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THE 'NATURAL' IN METHODOLOGICAL NATURALISM

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A common assumption about how to do science is that it requires methodological naturalism. However, specifying what natural means is not as easy as it initially appears. In this paper, I examine the validity of methodological naturalism in light of the various ways by which the term 'natural' can be understood: a) natural as material, b) natural as physical, and c) natural as created by God. One major reason that methodological naturalism has currently taken center stage is that it is utilized to criticize the scientific legitimacy of Intelligent Design theory. Thus, when relevant, these different understandings of what natural means are examined in light of how successful they are in precluding the theory of intelligent design from becoming a legitimate scientific theory. I conclude by noting that none of these various meanings of natural, when deployed in support of methodological naturalism, are successful in regarding ID theory as unscientific.

Keywords: Hempel's dilemma, Intelligent Design theory, materialism, methodological naturalism, physicalism

INTRODUCTION

One typical interpretation of methodological naturalism is this: only natural explanations are allowed in science. Michael Bradie (2009, 126) captures this form of methodological naturalism succinctly by defining it to mean "the view that the only legitimate elements of the explanation of natural phenomena must appeal only to natural processes, natural laws, and natural regularities." Keith B. Miller (2009, 117) defines methodological naturalism as a self-limitation of science in which "scientists seek to understand observations of the natural world only in terms of natural cause-and-effect processes." Supernatural beings, whether God, angels, or demons, are not the kind of entities that science invokes as a legitimate explanation. However, this does not mean that science denies the reality of the supernatural; it only means that science does not say anything about it.

The methodological naturalist, however, has an important task to accomplish: to define what it means to be natural. Obviously, it would not make sense to make an assumption of methodological naturalism if being natural is too ambiguous to be a working presupposition. Without a clear line that separates a natural entity from a non-natural one, the original scope of methodological naturalism would expand so much as to make it ultimately empty. Without any clear sense of what it means to be natural, the whole project of methodological naturalism is undermined.

Before proceeding, it would be more helpful to give a brief introduction of Intelligent Design (ID) theory in order to see how it connects to the issue of whether methodological naturalism is a good working methodology in science. ID theory is a new research program in science, especially in biology, that purports to provide a rival view to the theory of evolution. Evolutionary theory provides a purely naturalistic explanation of how biological organisms came to be, and there are two major mechanisms for evolution: random selection and genetic mutation. Through these two mechanisms, no agency is required for most biological organisms to exist, or if an agency is supposed (which is the view of theistic evolution), then its role is superfluous. What ID theory purports to show is that there are facts in biology in which the mechanisms of evolution are inadequate as an explanation. Consider the notion of irreducible complexity, made popular by a pioneering ID proponent and molecular biologist, Michael J. Behe. In his book, Behe (1996) attempts to show that irreducibly complex systems in biology are difficult to explain within the Darwinian evolutionary framework, and this difficulty is admitted even by Darwin himself, stating "[i]f it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down. But I can find out no such case" (Darwin 1859, 158). Behe accepted Darwin's challenge and gave a number of examples of irreducibly complex biochemical systems in the cell: the eukaryotic cilium, the intracellular transport system, and his most famous example, the bacterial flagellum. This notion of irreducible complexity, along with Behe's empirical evidence, provoked spirited debates among scientists, especially those who vigorously disagree with Behe, which led him (2020) to eventually put forth another book that compiles his previous responses to these critics.

Behe is a major figure in ID theory, but there are others who have published works defending and discussing the scientific merits of the theory: mathematician William Dembski, philosopher of science Stephen Meyer, biologist Jonathan Wells, and a host of others. Aside from their academic credentials, their works also purport to be scientific: they are based on and cite empirical evidence from the scientific literature. Thus, ID theory, as it is advanced by its proponents, has many of the hallmarks of a scientific theory, and it would be misleading to characterize it as a form of creationism, as some critics (Forrest and Gross, 2003; Pennock, 2001) have proposed.

It is, therefore, unsurprising that much of the scholarly debate surrounding the theory is focused on the question of whether it is even science to begin with. What bothers these scientific gatekeepers is mostly the fact that ID theory implies an intelligent agency to explain facts in chemistry and biology, and this implication borders on religion. They are reticent to entertain such a theory since science, they believe, is supposed to be naturalistic. The supposed inherent marriage of science and naturalism led many naturalistically inclined scientists to assume that methodological naturalism is a necessary presupposition

in science. Thus, when Intelligent Design theory surfaced into the public scene during the 1990s, one of the debates reinvigorated by it was the demarcation problem: what should and should not count as science? This is where methodological naturalism comes in handy, especially for the vigorous critics of ID theory, since it provides one supposedly clear way to demarcate science from nonscience in that anything invoking God or supernatural agents cannot be scientific. If it can be successfully shown that methodological naturalism is an indispensable methodology in science, then ID theory, regardless of how it regards itself, can never be a science and, therefore, does not deserve the attention of scientists.

With these in mind, this paper is a critical examination of methodological naturalism, especially on the aspect of how the term 'natural' can be understood in the context of methodological naturalism. I will look at three understandings of natural: a) natural as material, b) natural as physical, and c) natural as created by God, and examine whether each of these different understandings of natural under methodological naturalism is successful in judging ID theory as being unscientific. I argue that they are not.

NATURAL AS MATERIAL

There are many ways by which the methodological naturalist can delineate natural from anything non-natural. In this paper, we will look at three of them. One sense by which to understand natural is for it to mean 'anything material.' This would imply that methodological naturalism and methodological materialism are one and the same thing. At first glance, this view is very intuitive. After all, when scientists work in their laboratories---performing experiments, testing hypotheses, and observing results, among many others—the objective is often intertwined with the general scientific objective of understanding matter in its various manifestations and properties. Moreover, because of this general focus on matter, humanity, through the help of science, is now able to manipulate matter in various ways.

However, this understanding of what natural is raises a further question: what does it mean for something to be material? One intuitive understanding of matter is anything that occupies space. This is congenial so far as it goes, and it has been found effective for a large part of the history of scientific inquiry. But, further scientific discoveries, especially after Newton, proved that methodological materialism is not enough to capture the scientific sophistication of reality. Ironically, it is developments in physics that put materialism on shaky grounds. As Robin Gordon Brown and James Ladyman (2019, 86) noted, scientific inquiry into the nature of light introduced such concepts as solid ether, which "defies understanding in terms of ordinary matter… [and] permeates all of space and supports the wavelike propagation of light, and other waves, at a finite velocity". Like the solid ether, the concept of field, first introduced by Michael Faraday, is also a challenge for traditional materialism because, as Brown and Ladyman noted (2019, 85), it is "somehow a medium but not quite material". And because of the discovery of radioactivity and the rise of quantum theory, the old understanding of what matter is has to be abandoned. They (2019, 87) further noted, "Matter in the sense of extended stuff that takes up space like the familiar solid objects we see around us is, according to physics, not ultimately solid at all but mostly empty space." A similar observation is noted by Tim Crane and D. H. Mellor (1995, 69), stating that while materialism sees matter as solid,

inert, impenetrable and conserved, and to interact deterministically and only on contact, "the 'matter' of modern physics is not all solid, or inert, or impenetrable, or conserved; and it interacts indeterministically and arguably sometimes at a distance."

More so, quantum mechanics is unique in the history of science in that it challenges the assumption of materialism that it can provide a single account of what kinds of substances comprise the natural world. As Peter J. Lewis (2016, 23) opines, "It [quantum mechanics] is a theory in which we have no idea what we are talking about because we have no idea what (if anything) the basic mathematical structures of the theory represent." Ontological materialism and its corollary concept, methodological materialism, eventually become outmoded as a framework or methodology for understanding physical reality. With the explosive growth in how we scientifically understand the world, the understanding of matter as that which occupies space has been indispensable for a long time but is now no longer sufficient to capture the sophistication of physical reality, especially at the quantum level.

In order to capture the wide-range but still largely incomprehensible aspects of physical reality as recognized by quantum physics, the methodological naturalist, if she is committed to the deliverances of science, can no longer be curtailed by a pre-Newtonian understanding of matter but must show respect to physics as it currently stands, however metaphysically precarious it might happen to be. Thus, a more robust form of methodological naturalism is one that understands natural to refer to anything that is recognized by physics. To that, we now turn.

NATURAL AS PHYSICAL

If "the physicalist is the materialist who has learnt the lessons of twentieth-century physics," as Brown and Ladyman (2019, 121) describe it, then a better option for the methodological naturalist is to be a methodological physicalist. But similar to the earlier challenge to materialism, the methodological physicalist needs to provide a philosophically defensible definition of what 'physical' means. The ineluctable turn from materialism to physicalism provides a straightforward answer: physical is whatever physics posits as an entity. This strategy provides the advantage of recognizing the discoveries of quantum physics alongside the laws that are at work within it.

However, while it avoids many of the problems linked with materialism, this strategy remains problematic since it is subject to what philosophers call "Hempel's dilemma" (Hempel, 1980, 194-195). This dilemma scrutinizes the main claim of physicalism, the metaphysical view that the only things that exist are mere physical things. The dilemma can be restated to scrutinize whether methodological physicalism is a meaningful scientific methodology. The dilemma is as follows: If one takes "physical" to describe entities that are recognized by current physics, then the definition of *physical is whatever physics posits as an entity* will certainly be false since it is guaranteed that current physics does not have all the information about the most fundamental constituents of reality. But if "physical" is a description of those entities that will be recognized by the ideal physics in its most complete form, then the definition of *physical is whatever physics posits as an entity* will be empty because we have little idea what that ideal physics will reveal.

However, it is not our concern to examine the plausibility of physicalism as a metaphysical theory but only to parse out the different conceptions of the physical based on those who defend physicalism. This distinction is in order since the effectiveness of methodological physicalism as a scientific methodology does not rely on physicalism being true. Since Hempel's dilemma accentuates the urgency of adequately characterizing the physical that avoids either necessary falsity (first horn of the dilemma) or emptiness (second horn of the dilemma), it is a good starting point to see what physicalists advance as answers, although some caveats are in order. First, our concern here is not to examine the plausibility of these conceptions of the physical in avoiding the negative implications of Hempel's dilemma but rather to examine these conceptions as to whether they are sufficient enough to preclude certain controversial theories (such as Intelligent Design theory) from becoming scientific. Secondly, as noted by Crane and Mellor (1995, 69), a core commitment of physicalism is its theoretical ties to physics, whether of the current or ideal variety, but sciences such as biochemistry, molecular engineering, and neurophysiology are also physical sciences. Thus, if methodological physicalism is inadequate to prevent the stride of Intelligent Design theory in molecular biology from becoming scientific, it is not because methodological physicalism is only limited to physics and does not apply to molecular biology.

J. L. Dowell's Account of the Physical

One prominent account of the physical comes from J. L. Dowell (2006, 38), who ties it to "a theory that has the hallmarks of a scientific theory and has the subject matter distinctive of physics." So, whatever entity is recognized by a theory that has the hallmarks of being scientific and whose subject matter is distinctive of physics is a physical entity. But what are the hallmarks of a scientific theory? Dowell gave four hallmarks of scientific theory that she (2006, 38-39) considers to be pretty uncontroversial:

(1) The inclusion of a set of explanatory hypotheses from which empirically testable implications can be derived. (The explanations these hypotheses provide may be either metaphysical or nomic.)
(2) Confirmation by the obtaining of a number and variety of the test-implications of its explanatory hypotheses.
(3) The provision of a unified explanation of a variety of empirical generalizations. The theory as a whole provides a unified explanation of the empirical generalizations that are among its testable implications.
(4) Additional empirical support by its fit with what is antecedently known and independently observable.

Now, given these characteristics, would ID theory be scientific? It seems that it would be. Consider (1). Despite the varieties in their claims, ID theorists are united by a single overarching proposition: there are signs of intelligence in nature. Throughout the years, ID theorists have introduced explanatory hypotheses based solely on the idea that certain facts of nature display signs of being intelligently designed. One such hypothesis is proving that the so-called junk DNA, that is, DNA that does not code for proteins, is

functional. The longstanding assumption of molecular biologists and other scientists working under the Darwinian paradigm is that much of our DNA contains no function at all, an assumption that is now increasingly being found to be unsubstantiated, as documented by Jonathan Wells (2011), an ID theory proponent, in his book with hundreds of peer-reviewed studies showing that this so-called junk DNA is not so junk after all. Aside from Wells, there is also virologist Nessa Carey (2015)—not in any way associated with ID theory—who also documented the discovered functions of so-called junk DNA.

Interestingly, many of the explanatory hypotheses advanced by ID theorists are rooted in providing a scientific explanation to a phenomenon in the distant past, in much the same way that Darwin's theory of evolution provides a scientific, albeit a largely naturalistic, explanation to our own evolutionary history, which according to the theory began billion years ago. For this reason, ID theory and the theory of evolution both provide hypotheses with a historical nature in contrast to hypotheses advanced in physics, which are experimental rather than historical. Thus, we need not be too stringent to require (in line with the first three hallmarks in Dowell's list) that for every explanatory hypothesis of a theory, its empirically testable implications are always tested for that theory to be scientific. While there are testable implications for explanatory hypotheses provided by either ID theory or the Darwinian theory of evolution, it is likely unrealistic to test many of those implications since the environmental parameters required to make the test successful are absent. As Carol E. Cleland (2002, 480) explained, "[T]he hypotheses of prototypical historical science differ from those of classical experimental science insofar as they are concerned with event-tokens instead of regularities among event-types."

Moreover, in the case of event-tokens it is overwhelmingly difficult, if not humanly impossible, to replicate them, given all the environmental and physical factors at play that brought them about. Consider the case of the Cambrian explosion, a historical phenomenon that occurred about 530 million years ago. What is scientifically interesting about this event is that it runs contrary to what Charles Darwin originally had in mind, which is supposed to be a gradual evolution of species from the first life forms. So if it is empirically implied according to the Darwinian theory that for new life forms to exist, it must have evolved from lower life forms, then one can test the Darwinian hypothesis by searching for transitional fossils that would explain the sudden biological complexity of animal life forms found in the Cambrian explosion. More so, as a rival theory to Darwinism, ID theory posits that the biological complexity of life forms in the Cambrian explosion is better explained as a product of intelligent agency rather than of a blind process involving random selection and genetic mutation, something that Stephen Meyer (2013) has defended at great lengths.

But such tests, either of ID theory or Darwinism, are unlike the tests done in physics, the goal of which is to prove hypotheses postulating regularities among event-types. Such abrupt appearances of new life forms in Earth's evolutionary history, like that of the Cambrian explosion, are not something we witness regularly or every few or so years. It is also not yet technologically possible to create new life forms in an artificial setting to replicate any candidate cause. So, while test-implications are not necessarily missing in historical cases such as the Cambrian explosion, the goal of historical research is to prove hypotheses postulating the best explanation or sets of explanations for certain historical events whose nature can never be replicated in a lab. As Carol E. Cleland (2002, 480) notes,

"Instead of inferring test implications from a target hypothesis and performing a series of experiments, historical scientists focus their attention on formulating mutually exclusive hypotheses and hunting for evidentiary traces to discriminate among them."

So, going back to our initial discussion of what physical means, theories such as ID theory and the theory of evolution pass the first hallmark of a scientific theory. How about (2)? As Dowell (2006, 39) explains, for any testable implication of a theory, "one can test each hypothesis in the usual way, i.e., by the observation of instances of the general implication." We have already noted that while test-implications for theories in historical research are for the most part, not technically impossible, it is almost always impractical to observe those test-implications. What kind of observation is needed to see an instance of the theory of evolution? Since it is an overarching theory that attempts to explain how every variety of life emerges out of the most basic life forms, the scientist needs millions upon millions of years to observe such an instance. This is one aspect where ID theory diverges from the theory of evolution since, unlike the blind process of random selection and genetic mutation, which requires millions of years to observe, it is not difficult to observe instances of intelligent agents designing things from computer programmers to inventors to engineers. While there is no case of scientists who have observed an intelligent designer (the one invoked by ID theory) creating those supposedly designed things in nature, the fact that we can observe intelligent agents creating things similar to how, according to ID theory, the intelligent designer designed things in nature, shows that ID theory can appeal to our universal experience of intelligent design while there is hardly a kind of uniform experience of random selection and genetic mutation for evolutionary theory.

In the case of (3), both ID theory and the Darwinian theory of evolution provide, as Dowell (2006, 39) noted, "a unified explanation of the empirical generalizations that are among its testable implications." For ID theory, the main explanation is that things that look designed in nature are actually designed by an intelligent designer. Throughout the years, ID theorists such as Michael Behe (1996) and Stephen Meyer (2006, 374) have appealed to certain concepts such as "irreducible complexity" or "complex specified information" in order to specify in empirical, and even mathematical, terms what it means for a certain thing to be intelligently designed. These core concepts are also where empirical generalizations based on the theory are derived. The Darwinian theory of evolution also has a unified explanation: things that look designed in nature are actually products of a long blind process of random selection and genetic mutation.

Finally, a theory that fits with (4) says Dowell (2006, 39), "receives independent support from other well-confirmed theories and observations." In this regard, ID theory fits well with the well-confirmed observation that things that appear designed are generally so because they are, in fact, made by intelligent designers. This is not the case with the Darwinian theory of evolution. It is not antecedently known that the combination of chance and necessity through the mechanism of random selection and genetic mutation can bring about things in nature that, at first glance, look designed. So it seems that with (4), ID theory bears the hallmark of a scientific theory more than evolutionary theory does.

The above discussion seems to entail that entities posited by ID theory would be physical since they bear the four hallmarks of a scientific theory. But Dowell (2006, 39) further explained that for a property to be physical, it is not enough that "a property's

instantiations are merely compatible with events explained by the ideal and complete physical theory." Rather, as she (2006, 39) noted: "[A] property must be well-integrated into the most complete and unified explanation possible for the relatively most basic occupants of space-time. In order to be so integrated, its behavior must be highly regular." Highly regular seems to imply lawlike such that if any entity is physical, its behavior must be capable of being subsumed under a law of nature, whether presently recognized or not. But if ID theory posits the existence of an intelligent agency with such nature that its behavior is not determined by any law of nature, then ID theory violates methodological physicalism and is, therefore, not science.

Interestingly, Dowell anticipated the possibility of miracle-performing angels and its implication to her account of physicalism. The positing of such entities has some parallel to the Intelligent Designer posited by ID theory as a cause of intelligent designs in nature, and so her response to such possibility has close relevance as to whether methodological physicalism is sufficient to preclude ID theory from being scientific. Now, Dowell introduced the possibility of such angels to spell out the triviality objection that her account of the physical does not necessarily preclude the possibility of such entities when it clearly should. Her (2006, 41) response is to explicate why she thinks that it's highly unlikely for our ideal physical theory to posit such entities, and that is because "[a] *miracle*-performing angel is an entity whose acts are by definition incapable in principle of being fit into a pattern of explanation characteristic of scientific theories." But if, as Dowell (2006, 41) noted, those angels are understood in the mundane sense of "angels stripped of their miraculous powers and governed by the same laws everything else is," then they can appear in whatever ideal physical theories we have. In other words, there is nothing about those angels that stop them from being characterized as physical.

So, in the case of ID theory, should we understand the Intelligent Designer more as a miracle-performing angel or angel in the mundane sense? What we need to understand about ID theory and what ID theorists also constantly clarify is that the theory is modest in terms of identifying the identity and nature of the designer (except for the fact that it is an intelligent agent). As Michael Behe (1996, 197) noted, "The inference to design can be held with the firmness that is possible in this world, without knowing anything about the designer." William Dembski (1998, 42) concurs with Behe: "[D]esign theorists recognize that the nature, moral character and purposes of this intelligence lie beyond the competence of science and must be left to religion and philosophy." On the one hand, if it is an intelligent designer in the mundane sense, then there is nothing about positing it that makes the theory unscientific. It would be a case of methodological physicalism that does not in any way preclude ID theory from counting as science. On the other hand, if the intelligent designer is a miracle-performing entity, then it would not be physical, and ID theory would be regarded as unscientific by methodological physicalism. But there is no reason to think that an act of bringing about intelligently designed things is the same as performing a miracle. After all, it is common knowledge to witness human designers design things from mansions to computer programs to spaceships, but we do not call those actions miraculous.

When humans act as intelligent agents, their actions are within the confines of natural law. So when the Intelligent Designer of ID theory produces something that is intelligently designed, there is no reason to think that its action violates any kind of natural law. A critic might retort that the Intelligent Designer of ID theory cannot be physical since

it is an intelligent agent, and agency requires a mental life. But on Dowell's (2006, 27) account, there is nothing about "our complete and ideal scientific theory of our world's relatively fundamental elements that rule out that some mental properties are among those posits." So, it seems like methodological physicalism on account of Dowell's concept of the physical is not sufficient to preclude ID theory from being scientific. In contrast, there is another account of the physical, which characterizes it as fundamentally non-mental. To that, we now turn.

Jessica Wilson's Account of the Physical

Like Dowell's, Jessica Wilson's account of the physical directly attempts to address the problems posed by Hempel's dilemma. But unlike Dowell's, Wilson's account does not hand all authority to physics in determining what is physical. She (2006, 69) appeals to the fact that

> …physicalism is the descendant of materialism; and materialism is not only a foundationalist thesis but an anti-dualist one, in that mentality – typically understood in terms of the two traditional 'marks of the mental' – qualitative experience and intentionality – is supposed not to exist at the (relatively fundamental) foundations.

Physicalism is, first and foremost, a metaphysical theory, and Wilson's (2006, 70) account of the physical has the backing of how the physical has been generally characterized throughout the history of philosophy. Aside from the characterization that the physical is whatever is recognized by fundamental physics, central to Wilson's account is what she calls the No Fundamental Mentality (NFM) constraint, which means that anything that either possesses or bestows mentality cannot be physical. If methodological physicalism is based on Wilson's account of the physical, then it is clear that it would judge ID theory as unscientific since its core tenet involves the appeal to intelligent agency, which by virtue of its nature as an agent inherently implies a mental life.

But this is where the parallel between physics and other sciences break down since there are some sciences, such as psychology and economics, which take the mental lives of human beings as central to their disciplines. These disciplines would not only be impoverished but would be intellectually dubious if they did not recognize that people have thoughts, ideas, and beliefs that are irreducibly mental, and those mental entities are central to people's actions and decision-making processes. There are important implications that arise from this.

First of all, how should physicalism treat these mental entities? It is clear that things like ideas, propositions, and concepts are not physical entities. In fact, the whole process of reasoning itself, as it is something that occurs within the mind, does not have anything with it that can be considered physical since nothing about it consists of entities such as atoms and protons. But interestingly, ideas, specifically scientific ones, are what drive scientific progress. Consider the nature of numbers: as Angus Menuge (2004, 206) remarked, "numbers, sets, and so forth, are natural objects, having no location in space and time; yet they are ineliminable from science." It is impossible to imagine science

progressing without it making use of numbers in some way. The fact that these nonphysical entities exist is a problem then for physicalism. One solution for the physicalist is reductive physicalism, the view that these mental entities are ultimately reducible to the physical. But what does this reduction metaphysically amount to? There seems to be nothing about the physical world that dictates the nature of these entities or how these entities are supposed to interact. More so, these are not the kind of entities that we expect to causally interact with the physical world. Finally, some of their fundamental qualities give us reason to think that these mental entities are not reducible to whatever objects there are in the universe. For instance, the existence of the whole universe is contingent, but the existence of at least some of these mental entities, such as numbers and principles of logic, is necessary.

However, it is important to note several things about the existence of such mental entities in connection to our discussion of methodological naturalism. First, the qualification of being mental does not mean that these things are ultimately subjective; rather, what is being pointed out is that our access to these entities seems to be direct from reality to our minds. This means that although they are mental entities, this does not entail that they are just purely mental and do not have a mind-independent reality. There would still be numbers if no human minds existed. Given that, it is their extra-mental reality that makes such entities problematic for physicalism. More so, these entities are introduced to undermine physicalism, methodological or otherwise, and not necessarily to advance ID theory. While the weakening of physicalism makes ID theory more attractive, more scientific work is required to show that ID theory is worthy of sustained scientific attention.

Now, if mental entities are reducible to the physical and any physical entity is subject to the laws of physics, then mental entities are also under the laws of physics. But this leads to the unpalatable implication that what determines the intellectual trajectory of science is not scientists doing their job (by following the scientific method, weighing the evidence, testing hypothesis, etc.) but the accidental collocation of atoms and subatomic particles occurring in the scientists' brains to which they have no control over. This imagined scenario would, of course, spell the death knell of science. For all those complaining that abandoning methodological naturalism is to stop the progress of science, it seems that it is the metaphysical presupposition of methodological naturalism (understood here to mean metaphysical physicalism) that actually undermines the intellectual foundations of science.

Finally, it seems that the physicalist framework has it backward. In our experience of the world, it is not the mental reality that is physically reductive, but rather, it is only through the mental that we have an access to the physical. Without the first-person standpoint, there is no way to even make sense of the world. There is nothing that would answer the description of the world since the world is only comprehensible if an experience of *what the world is like* is accessible to some conscious person. It is, of course, true that science aims to study the world through an impartial, third-person point of view, but this does not in any way prove that this impartial standpoint is the only thing that exists or matters. In fact, scientists themselves start out with the subjective feel of their own consciousness of the world before they can even proceed to conduct their scientific investigations objectively. This should not be controversial since scientists themselves are

agents, and the agency requires access to one's own consciousness, which no one else, except the agent himself, has access to.

The points being made above converge on the notion that science, regardless of its future directions, cannot do away with the reality of the mental. So, suppose proponents of methodological physicalism (using Wilson's account of the physical) are insistent on applying it to ID theory. In that case, they may be successful in depriving the theory of scientific legitimacy but only at the price of permanently damaging fundamental intellectual presuppositions of science itself.

NATURAL AS CREATED BY GOD

Now that we have evaluated materialism and physicalism as two ways of defining natural and found those two definitions wanting, let us look at an attempt to define the natural which significantly deviates from those two definitions above. Hans Halvorson suggested looking at the meaning of the natural not in terms of what the fundamental constituents of reality may be (as in the case of materialism and physicalism) but in terms of a thing's relation to God. In his (2016, 139) simple definition, "an entity *x* is natural just in case *x* was created by God." This means that methodological naturalism limits scientific explanation to anything created by God but not God Himself. It should be clear that Halvorson (2016, 147) is not motivated by anything like metaphysical naturalism but, in fact, claims that "Methodological naturalism…finds a highly plausible motivation in supernatural theism." More so, he (2016, 142) is fully aware of the explicitly theistic context from which methodological naturalism arose. However, Halvorson (2016, 142) thinks that even if someone is a theist, he should not think that "God and *God's activities* are a perfectly legitimate subject for scientific inquiry." He sees the objective of natural science as linked to identifying the blueprint of the universe, and since a building's blueprint need not refer to the building's architect to be understood, there is similarly no reason for natural science to refer to God.

Halvorson's key idea behind methodological naturalism is what he (2016, 137) calls AIM, the idea that "science aims to explain a wide range of phenomena by unifying them under general schemata." As a consequence of AIM, science does not aim to discover all sorts of truth, but only those sorts of truth that can be subsumed under a general systematic framework. Then, Halvorson (2016, 143) suggests two paradigm cases of general schemata: (1) statements of natural law and (2) mathematical models. Science, therefore, aims to discover natural laws and also construct mathematical models that represent its object of study. Since miracles, understood in the strict sense, are divine actions that go beyond the laws of nature, they cannot be subsumed under general schemata (For a different view, see <redacted for blind review>). Also, since miracles are products of the free divine mind of God, there is no possible mathematical model that would capture its reality. The main distinction for Halvorson (2016, 144) is that the whole of natural reality can be represented through mathematical models because "the universe is an artifact, the creation of an intelligent mind." So, to extend the analogy of the building's blueprint, God, in this case, is the engineer, while the blueprint refers to the whole of the natural world.

There are a number of theoretical virtues in Halvorson's view of science, especially his idea of AIM, and I am happy to concur that AIM is indeed an essential role of scientific

inquiry, as Halvorson argued. But I do not see any feature of AIM that necessarily prevents ID theory from being scientific. After all, it is possible to study supposed design in nature in a systematic way; in fact, there is a branch of science called biomimetics that aims to do just that. However, Halvorson's quarrel is not because something is a study of design but because ID theory supposedly attempts to show that irreducibly complex phenomena in nature require God. He (2016, 143) notes that ID theory is committed to the following statement:

(1) For any *x*, if *x* is irreducibly complex, then there must be an intelligent agent *y* that causes *x*.

Halvorson notes further that if (1) is a law of nature, then the variable *y* refers to natural things. Now, ID theorists would not find it problematic, much less withering, if the intelligent designer behind these irreducibly complex phenomena is proven to be natural, that is, a created intelligent agent, according to Halvorson. After all, the main project of ID theory is to show that some things in nature are intelligently designed and not a product of random selection and genetic mutation. There is nothing about ID theory that scientifically requires that it identifies the identity of the designer, whether that be created intelligent agents or God himself.

More so, Halvorson's claim that God cannot be the intelligent designer posited by ID theory does not even follow. His (2016, 143) contention is based on the idea that "God's actions – unlike the actions of any created thing – aren't necessarily governed by the laws of nature." So, if (1) is a law of nature, then God cannot be in any way the cause of irreducibly complex things in nature. But this seems to curtail the power of God over the created universe. After all, for a theist, God can create anything that is logically possible, and irreducibly complex things in nature are logically possible things. More so, while there is nothing about the laws of nature that can necessarily limit God's action, we should find nothing metaphysically suspect about God acting within the confines of natural laws.

Finally, if we look at what ID theorists study, they study the same phenomena that other scientists do: ones that are found in the created world of physical reality. ID theorists and evolutionists differ in their conclusions: while evolutionists point to the blind mechanisms of evolution to explain certain phenomena, ID theorists point to intelligent design. Of course, the conclusion of ID theory has vast metaphysical implications, one of which is that the Intelligent Designer maybe God. But even conceding to that metaphysical consequence, ID theorists remain within the confines of science by focusing their study on the phenomenon of the physical world. So if methodological naturalism understands 'natural' to mean created by God, as suggested by Halvorson, there is nothing about that definition that stops ID theorists from doing what every scientist does: doing science.

CONCLUSION

When Intelligent Design theory first came onto the scientific scene, many of its criticisms boiled down to how methodological naturalism had supposedly defeated it before it even proved itself a science. In this paper, I show why this proclamation is premature. Since the 'natural' in methodological naturalism is ambiguous and can take on different meanings, defenders of methodological naturalism need to be clear on what exactly the term means and how exactly that definition precludes ID theory from becoming

scientific. With that said, this paper has a modest aim. It does not seek to disprove any value there is in methodological naturalism, especially its aspect of not treating God as a scientific entity. This paper also does not attempt to validate any scientific claims of ID theory. While some of the theory's predictions and explanations are laid out when relevant, the full-blown scientific merits of the theory will have to be assessed independently and in more detail than is required here. The main aim of the paper is to explore three meanings of natural that I think are in accord with what defenders of methodological naturalism mean when they talk about the term. Eventually, all of these meanings—natural as material, natural as physical, natural as created by God—are found to be unpersuasive in preventing ID theory from being a science. With this philosophical baggage out of the way, ID theorists have a more urgent task to do: to show that the science they are doing is not only metaphysically consequential but will be of theoretical and practical value not only to the scientific community but to the wider world at large.

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