeed, there is no difficulty in describing the same causal relation in both ways: ‘the ground is wet because water fell from the sky’ and ‘the ground is wet because H2O fell from the sky.’ On the other hand, when considering failed reductions, my intuition appears strong. For example, some say demon possession reduces to schizophrenia, so there is no difficulty with saying that demon causation exists and schizophrenic causation exists by virtue of the same causal relation. Indeed, there is no difficulty in describing the same causal relation in both ways: ‘the man is shaking because he is schizophrenic’ and ‘the man is shaking because he is demon possessed.’ In this case it is obvious that both schizophrenic causation and demon causation do not both exist by virtue of demon possession being identical with schizophrenia. So, which intuition should be followed, the successful case or the failed case? The problem is that the success/failure of the reduction is at issue, so Lemos cannot assume the truth of the reduction without question begging. Let us then consider a different uncertain case, where there are advocates on both sides, and an ultimate answer is unknown. A naturalistic evolutionist and a theistic evolutionist are debating the origins of rabbits. The naturalist says that nature selected rabbits to thrive because they had traits well adapted to their environment. The theistic evolutionist agrees, but adds that God’s design of rabbits just is (identical with) nature selecting rabbits for their well adapted traits, so he marvels at God’s divine design of rabbits. The naturalist is confused: ‘do you believe that only the processes of natural selection caused the development of rabbits?’ The theistic evolutionist nods. The naturalist continues: ‘do you believe God has any control over these processes of natural selection?’ The theistic evolutionist shakes his head: ‘no, God never intervenes in the naturally occurring processes.’ The naturalist retorts: ‘but then surely the divine designer plays no role, God isn’t doing anything, why not simply acknowledge that only naturalistic forces are at play?’ The theistic replies: ‘God’s divine design *just is* the naturalistic processes, and those naturalistic processes are efficacious, so God clearly is creating rabbits!’ The naturalist furrows his brow: ‘but since there is a complete naturalistic explanation, we do not need to add the explanation appealing to divine design.’ The theist shakes his again: ‘of course we do, it is a true description of the facts as well, so it cannot be eliminated.’ Although we do not know for sure who is correct in this case, the naturalist’s line of questioning, which parallels the line of questioning I raise against reductive libertarianism, makes sense. And, the theistic evolutionists line of response, which parallels the line of response the reductive libertarian makes, is dubious in certain ways. [↑](#footnote-ref-4)
5. Here is an objection to this thought experiment: since agential processes are physical processes, it is impossible to imagine zombifying the agential properties while leaving the physical processes untouched. Rather, sucking the agential properties out of Shanice’s brain will suck certain physical processes out of her brain as well, which will change Jerry’s behaviour. But this is not an answer to the question, but an attempt at not allowing the question to be posed. Reductionists should, instead, answer the question. After all, eliminative materialists, epiphenomenalists and dualists have no difficulty imagining the case where the physical processes remain the same while the agential properties are eliminated. Claiming that it is impossible to conceive of a scenario that many have an easy time conceiving of is hardly effective. To return to an example in a prior footnote, the naturalist continues the discussion: ‘when we imagine the case where only the natural selective processes operate, where God’s design is removed from the equation, we see that rabbits evolve in the same way and at the same time, so God is not playing a role.’ The theistic evolutionist replies: ‘it is not possible to imagine this case, as God’s design is identical with natural processes, so removing God’s design would remove the processes of natural selection.’ Seemingly, although the theistic evolutionist cannot conceive of the thought experiment, others can, and it is a fair question to ask. [↑](#footnote-ref-5)
6. It is possible to object that this response works for token reductionism, but does not work for type reductionism. Token reductionism is the view that mental events are identical with physical events, though it has distinct mental and physical properties. Thus, it is easy to formulate the quausation problem, as the event causes in virtue of its physical properties, leaving its mental properties as causally irrelevant. But type reductionism is the view that mental events are identical with physical events, but mental properties are also identical with physical properties. The quausation problem may not apply to type reductionism, as the event does not have both mental and physical properties, so the event cannot cause in virtue of its physical properties instead of its mental properties. The response to this move is straightforward. As this response moves the conservative reduction from the token level (i.e., mental events are physical events) to the type level (i.e., mental properties are physical properties), so the reply is to move the problem from the token level to the type level. Namely, we only need to ask ‘is it in virtue of the mental aspect of this property or the physical aspect of this property that quausal efficacy occurs?’ The naturalistically appropriate response is to say that it is in virtue of the physical aspect of the property, leaving the mental aspect causally irrelevant. It is possible to deploy a revised simple cause strategy here: but properties do not have aspects, properties are simple, so the quausation occurs in virtue of the simple mental/physical property. In response, we must remember that complexity is an inevitable consequence of conservative reduction, no matter where the reduction occurs. By definition, this mental property is a physical property, which means that this property has a mental aspect and a physical aspect to it (blinded-2, 261ff). Reduced mental causation simply does not work. We cannot generate mental causation by appealing to physical causation. [↑](#footnote-ref-6)
7. Lemos can object here that events can be described in many ways—the tornado can be described as ‘the momentous event’ or ‘the event written on pg. 5 of the Times’—so *P* can be given a physical description *P* and an agential description *A*. To be sure, events *can* be described in many ways, but they do not *need* to be described in all these ways. The tornado can be described as ‘the same type of weather event that Sally was thinking of writing a story about but never did’ or ‘the event that happened or didn’t happen.’ There is no shortage of possible true descriptions. But, if we have a complete description already, we do not need to include these extra descriptions. If we already know ‘the tornado caused the barn to fall,’ we do not need to add ‘the event that happened caused the barn to fall,’ or ‘the tornado or the snow storm caused the barn to fall.’ Since physical explanations are theoretically complete, we do not need to include agential explanations either. We could add them, of course, but we could also theoretically do away with them, and that is the problem. But perhaps, since *P* is *A*, both a physical explanation and an agential explanation must be given to fully explain all the true facts of the causal process? This returns us back to the question: is physical explanatory completeness true or false? If it is false, then of course the agential explanation is necessary, as there are more facts than just the physical facts. But reductionists typically do not reject physical explanatory completeness. So, assuming physical explanatory completeness is true, there is a complete physical explanation that fully and truly describes the entire process, so the agential explanation is, by definition, unnecessary. One can reply that the agential explanations are epistemically necessary, since many lack the background needed to gain insight from complete physical explanations, or those explanations would take too long to articulate. Granted agential explanations are epistemically necessary in some contexts, but they are not in principle necessary. Imagine the distant future, when everyone is fully versed in a completed neuroscience and everyone has access to real-time scans of their own brains. In this world people could provide complete physical explanations for their behaviour, forgetting about agential vocabulary entirely. That reductionism allows for this possibility is the problem. [↑](#footnote-ref-7)