



## Libertarian Free Will, Naturalism, and Science

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### Abstract

If we have libertarian free will, then it is plausible to believe that the occurrences of certain physical events have irreducible and ineliminable mental explanations. According to a strong version of (metaphysical) naturalism, everything in the physical world is in principle explicable in nonmental terms. Therefore, the truth of naturalism implies that libertarian choices cannot explain the occurrences of any physical events. In this paper, I examine a methodological argument for the truth of naturalism and conclude that the argument fails. I then consider additional concerns raised against the reality of libertarian freedom. First, I examine the claim that if a physical event E is not causally determined to occur by another physical event, then there is no way to account for the difference between E's occurring randomly and E's being causally determined to occur by a mental event. Second, I consider the assertion that the affirmation of libertarianism is a mind-of-the-gaps version of the God-of-the-gaps objection to a divine explanation of a physical event. Third, I take up the question of whether the inability of libertarians (or anyone else) to pinpoint precisely where the initial physical effects of libertarian choices occur is a good reason for rejecting libertarianism. Fourth, I examine the claim that belief in the existence of the soul or immaterial mind is the result of an explanatory hypothesis to account for how libertarian free choices can causally produce physical effects. Fifth, I look at the traditional objection to substance dualism from the impossibility of causal interaction between a soul and its body.

Research Article



### Keywords

Libertarian freedom, Naturalism, Mental, Purpose, Substance dualism, Dual-aspect theory, Causal interaction.

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## Introduction

I am going to assume that if libertarianism is true, then some physical events have irreducible and ineliminable ultimate mental explanations. Thus, the truth of libertarianism is in direct conflict with (metaphysical) naturalism, which I take to be the view that everything in the physical world is in principle completely explicable in nonmental terms. If naturalism is true, then libertarian choices cannot explain the occurrence of any events in the physical world because choices are essentially mental events that are explained by purposes that are also essentially mental in nature.

The outline of this paper is as follows. In Section I, I briefly explain what I mean by the term “mental.” Section II consists of a methodological argument from science for the truth of naturalism. In Section III, I explain why I believe this methodological argument fails, and in Section IV I consider additional concerns some people raise for libertarianism in terms of its implications for the occurrence of events in the physical world. Given the assumption that libertarian choices occur in souls or nonphysical minds, I briefly consider the metaphysical issue of causal interaction raised by soul-body substance dualism in Section V.

## Section I

Libertarians believe we make choices, where a choice is essentially a mental event. What is it for an event to be mental in nature? I will assume that an event is mental in nature insofar as it includes what philosophers refer to as content. Thus, in choosing to write this paper, the content of what I choose, the content of my choice, is *that I write this paper*. Content is expressible in a “that” clause, which in this case is *that I write this paper*. Because I choose to write this paper for the purpose *that I provide a defense of libertarian free will*, *that I provide a defense of libertarian free will* is the purpose that explains my writing, and this purpose is itself essentially mental in nature. If we assume that my choice to write this paper causally produces physical events in my body that in the end produce the physical movements of my fingers on the keys as I type these words, then there is an initial mental-to-physical causal explanation of a subsequent physical-to-physical chain of events, where the mental cause of this physical-to-physical chain of events is explained by a mental purpose. Thus, the causal chain of mental-to-physical and then physical-to-physical events is ultimately explained by a purpose that is essentially mental in nature.

It is worth noting that in my brief description of libertarian freedom in terms of choosing, I make no mention of the idea of agent causation. I assume that a

choice is an essentially uncaused event (it lacks a causal explanation of any kind, both agent- and event-causal) but is nevertheless explained in terms of the purpose for which it is made. I have argued at length elsewhere (Goetz, 1988; 2008) that choices are essentially uncaused events and that the notion of agent causation is superfluous for explaining libertarian freedom. I will say nothing more about this issue in this paper.

## Section II

According to naturalism, the kind of mental explanation of physical events described in Section I cannot occur because physical events are in principle completely explicable in terms of other physical events. For example, the naturalist David Armstrong defines “naturalism” as follows:

Naturalism I define as the doctrine that reality consists of nothing but a single all-embracing spatio-temporal system. [I]f the principles involved [in the spatio-temporal system] were completely different from the current principles of physics, in particular, if they involve appeal to mental entities, such as purposes, we might then count the analysis as a falsification of Naturalism. But the Naturalist need make no more concession than this (Armstrong, 1978, p.261-262).

And here is what David Papineau, another naturalist, has to say about explaining events in the material world:

We may not know enough about physics to know exactly what a complete “physics” might include. But as long as we are confident that, whatever it includes, it will have no ineliminable need for any distinctively mental categorizations, we can be confident that mental properties must be identical with (or realized by) certain non-mentally identifiable properties (Papineau, 2002, p.41).

When I say that a complete physics excludes psychology, and that psychological antecedents are therefore never needed to explain physical effects, the emphasis here is on “needed.” I am quite happy to allow that psychological categories *can* be used to explain physical effects, as when I tell you that my arm rose because I wanted to lift it. My claim is only that in all such cases an alternative specification of a sufficient antecedent, which does not mention psychological categories, will also be available (Papineau, 1993, 31n. p.26).

Why might someone believe in naturalism? One argument for naturalism is methodological in nature. In a nutshell, it is that we cannot do science without a methodological commitment to the *causal closure* of the physical world,

where causal closure implies that science is methodologically committed to allowing only nonmental explanations of physical events. Thus, even if there can be a libertarian free choice made for a purpose, it cannot causally produce an event in the physical world. To illustrate this methodological commitment, consider the following lines of reasoning by the philosophers Richard Taylor and Jaegwon Kim.

Richard Taylor asserts the following:

Consider some clear and simple case of what would... constitute the action of the mind upon the body. Suppose, for example, that I am dwelling in my thought upon high and precarious places, all the while knowing that I am really safely ensconced in my armchair. I imagine, perhaps, that I am picking my way along a precipice and visualize the destruction that awaits me far below in case I make the smallest slip. Soon, simply as the result of these thoughts and images... perspiration appears on the palms of my hands. Now here is surely a case, if there is any, of something purely mental... and outside the realm of physical nature bringing about observable physical changes... Here... one wants to say, the mind acts upon the body, producing perspiration (Taylor, 1992, p.20).

However, Taylor cautions us against such a simple supposition:

But what actually happens, alas, is not nearly so simple as this. To say that thoughts in the mind produce sweat on the hands is to simplify the situation so grossly as hardly to approximate any truth at all of what actually happens... The perspiration... is secreted by tiny, complex glands in the skin. They are caused to secrete this substance, not by any mind acting on them, but by the contraction of little unstriated muscles. These tiny muscles are composed of numerous minute cells, wherein occur chemical reactions of the most baffling complexity... These... connect eventually, and in the most dreadfully complicated way, with the hypothalamus, a delicate part of the brain that is centrally involved in the emotional reactions of the organism... [B]ut it is not seriously considered by those who do know something about it that mental events must be included in the description of its operations. The hypothalamus, in turn, is closely connected with the cortex and subcortical areas of the brain, so that physical and chemical changes within these areas produce corresponding physical effects within the hypothalamus, which in turn, by a series of physical processes whose complexity has only barely been suggested, produces such remote effects as the secretion of perspiration on the surface of the hands (Taylor, 1992, pp.20-21).

Taylor concludes his overview of the goings-on in emotional perspiration with the following: “Such, in the barest outline, is something of the chemistry and physics of emotional perspiration... The important point, however, is that in describing it as best we can, there is no need, at any stage, to introduce mental or nonphysical substances or reactions” (Taylor, 1992, pp.21-22).

According to Taylor, while we are inclined to believe that certain physical events in our bodies are ultimately explained by mental events of non-physical substances (human souls/minds), as a matter of fact, there is no need at any point to step outside the physical causal story to explain the occurrences of those physical events. Jaegwon Kim uses an example of a neuroscientist to make the same point:

You want [or choose] to raise your arm, and your arm goes up. Presumably, nerve impulses reaching appropriate muscles in your arm made those muscles contract, and that’s how the arm went up. And these nerve signals presumably originated in the activation of certain neurons in your brain. What caused those neurons to fire? We now have a quite detailed understanding of the process that leads to the firing of a neuron, in terms of complex electrochemical processes involving ions in the fluid inside and outside a neuron, differences in voltage across cell membranes, and so forth. All in all, we seem to have a pretty good picture of the processes at this micro level on the basis of the known laws of physics, chemistry, and biology (Kim, 1996, pp.131-132).

According to Kim, the physical explanatory story is unproblematic until one introduces an immaterial mind (a soul) to explain the raising of one’s arm:

If the immaterial mind is going to cause a neuron to emit a signal (or prevent it from doing so), it must somehow intervene in these electrochemical processes. But how could that happen? At the very interface between the mental and the physical where direct and unmediated mind-body interaction takes place, the nonphysical mind must somehow influence the state of some molecules, perhaps by electrically charging them or nudging them this way or that way. Is this really conceivable? Surely the working neuroscientist does not believe that to have a complete understanding of these complex processes she needs to include in her account the workings of immaterial souls and how they influence the molecular processes involved... Even if the idea of a soul’s influencing the motion of a molecule... were coherent, the postulation of such a causal agent would seem neither necessary nor helpful in understanding why and how our limbs move... Most physicalists... accept the causal closure of the physical not only as a

fundamental metaphysical doctrine but as an indispensable methodological presupposition of the physical sciences... If the causal closure of the physical domain is to be respected, it seems *prima facie* that mental causation must be ruled out... (Kim, 1996, pp.132, 147-148).

While Kim agrees with Taylor about the lack of a need on the part of a scientist to go outside the physical explanatory story to explain physical events, he explicitly introduces the additional idea that to be successful the physical sciences need to make the methodological assumption of the causal closure of the physical world. Science, therefore, provides support for a belief in naturalism.

### Section III

In presenting their arguments for the causal closure of the physical world, Taylor and Kim talk in terms of nonphysical or immaterial minds or souls as the subjects of mental events. For purposes of this paper, I, like them, assume a substantial mind or soul (I use the terms interchangeably) is the locus of mental events including choices made for purposes. Thus, when Taylor and Kim claim that the causal closure of the physical domain excludes explanations of physical events in terms of *minds* acting upon and causing physical events in bodies, they are maintaining that the causal closure of the physical world excludes *mental events* from doing any explanatory work with respect to what happens in the physical world.

If we assume that Taylor and Kim are correct in maintaining that the assumption of causal closure by science implies the methodological exclusion of a mental explanation of any physical event, does it follow that there can never be an irreducible and ineliminable ultimate mental explanation of a physical event? There is good reason to believe this does not follow. To understand why not, it is helpful to distinguish between a scientist *as a scientist* and a scientist *as an ordinary/everyday human being*. Kim's example of the neuroscientist, surely she, as an ordinary human being who is providing an explanation for why her fingers move as they do in her scientific experimental work, would make reference to her purpose for choosing to conduct her experimental work. Kim and Taylor concede that while she, as an ordinary person, would include her purpose for choosing to conduct her experimental work as the explanation for why her fingers move as they do, they also claim that as a physical scientist she must methodologically exclude any reference to what is mental in nature when explaining the movements of her fingers (or any other physical event) in her experimental work. What we want to know is whether the explanations she is committed to providing as a

scientist are compatible with the explanations she provides as an ordinary human being.

What is the neuroscientist seeking to understand about the physical entities she studies in her work as a scientist? According to the Nobel physicist Richard Feynman, scientific questions are “questions that you can put this way: ‘if I do this, what will happen?’... And so the question ‘If I do it what will happen?’ is a typically scientific question” (Feynman, 1998, pp.16, 45). If we take Feynman’s statement as our guide, presumably Kim’s neuroscientist is trying to *discover* how particles or microphysical entities such as neurons behave when they are causally affected by exercised causal powers of other physical entities, including other neurons. For example, the pioneering neuroscientist Wilder Penfield described in his book *The Mystery of the Mind* how he produced movements in the limbs of his patients by stimulating their cortical motor areas with an electrode (Penfield, 1975). As Penfield observed the movements of muscles and appendages like fingers that resulted from stimulation by the electrode, it is reasonable to maintain that he methodologically had to assume as a scientist that *during his experiments* the areas of the brains he was studying were causally closed to mental events. As the geneticist, J. B. S. Haldane wrote, “My practice as a scientist is atheistic. That is to say, when I set up an experiment I assume that no god, angel, or devil is going to interfere with its course, and this assumption has been justified by such success as I have achieved in my professional career” (Subramanian, 2020, p.9). Without this methodological assumption of the causal closure of the physical world during their experiments, Penfield and Haldane could not conclude that it was, if we focus on Penfield’s case, the electrode, as opposed to some mental event involving an empirically undetectable human soul or God, that causally affected the capacities of the relevant neurons in the cortical motor areas of his patients’ brains to conduct electrical impulses, and that it was the causal impulses of those neurons which causally affected the capacities of other neurons farther down the causal chains to produce the movements in appendages like fingers.

But is there any reason to conclude from this methodological assumption that Penfield had to make as a scientist that the physical world is *universally* causally closed to mental events? That is, is there any reason to conclude from the need for scientists to assume causal closure in their experimental work that the physical world is *always and everywhere* closed to mental events causally producing physical effects? It is hard to understand why one would conclude this. For example, in the case of the cortical motor areas investigated by Penfield, how does it follow from the fact that instances of certain kinds of brain events can be causally produced by electrical

stimulation with an electrode that other instances of those kinds of brain events can only be produced by stimulation with an electrode or by some other event involving a physical object? More specifically, why is it impossible for other instances of those kinds of brain events to be produced by choices made by souls for purposes? Without a convincing answer to this question, it seems like the universal causal closure of the physical world is not supported by methodological considerations for doing science but by a metaphysical assumption of naturalism.

If the foregoing line of reasoning is sound, is there any reason to think a metaphysical commitment to naturalism is unjustified? It seems that one of the most obvious reasons for maintaining that it is unjustified is that scientists engage in scientific experimentation for purposes. For example, some scientists conduct experiments for the purpose of eliminating diseases. Others conduct experiments for the purpose of experiencing the pleasure that comes from understanding how the physical world works. In my own case, I am currently typing on my computer for the purpose of writing a paper in which I attempt to make clear that the practice of science provides no reason for doubting that we have libertarian free will. As I intend that my fingers move in certain ways on the keys to type certain words for the just-stated purpose, I observe that my fingers are moving as I intend. It is thoroughly reasonable for me, as an ordinary person, to believe that my purpose for typing is what ultimately explains their movement. At least, the methodological argument from causal closure fails to provide a reason to doubt what I, as an ordinary person, believe about my purposeful choices to act and the effects they have in the physical world.

#### Section IV

There are various concerns that can be raised about the implications of my affirmation of the reality of libertarian free will in my response to the methodological argument from causal closure for naturalism in Section III.

First, there might be a concern that my response to the methodological argument from causal closure assumes that the behavior of micro-entities, in addition to being iff in nature in the way described by Feynman, is also deterministic in the sense that the occurrence of an effect event in a micro-entity is necessitated to occur. However, might it not be the case that undetermined (random) events sometimes occur in micro-entities, so that while a neuron sometimes fires because it is causally determined to do so, on other occasions it might fire indeterministically as a result of, say, random quantum fluctuations in a chaotic system which are magnified at the neuronal



level? Does not contemporary physics provide some reason for us to be open to such a possibility? For example, Alan Lacey, in his instructive entry on materialism in the *Oxford Companion to Philosophy*, advises materialists [physicalists] not to assume a stable, fully deterministic spatiotemporal realm:

Photons and neutrons have little or no mass and neither do fields, while particles pop out of the void, destroy each other, and pop back in again.

All this, however, has had remarkably little effect on the various philosophical views that can be dubbed “materialism,” though one might think it shows at least that materialism is not the simple nonsense, tough-minded alternative it might once have seemed to be (Lacey, 2005, p.564).

In light of this cautionary reminder, I will not assume a classical (deterministic) Newtonian world, but entertain the possibility of a brute random indeterminacy among the brain’s 100 billion neurons. If neurons sometimes fire randomly as suggested, is it possible to make a justifiable distinction between random firings and those that occur as the result of being causally determined by an uncaused mental choice of an immaterial mind? The two firings are alike to the extent that neither has a physical cause that necessitates its occurrence. If both firings ultimately have an indeterministic source and, by hypothesis, lead to finger movements, how is it possible reasonably to distinguish between the two firings and the finger movements which they produce?

A libertarian can reasonably answer that the two firings can be distinguished by considering the contexts in which they occur, where the one context, but not the other, includes a choice to perform a bodily action (for example, typing this paper) for a purpose (for example, that it be made clear that science provides no reason to doubt that we have libertarian free will). In the context that includes the choice to perform a bodily action for a purpose, how plausible is it to maintain that when the agent makes the choice to act for a purpose an initial neuron fires randomly as a result of quantum fluctuations and produces the bodily movements that mesh with or map onto those that are purposefully chosen by the agent? Because such a coincidental occurrence (and repeated instances of such coincidental occurrences) would literally be miraculous in nature, the only plausible view is that the initial neuron firing did not occur randomly, even though it lacked a physical cause, but was causally determined to occur by the agent’s choice (or some other mental event that was correlated with that choice) to act for a purpose.

The importance of choosing for a purpose helps with answering a second concern that might be raised about the implications of affirming libertarian

free will. The claim that there is a physical event for which there is no physical cause might suggest a version of the God-of-the-gaps objection. According to that objection, it is methodologically impermissible to appeal to God to explain some event in the physical world for which no physical explanation has been discovered. Were such an appeal allowed, science might abandon its quest for a physical explanation of a certain physical event in light of repeated failures to discover such an explanation. And this would at some point undermine the progress of science. In the context of considering free will and its implications for or relationship to science, a proponent of a mind-of-the-gaps objection would maintain that it is methodologically impermissible to appeal to a mental event with its purposeful explanation to explain causally the occurrence of a physical event (for example, the firing of a neuron) for which no physical explanation has been found. Were such an appeal allowed, the progress of a science like neuroscience would be thwarted when it failed in its quest to find the physical explanation of a neurological event.

Libertarians can plausibly respond to this concern that their claim that there is a physical event without a physical cause is not a mind-of-the-gaps argument because libertarians do not postulate a choice with its purposeful explanation as the cause of a physical event on the basis of not being able to find a physical explanation for that physical event. On the contrary, libertarians maintain that they are directly aware of making choices to perform bodily actions for purposes, and because they make such choices it must be the case that there are physical events that do not have physical causal explanations.

If the truth of libertarianism implies that there must be physical events for which there are no physical explanations, then a third concern about libertarianism is the inability of libertarians (or anyone else) to pinpoint precisely where these physical events which lack physical causes occur. Do not libertarians need to tell us about where these mental-to-physical causal interactions occur so that there is some empirical accountability with respect to the implications of the supposed truth of libertarianism?

It is not immediately clear why libertarians need to be able to specify a locus for the relevant mental-to-physical causal interactions. This is for two reasons. First, while agents are aware from the first-person perspective of choosing for purposes, they are unaware from that perspective of where in the human body the mental-to-physical causal interaction occurs, or whether it occurs at one or multiple points. Second, it is not clear exactly how the point or points of causal interaction might be observed from the third-person observational point of view. From that perspective, what would count as evidence that a place in the body (brain) is the point of causal interaction?

Would the failure to find a physical explanation of a particular brain event (or events) on the occasion of a chosen, purposeful bodily movement (for example, the movement of my fingers while typing this paper) provide evidence that the brain event in question must have been caused by that choice? Not necessarily. An answer to the question seems to depend upon certain assumptions which one brings to the physical datum. For example, on the one hand, if one is a naturalist, then one will respond to this failure to find a physical explanation by maintaining that the occurrence of the brain event had a physical explanation that is yet to be discovered. On the other hand, if one is a libertarian on the basis of one's first-person experience of choosing, then one might take the failure to find a physical explanation of the brain event as defeasible evidence for its being the locus of causal interaction. However, if subsequent scientific investigative work were to discover a physical explanation for the occurrence of that particular brain event (how this might be discovered is itself an interesting question), one would not conclude either that there is no locus of causal interaction or that the making of the choice did not take place, because one's belief in libertarianism is not based on third-person observation of the external world. Rather, one would conclude that the locus of mental-to-physical causal interaction, which one believes must exist given one's choices make a difference as to the movement of some things in one's body, has not yet been discovered.

A fourth concern is about belief in the existence of the mind as a substance that is distinct from its physical body and the relationship of that belief to a belief in libertarianism. Richard Taylor's and Jagwon Kim's formulations of the methodological argument from causal closure in terms of an immaterial or nonphysical mind or soul causally interacting with its physical body suggest they think a belief in the truth of libertarianism is conjoined with a belief in substance dualism. What explains this conjunction of beliefs?

The libertarian Robert Kane suggests that a belief in substance dualism is a result of trying to explain how we can have libertarian freedom:

One crude reaction [to the suggestion that we are not independent sources of active motions of our physical bodies and]... in defense of our psyches (or ourselves as independent sources of activity) is to insist that we are not in the natural world at all. The self behind the window is outside the natural world altogether, looking in on it. This reaction is, of course, mind-body dualism of the Cartesian kind. I do not wish to defend such a view here, for I believe, along with most contemporary philosophers, that it is too crude a reaction to the dialectic of selfhood, and creates more puzzles than it solves... But I think it is important to understand why dualism is a natural reaction at a certain stage in the

dialectic of selfhood. It is an attempt to salvage the self or psyche as an independent source of activity by placing it beyond the subversive influences of the “world” or “not-self” (Kane, 1996, p.94).

According to Kane, a belief in substance dualism is reactive in the sense that people introduce the existence of an immaterial mind on the grounds that its existence is necessary to explain the reality of libertarian freedom in which they believe on other grounds. However, there is good reason to think Kane is mistaken. According to the experimental cognitive scientist Jesse Bering, human beings are believers in dualism from the get-go (Bering, 2006). Similarly, the psychologist Nicholas Humphrey recognizes the human inclination to believe in dualism, and he cites others who deem this belief common:

Thus, development psychologist Paul Bloom aptly describes human beings as “natural-born dualists.” Anthropologist Alfred Gell writes: “It seems that ordinary human beings are ‘natural dualists,’ inclined more or less from day one, to believe in some kind of ‘ghost in the machine’... Neuropsychologist Paul Broks writes: “The separateness of body and mind is a primordial intuition... Human beings are natural born soul makers, adept at extracting unobservable minds from the behaviour of observable bodies, including their own (Humphrey, 2011, p.195).

In short, a belief in the existence of the soul (whether or not it is regarded as a ghostlike entity) is not held as the result of an explanatory hypothesis to account for libertarian freedom but is non-inferential or basic in nature. And this belief is as universal as the air we breathe. For example, historically a belief in the soul is found among the Greeks, Jews, Hindus (the *atman*), native North Americans, North Eurasians, and the Japanese (Bremmer, 1983). And the contemporary action theorist Alfred Mele, who is agnostic about our possession of libertarian free will, writes the following about participants in his studies that are designed to elicit convictions about the nature of human freedom (Mele, 2014, p.227): “I am confident that most of the participants in my studies believed in nonphysical souls” (Bering, Bremmer, Humphrey, et al are correct, it is thoroughly plausible to maintain that it is Kane and many other contemporary philosophers who are reactionaries insofar as they deny and argue against the existence of the soul).

If, contrary to what Kane claims, libertarians do not postulate the existence of the soul to explain how libertarian free will is possible as an independent source of activity in the midst of a physical world, why are many philosophers, even some libertarians about human free will, intellectually ill at ease with the

view that souls are the locus of the power to choose? Timothy O'Connor, who is a libertarian, believes science poses a problem for substance dualism in a way not yet considered in this paper. According to him,

[t]he fundamental problem [with substance dualism] is that our sciences point to highly continuous processes of increasing complexity, but the two-substance account requires the supposition of abrupt discontinuity. The coming to be at a particular point in time of a *new substance* with a suite of novel psychological capacities... would be a highly discontinuous development (O'Connor, 2013).

So what does O'Connor suggest as an alternative to the two-substance account? He proposes that at some point in the continuous biological story, psychological/conscious properties "different in kind" emerged from the hierarchically-structured physico-chemical properties of the brain: "[T]hese conscious states have distinctive intrinsic features, immediately apprehended by their subject, that in no way resemble the sorts of features science attributes to complex neural states" (O'Connor, 2013). But if substance dualism is objectionable on the grounds that it introduces discontinuity into the developmental processes in the natural world, then O'Connor's property-dualist view of the self (sometimes described as the dual-aspect theory of the self) is no less objectionable. After all, O'Connor's view appeals to emergent psychological/conscious properties which, in virtue of their being different in kind from physico-chemical properties, are just as discontinuous, strange, and magical as a specially created soul. The substance dualist would stress that he is merely claiming that the distinctive intrinsic psychological features to which O'Connor rightly draws our attention are properties of a soul.

## Section V

It is reasonable to maintain that science with its methodological assumption of causal closure pose no problem for libertarian free will. And it is also reasonable to hold that the idea that libertarian choices occur in souls is not problematic in terms of creating other difficulties for the scientific study of the physical world. However, there is one objection to substance dualism that is not rooted in or associated with science but is instead metaphysical in nature. The objection received one of its most pointed formulations by Princess Elizabeth of Bohemia in a letter dated 16 June, 1643 to René Descartes in which she wondered how a nonphysical soul causally interacts with its physical body:

For it seems that all determination of movement takes place by the

propulsion of the thing moved, by the manner in which it is propelled by that which moves it, and by the qualification and shape of the surface of this latter. Contact is required for the first two conditions, and extension for the third. You yourself entirely exclude extension from the notion you have of the mind, and a touching seems to me incompatible with an immaterial thing (Descartes, 1958, pp.250-251).

In response to Princess Elizabeth, Descartes wrote that “for soul and body [operating] together we have no notion save that of their union” (Descartes, 1958, p.252). In a letter to another correspondent, Antoine Arnauld, Descartes said that

[t]hough we are not in a position to understand, either by reasoning or by any comparison drawn from other things, how the mind, which is incorporeal, can move the body, none the less we cannot doubt that it can, since experiences the most certain and the most evident make us at all times immediately aware of its doing so. This is one of those things which are known in and by themselves and which we obscure if we seek to explain them by way of other things (Descartes, 1958, p.262).

And to Pierre Gassendi, Descartes wrote

that the whole problem [of how the soul can move the body] arises from a supposition that is false and cannot in any way be proved, namely that if the soul and the body are two substances whose nature is different, this prevents them from being able to act on each other (Descartes, 1984, p.275).

Some philosophers take Descartes’ (and others’) inability to say anything informative about how a soul and its body interact to be a good reason for rejecting substance dualism. However, because they believe we must preserve an explanatory role for the mental, they advocate a property-dualist position like that espoused by Timothy O’Connor at the end of the previous section. They believe it is possible to preserve explanatory space for the mental by affirming that both mental and physical properties are had by a physical body. But it is hard to understand how property dualism is an improvement over substance dualism in explaining the causal relationship between the mental and the physical. If we continue to think in terms of libertarian free will, those who affirm property dualism maintain that an exercising of the mental power to choose, a power that is had by a physical body, causally produces a physical effect in that body. But how does this causal interaction occur? Not surprisingly, one can search literature written by property dualists and not find an explanation of mental-to-physical causal interaction. Property dualists have

nothing more to say about this issue than substance dualists. However, if the inability of the substance dualist to say anything more informative about mental-to-physical causation than “It occurs” is a reason for rejecting substance dualism, then it is hard to see why the property dualist’s inability to say anything more informative about mental-to-physical causation than “It occurs” is not a reason for rejecting property dualism.

## Section VI

I conclude that in terms of the concerns of this paper, there is no reason to maintain that we do not have libertarian free will. There might be other considerations that can be raised against the reality of libertarian freedom. If there are and they prove no more persuasive than those addressed in this paper, then a belief in libertarian free will remains argumentatively unscathed.



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