John David McAlpin, Michael D. Cook

Independent

dmcalpin@ieee.org

70. Philosophy of Mind

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In Defense of Quantum Dualism*

This paper explores the theoretical compatibility of substance dualism with a physicalist framework, challenging the notion that physicalism inherently precludes dualism. Acknowledging foundational physicalist principles like reductionism, weakly-emergent consciousness, conservation laws, and the limited impact of quantum indeterminacy, we challenge the conclusion that the universe is thus causally closed. Instead, we propose a speculative model where an extra-physical entity (akin to a "soul") might intentionally influence quantum outcomes, and examine it as a possible mechanism for libertarian free will. We consider the "amplification problem" faced by the approach: the challenge of scaling subtle quantum influences, typically inconsequential, to a level that significantly impacts processes associated with human free will. Bob Doyle's Cogito model provides a solution, wherein quantum-level events can be linked to conscious human choices. Our paper does not seek to demonstrate that such a dualist model is probable, only that it is possible to construct a plausible dualist model within established scientific parameters.

Keywords: Free Will, Interaction Problem, Physicalism, Quantum Mechanics, Substance Dualism

Introduction:

Academic discussions in philosophy and science can become detached from everyday beliefs and intuitions. Nowhere is this more apparent than in our shared intuition of genuine, fundamental liberty ("free"), and in the belief that there is something more at stake than an inevitable unfolding of cause and effect ("will"). As it has for centuries, the allure of libertarian free will continues as a beacon of philosophical inquiry.

Meanwhile, sophisticated and rigorous arguments for physicalism severely challenge traditional concepts of libertarian free will. Substance dualism is embattled, and notions like the "soul" are routinely dismissed as metaphysical relics incompatible with contemporary science. While it remains

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a common view outside academia, the idea that an immaterial soul might somehow help manage its associated human body seems increasingly incredible in the face of science and reason.

This paper asks whether it is indeed impossible to reconcile a physicalist framework with the age-old dualist belief in a soul. Specifically, we attempt to construct a model where a “soul” is capable of influencing the decision-making process, thereby generating the capacity for libertarian free will.

In keeping with this year's theme of "Philosophy Across Boundaries," we approach the problem as we might an engineering challenge. We imagine our would-be soul as an attacker, scouring the target physicalist system for some weak spot that might be compromised and exploited to accommodate a dualist agenda. Those with a computer background may recognize this as a penetration test. Moviegoers might recognize it as the motivation behind all classic heist movies: if you wanted to rob an un-robbable bank, how would you do it?

We explore the possibility not to advocate for substance dualism, but to consider how a substance-dualist perspective might be reconciled with the physicalist assumptions that underpin modern science. By speculating on this integration, we hope to shed light on the theoretical space where reconciliation might occur.

The Background:

We begin by grounding our discussion on what we take to be foundational physicalist assumptions.

Broadly, we assume the fundamental reality of the physical universe, massively dominated by cause and effect, and bound by conservation laws that underlie the coherence and predictability of all physical processes.

We assume a reductionist position, which posits that complex phenomena can be understood in terms of interactions between simpler, more fundamental elements. This notion underpins all our best scientific analysis of the physical world, from chemical bonds at the smallest scales to the neural networks that make up the human brain.

According to this position, regardless of how complex a system becomes, it is in principle completely explainable in terms of its simpler constituent parts. This reasoning applies to consciousness as well,

which we take to be a weakly-emergent property of a complicated system that is ultimately explainable by its simpler underlying physical processes.

Possible limits to reductionism come into play when we reach foundational physics, especially regarding quantum indeterminacy, but any weirdness at that level washes out quickly. At almost any scale that might matter for libertarian free will, quantum indeterminacy has a negligible effect.

Taken together, we recognize that these arguments make a strong case for causal closure.

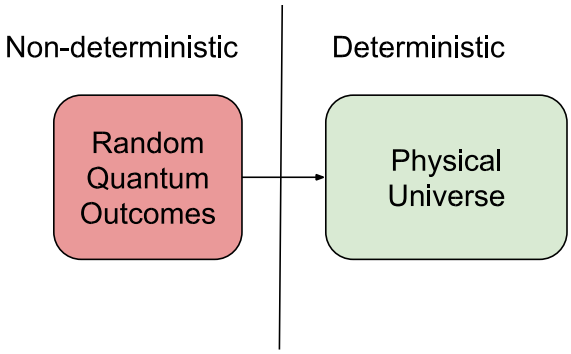
The Attack:

We leverage the idea of a penetration test (more commonly a "pen test"), borrowed from engineering. A pen test is a tool used to analyze the security, and potentially the vulnerabilities, of complex systems. Using this analogy, our goal is to construct an attack, feasible within a physicalist framework, that ideally ends with a soul-like being able to demonstrate free will. Our strategy will be to find some weakness in the target system and then exploit it, attempting to amplify the weakness to a point where our soul is able to exercise sufficient influence on the target system, respecting physicalism throughout.

As we look for possible attack vectors, the macroscopic world of cause and effect seems hopeless. We already granted causal closure, at least at the level where cause and effect dominate. We cannot hope to directly change physical outcomes by intervening at this level, almost by definition.

At the smallest possible scales, we find wiggle room in the acausal world of quantum indeterminacy. However, quantum events are almost unfathomably distant from the scale of human activity. Even if we somehow managed to make headway at this level, it is not clear how much leverage we could possibly gain against the larger system.

In a simplified model of the target system, we imagine a perfectly designed, entirely consistent universe. This universe is completely closed off, except for a single external input – the randomness of quantum mechanics.



Unfortunately for our attack, while the random side provides almost constant input to the system, that input is used only at the smallest levels. Any deviation from the norm is almost immediately drowned out by noise, long before it has a noticeable impact on the physical world.

Facing an otherwise causally closed system, our path to progress must somehow leverage nondeterministic quantum outcomes. Thus, we tentatively launch our soul's attack at the quantum level, targeting quantum uncertainty as our entry point.

One advantage for this approach is that non-physical effects on quantum events are unlikely to be detected.[1] Unless the influence of the soul produced outrageous results, nobody would notice. This means that, in theory, a soul could be currently operating on quantum-level events, and we would be unlikely to detect its influence. This opens a theoretical space for our soul to reside.

However, a major objection remains. Assuming the soul manages to influence the outcome of seemingly random events, what would that accomplish? Even if we could gain enough control to output any series of quantum measurement outcomes we wanted, how would that move us closer to the goal of empowering a nonmaterial soul to do soul-things on a scale we would care about?

Physicist and philosopher Bob Doyle offers a clever solution: a modified two-stage model of decision making. To understand why this model is such a useful tool in our attack narrative, we need to step back and consider Doyle's Cogito Model in some detail.

Doyle's Model:

Doyle begins with a conceptual model for decision making, to which he credits William James.[2]

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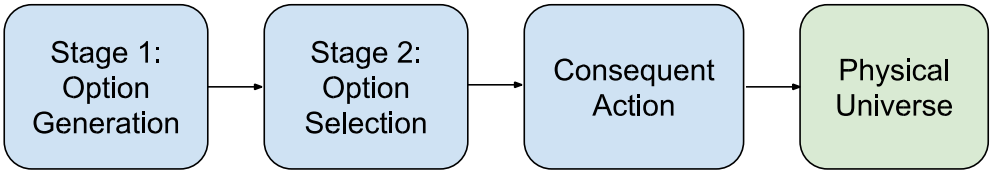
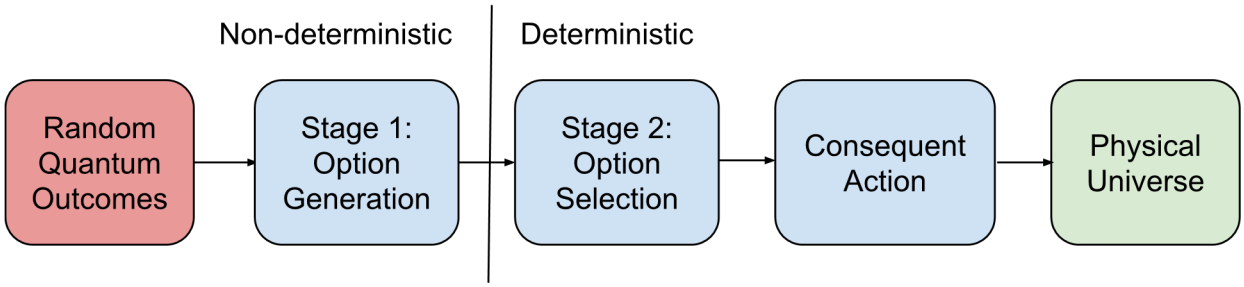
[1] Bob Doyle, *Free Will: The Scandal in Philosophy* (Cambridge: I-Phi Press, 2016), 191.
[2] Doyle, *Free Will*, 99.

The model views decision-making as occurring in two stages. In the first stage, options are generated, representing the range of potential choices to be considered. The second stage then critically evaluates these options, eventually choosing among them based on factors like reason, experience, values, expected outcomes, and personal character. This two-stage model offers a structured way of thinking about decision-making, using a simple schema that is consistent with our shared experience of choosing.



Doyle builds on this insight with his Cogito Model,[3] formalizing the two-stage model and incorporating elements from contemporary science, especially quantum physics. In particular, Doyle claims that while the second, evaluative stage is deterministic, the first stage of idea generation may be subject to quantum indeterminacy.



By fixing the model's ideation stage at least partially outside the realm of causal closure, Doyle offers a model that challenges a purely deterministic account, taking advantage of both macroscopic determinism and microscopic indeterminism. According to Doyle, "Chance in the first stage provides the variety of alternative possibilities, each the possible start of a new causal chain, from which the deterministic judgment can choose an alternative that is consistent with its character and values."[4]

If Doyle's model is correct, it makes an attack on quantum events especially appealing:[5]

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[3] Doyle, *Free Will*, 187.
[4] Doyle, *Free Will*, 193.
[5] This application is not entirely novel. While Doyle views his Cogito Model primarily through an event-causal lens, he also recognizes that it "can be seen as providing a purely physical explanation for agent-causal libertarianism… shar[ing] aspects with the metaphysical idea of an immaterial substance dualism." Doyle, *Free Will,* 202.

- If by biasing the outcome of quantum events we can shape the range of options considered during the decision-making process;
- And if one of our preferred options, one that would not have won out otherwise, is eventually selected and acted upon;
- Then we have managed to amplify our attack on the quantum level into an intentional, nontrivial manifestation at the level of human decision-making.

This means that if the soul was able to influence the outcome of events at the quantum level, it would also be capable of influencing the outcome of events at the macro-level. It would do so in a manner that is acausal at the micro-level, but deterministic at the macro-level. The tenets of physicalism consequently remain intact – or at least, the physicalist world and its dualist-physicalist counterpart are practically indistinguishable.

Consequences:

At the outset of this paper, we indicated that our objective would be to reconcile a form of libertarian free will grounded in dualism with physicalism. So far, we have demonstrated both that preternatural influences on quantum outcomes could go undetected, and that these influences would be, in theory, capable of affecting the world of human experience. However, we have yet to explain how it is that this influence can be considered dualistic.

While some dualist models posit the existence of a soul with capacities like immortality, reincarnation, etc., here we are considering only the capacity for free will. Our soul-like being need only be capable of enabling us to act free from deterministic constraints. As it stands, we postulate that our soul-like being, independent of the cause and effect of the physical world, is plausibly capable of intentionally changing physical reality by influencing the outcome of quantum events. Using Doyle's model, we see those quantum events as capable of changing the course of human decision making.

The specific qualities of the soul-like being are irrelevant for our case, even as regards its intentions, an understanding of how its influence at the micro-level achieves macro-level objectives, or whether the interests of the soul-like being align with our own. We leave it to subsequent work to consider

counterarguments and implications for issues like moral responsibility, personal identity, or any of the more speculative understandings of the soul.

Conclusion:

Our thought experiment takes a tentative step toward potential common ground among two seemingly irreconcilable camps – physicalism and dualism. We approach the problem from three intersecting perspectives – science, philosophy, and engineering. We offer it in hopes of inspiring deeper interdisciplinary conversations that both challenge the argument and explore its possible implications.

Using an unorthodox analysis that draws on our shared strengths, we hope to provide a fresh perspective on an ancient inquiry, respecting the rigors of philosophy and empirical science while also honoring the deeply held intuitions and beliefs that continue to shape our human experience.

Bibliography:

Doyle, Bob. *Free Will: The Scandal in Philosophy*. Cambridge: I-Phi Press, 2016.