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Scientific Methods and Sacred Matters: On Methodological Naturalism, Divine Agency, and Christians in Science

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This article critically analyzes the debate surrounding methodological naturalism (MN) within the context of scientific inquiry, focusing on the arguments put forth by Andrew Torrance on the one hand and John Perry and Sarah Lane Ritchie on the other. It begins with the medical mystery known as the spontaneous remission of cancer—sometimes identified as a "miracle"—posing the question of how Christian medical researchers should approach this anomaly. Thereafter, I consider how Torrance's rejection of MN, due to its perceived conflict with faith, would expect the Christian scientist to respond. Conversely, Perry and Ritchie defend MN, emphasizing its importance in maintaining scientific rigor and avoiding a "God of the gaps" approach. Subsequently, I demonstrate how both science and MN are conceived of differently between the two parties, indicating that this is primarily a semantic debate. Finally, after examining Torrance's response to Perry and Ritchie, I propose a more nuanced approach, advocating for methodological flexibility wherein the nature of the question being asked determines the appropriate method one should employ.

Introduction

The world is a strange place, but not as strange as it was once believed to be. In the not-too-distant past, people were relatively prone to ascribe various phenomena to supernatural forces or divine action. This was especially the case with health-related phenomena (such as mental illnesses, diseases, and epidemics), celestial events (like eclipses, comets, and meteor showers), and atmospheric occurrences (like droughts, floods, and lightning). Beliefs along these lines are evidenced, in varying degrees, by many of the writers and redactors of the texts that now compose the Hebrew Bible, the New Testament, and the Qur'ān. However, such occurrences, previously deemed supernatural or miraculous, have now been accounted for using scientific methods and natural explanations. Researchers in psychiatry, epidemiology, astronomy, and meteorology have made significant strides in uncovering the natural mechanisms and physical processes via which all of the aforementioned can be explained in a scientific fashion.

This pattern of "natural" explanations displacing prior "supernatural" ones does not apply only to beliefs held by ancient peoples or in religious texts. One oft-referenced example can be seen by appeal to Isaac Newton himself (on this, cf. Perry and Ritchie 2018, 1076–77; Donahue 2024, 14), who, while formulating the laws of motion and gravity, recognized that the gravitational interactions between planets (on his model) could lead to irregularities in their orbits around the sun over time. He speculated that these irregularities might occasionally require divine intervention to correct, lest their orbits be significantly disrupted and altered. Such theological speculation eventually proved to be unnecessary, as Pierre-Simon Laplace and other mathematicians using more advanced mathematical theorems demonstrated that these potential irregularities were actually self-correcting, and that the stability of our solar system could be explained without the need for divine intervention.

Cast against this intellectual backdrop, scientists have grown reasonably hesitant to invoke anything supernatural as a scientific explanation for worldly phenomena. Indeed, "[i]t has become standard practice for scientists to avoid the possibility of references to God . . . let alone to the possibility that God is actively involved in the world" (Torrance, 2017, 691). Among those who adopted such hesitancy completely, this eventually evolved into one of two distinct postures toward scientific study: (P1) the practical guideline, arrived at inductively in light of examples like those outlined to avoid supernatural hypotheses in the realm of science given their track record of failure in the past; or (P2) the normative claim that, strictly speaking, something about the nature of scientific study itself necessarily precludes any appeal to supernatural hypotheses. In both instances, there is thus now "the stipulation . . . to offer explanations only in terms of natural phenomena" (Donahue 2024, 1–2). This stipulation is a constituent feature of what is now referred to as "methodological

naturalism" (hereafter, MN), although, as I discuss, fuller definitions of this term and its purported implications can vary widely.

Be that as it may, Miles Donahue refers to P1 as "provisional methodological naturalism," and P2 as "intrinsic methodological naturalism" (2024, 4). Whereas the latter insists that there is something intrinsic to scientific reasoning that would be thwarted by invoking a supernatural hypothesis, the former simply chooses to avoid such invocations for practical purposes. To be sure, the stipulation of seeking only natural explanations shared by both does not imply or necessitate a commitment to metaphysical naturalism, defined here as "a philosophical perspective that denies the existence of a transcendent God," spiritual beings, and a supernatural realm (de Vries 1986, 389). The key takeaway, though, is that MN has become something of a default posture among most practitioners of contemporary science, regardless of whether it arises from P1 or P2.

Not everyone is convinced this is a good thing. For example, one of my doctoral supervisors, Andrew Torrance (2017), published an article entitled "Should Christians Adopt Methodological Naturalism?" This question, which he answered in the negative, prompted a rejoinder in defense of MN from two of his colleagues at the University of St Andrews, John Perry and Sarah Lane Ritchie (2018). To this rejoinder, Torrance (2018) offered his own response, clarifying and building upon his earlier position.

No doubt, all sorts of underlying assumptions are lurking in the background of these debates, not least concerning what is actually meant by MN. Beyond definitional equivocality, there are also underlying theological assumptions about the existence, nature, and agency of God, metaphysical assumptions about the nature and knowability of reality, and philosophical assumptions about the nature and scope of science. Complicating matters even further, precious few of these assumptions are self-evidently true. The best one can do, therefore, is to be honest about one's biases and presuppositions, clarify terms to the best of one's ability, and communicate charitably about those with whom one disagrees.

Fortunately, charity was on full display in the back-and-forth debate between Torrance on the one hand and Perry and Ritchie on the other. However, analytic clarity was occasionally lacking, and some of their respective motivating theological and metaphysical commitments were not foregrounded as prominently as they could have been. My aim is to help readers better navigate this debate (without personally choosing sides between what I see as a false dichotomy) before proposing my own way forward. To do this, I begin with a real phenomenon—cases of spontaneous and inexplicable remission of cancer—and discuss how both sides of the debate would expect Christian medical scientists researching the phenomenon to handle such a situation. Torrance, as a critic of MN, expects the Christian scientist qua scientist not to renounce the possibility that such an occurrence could be the result of divine agency, even as they continue to investigate the likelihood of natural causes.

Perry and Ritchie, as proponents of MN, expect the Christian scientist to explore every possible empirical avenue to explain such an occurrence through natural processes, even if they believe qua faith that it could in principle have been caused by the miraculous work of a divine being.

This discussion not only magnifies the differences in emphasis between the two parties to this debate but also illuminates how they occasionally talk past one another and misconstrue the opposing positions. As I discuss, much of this debate actually boils down to mere semantics—disagreements (or misunderstandings) about how words should be used—rather than disagreements about substance. Following this analysis, I then propose my own way forward, which is premised upon the notion that one's method should be dependent upon the question that is being asked. Against methodological uniformity in the natural sciences (whether Torrance's rejection of MN or Perry and Ritchie's defense of it), I propose methodological flexibility in which the research question asked determines the appropriate method to employ. Instead of asking, "How should we study *x* as Christians?"—resulting in endless throat-clearing debates about what method should be normative for Christian scholarship—it should instead more modestly be asked, "If we were to study *x* from [some perspective], what, if anything, can we conclude, and how should we assess the nature and truth-value of the conclusions from the perspective of faith?"

Framing matters this way draws upon Karl Barth's insight that revelation can never become a possession that is wielded into a hermeneutical or methodological system. The non-givenness of God and divine action requires a radical humility, for the living God cannot be contained within, or be straightforwardly accessible to, any methodology. Not all methods are created equal, but no single method is the "right" one for a properly theological understanding of the universe. As such, whatever method is used, resources of faith will always need to be drawn upon in order to assess the nature and truth-value of the conclusions reached. But before getting too far ahead of myself, let's dive right in.

The Spontaneous and Inexplicable Remission of Cancer

On rare occasions, medical experts have observed cancer patients undergoing spontaneous and inexplicable cancer remission, whereby malignant tumors are cured without targeted therapy or treatments (Radha and Lopus 2021). The frequency of such remission is exceptionally low, estimated at about one in 60,000 to 100,000 cancer cases (Dobosz and Dzieciatkowski 2019; Everson and Cole 1956; Jessy 2011). While certain cancers (e.g., melanomas, lymphomas, and leukemias) have shown a higher frequency of spontaneous remission (hereafter, SR) in comparison with other cancer types, the underlying reasons for remission itself remain largely speculative, despite some promising evidence about how an infection-induced immune response has been detected in several instances

of SR (Radha and Lopus 2021, 3–4, 7–8). Be that as it may, the occurrence of SR is occasionally explained (usually outside of the scientific community) as a "miracle" (Robson 2015). Some patients and their family members proclaim even more confidently that "God" (but which god and which conception of that god are they referring to?) has answered their prayers and directly performed a miracle. The question then arises: How should a Christian medical researcher, or any medical researcher for that matter, approach such a claim and the anomaly upon which it rests?

In fact, let's be even more precise. Consider the following hypothetical, yet entirely plausible, scenario. A Christian medical professional and researcher (who happens to believe in the bodily resurrection of Jesus) diagnoses a patient with terminal cancer, which is subsequently independently confirmed by other specialists. In light of this news, the patient and their family make the difficult decision to forgo treatment, opting instead for prayer and palliative care should the time come. During a routine checkup several months later, it is observed that the patient's cancer has undergone SR. The tumor, previously deemed incurable, has inexplicably regressed without any medical intervention or any of the accompanying factors that have been speculated to contribute to SR.

This would rightly be regarded as an anomaly, for it defies the usual expectations of medical science. However, an apparent anomaly—something currently inexplicable within contemporary scientific understanding but in principle able to be explained with further study or advances in science—is conceptually distinct from an actual anomaly or miracle (whether or not such things actually exist). Drawing upon Thomas Aquinas, Perry and Ritchie (2018, 1075) describe the latter as an instance in which "something . . . looks like God 'producing the *effects* of secondary causes without them'." According to Torrance (2017, 693), the existence of actual anomalies, while rare, is nevertheless to be expected on a Christian epistemic basis in which the divine creator of the universe takes on flesh, heals the sick, gives sight to the blind, walks on water, and rises from the dead.[1]

But how can one tell the difference between an apparent anomaly and an actual anomaly (i.e., a miracle)? How can one discern if a particular instance of SR is something currently puzzling but potentially explicable, or if there is simply no purely scientific explanation because divine agency was involved? When faced with this question, Perry and Ritchie (2018, 1078) argue that "it is impossible to empirically distinguish what belongs to which subset." Similarly, Torrance (2017, 697) argues that "it belongs to Christian orthodoxy to affirm that neither God nor God's activity should be seen to be an object of scientific observation, speculation, and experimentation." In other words, both parties to this debate agree that actual anomalies can happen as a result of divine action, and both agree that the tools of science are insufficient to establish that they have. But this begs a question: How, then, should the Christian medical

researcher respond to this particular instance of SR when there is no way of knowing which subset of anomalies it belongs to? This is where the debate over MN comes to the fore.

Torrance's Rejection of Methodological Naturalism

For Torrance, cases of SR are not the sort of occurrences that automatically trigger the conclusion that they might have been caused by God in an exceptional way. In fact, Torrance (2017, 695) is always initially hesitant to "jump to the conclusion that 'God did it'" when faced with some anomalous contemporary phenomenon. Nevertheless, as a result of his conviction that it is possible that God may in fact bring about an instance of SR, Torrance believes this possibility should methodologically impact how a Christian scientist approaches anomalies like the hypothetical case study described in the previous section. Unlike the atheist, who would immediately rule out the possibility that the patient's SR was the result of divine intervention, Torrance (2017, 695) suggests that the Christian scientist should instead "be willing to allow her belief in the possibility of theological explanation to inform her scientific assessment of this occurrence." Torrance, in other words, does not want to rule out the possibility that the anomaly could turn out to be an actual anomaly rather than an apparent anomaly. This is the basis upon which he rejects MN.

As Torrance (2017, 695) argues, "if . . . it [is] *possible* that in any field of enquiry God could have an explanatory significance, then that recognition is inconsistent with MN." Where does the inconsistency emerge? To answer this, it is necessary to survey Torrance's understanding of what MN is, along with what he believes to be necessarily entailed by adopting it.

While recognizing that there are different ways to define MN (cf. Torrance, 2017, 720n3), Torrance (2017, 691) suggests that it is minimally understood as "a method that assumes that the reality of the universe, as it can be accessed by empirical enquiry, is to be explained solely with recourse to natural phenomena." Torrance then proceeds to outline numerous implications he associates with adopting MN. Consider the following claims he makes at various points throughout his article:

> MN's assumptions are "not metaphysically neutral" (Torrance 2017, 717).
>
> MN, if adopted by a Christian, indicates that one is "playing the games of the secular world" (Torrance 2017, 707).
>
> MN plays into "the illusion that there is nothing more to reality than natural phenomena" (Torrance 2017, 715).
>
> MN, if adopted, requires operating under the assumption that "God has nothing to do with the natural order" (Torrance 2017, 703).

> MN is "a methodology that is branded with a philosophy (naturalism), which is incompatible with theism" (Torrance 2017, 697).
>
> MN requires that the Christian "amputate the legs on which she stands so that she can be accommodated by the procrustean bed that is naturalism" (Torrance 2017, 707).
>
> MN "does not allow the Christian scientist qua scientist to recognize miracles as blind spots. MN requires the Christian scientist qua scientist to offer naturalistic explanations" (Torrance 2017, 701).
>
> MN "require[s the Christian scientist] to mis-explain the blind spots" (Torrance 2017, 702).
>
> MN will "bias science . . . in a way that needlessly makes a theory incompatible with theism" (Torrance 2017, 706).
>
> MN "assumes that there is an essential conflict between science and Christianity" (Torrance 2017, 707).
>
> MN "will undermine [a Christian] interpretation of natural history" (Torrance 2017, 701).

Collectively, these claims suggest that Torrance perceives the decision to adopt MN not merely as a commitment to seeking natural hypotheses where possible but also as embracing philosophical presuppositions that fundamentally conflict with Christianity. According to Torrance (2017, 701–02), the decision to adopt MN cannot straightforwardly be decoupled from a philosophical commitment to "natural-*ism*" in which one is required to provide purely "naturalistic explanations" for everything from the origin of the universe to the rise of resurrection faith.

Returning to the case study, then, Torrance believes that the practitioner of MN, if asked about God's potential involvement in the SR, would be forced to reject the possibility that God did it, for MN demands a purely naturalistic explanation. Their assumption, in other words, is that the reality of the universe must be explained only with recourse to natural phenomena. But assuming this, in Torrance's view, "would express a failure to recognize the ultimate truth of the Christian faith and/or a failure to be consistent in one's commitment to the truth" (Torrance 2017, 695). Put another way, Torrance (2017, 696) will not countenance a method in which one is compelled to "make assumptions that are incompatible with . . . Christian assumptions." Even if it is not automatically deemed likely, Christian faith demands that Christians say it is possible that God was the cause of the patient's SR. "For this reason, the Christian scientist has a

duty not only to God but to science itself to discourage a commitment to MN" (Torrance 2017, 718).

Now, to be sure, the possibility of a theological explanation for the SR need not imply the reality that God has in fact miraculously intervened in the life of this previously terminal cancer patient. As Torrance (2017, 695) notes, the Christian medical researcher should never preemptively bring science to a halt and "jump to the conclusion that 'God did it'." In such a situation, the Christian scientist ought to seek to make sense of such an event in "natural terms" if and where possible (Torrance 2017, 695). In fact, Torrance (2017, 693, 694) even goes so far as to say that because "God is transcendent," it must be concluded that divine action "is not discernible by empirical study." This means that Torrance (2017, 693, 694) appeals to theology—"a theological appreciation of human limitations"—in order to identify the scope and limits of scientific study vis-à-vis God: "There are clear theological reasons for the Christian scientist to assume that her research should be characterized by an absence of explicit theological reference. She should recognize that God's activity should not be confused with the regular and immanent processes that characterize the natural world, and which are the subject-matter of normal scientific enquiry."

Here, however, a surface-level tension emerges in Torrance's account. On the one hand, he asks the Christian scientist to remain open to the possibility that God could be the explanatory cause of the patient's SR. On the other hand, he argues that empirical investigation could never coherently arrive at the conclusion that divine agency was in fact the cause of the SR. As such, the Christian scientist should avoid "explicit theological reference" (Torrance 2017, 694). How, then, does this posture of openness substantively impact one's scientific methodology?

As far as I can tell, Torrance (2017, 695) does not actually argue that it does. Indeed, he explicitly states that such openness is not "likely to have a decisive impact on . . . scientific research." He even adds at a later point that his theological argument about excluding reference to divine agency in natural science would "make no external difference to . . . scientific practice" (Torrance 2017, 700). Taken together, these two statements imply that Torrance's rejection of MN is not premised upon an endorsement of an alternative explicitly Christian scientific method that one could appeal to in order to gain special access to divine agency and thereby detect miracles. Rather, he rejects MN because he believes it requires its practitioners to deny the possibility—for the sake of engaging in scientific study—that the God of Christian faith could have been the explanatory cause of the SR. In short, even if Torrance's theologically delineated scope of scientific inquiry means that natural science cannot prove, or even propose, that "God did it," the scientist should nevertheless avoid the conclusion (demanded by Torrance's conception of MN) that there must be a purely natural explanation for the SR. Christians in academia and other

professions should not, in other words, be forced by their secular counterparts to adhere to standards that are in tension with their Christian commitments.[2] Or so Torrance argues.

Perry and Ritchie on the Nature of Scientific Inquiry

Perry and Ritchie tread a starkly different path. Rather than primarily tackling the question of MN head-on, they instead home in on the nature of scientific inquiry itself, along with the manner in which science ought to approach anomalies like those outlined in the previous sections. One of the central threads of their argument is that "epistemology . . . is discipline specific" (Perry and Ritchie 2018, 1073). In other words, each discipline "has its own set of practices, traditions, virtues, and criteria for verification" (Perry and Ritchie 2018, 1071). Furthermore, that which "count[s] as evidence in physics is not necessarily the same for biology, much less in psychology and theology" (Perry and Ritchie 2018, 1071).

In relation to the broader domain of science itself, they argue that scientific inquiry is largely focused upon what "we can know with our senses, that is, empiricism," and as such, "all scientific explanations are limited to empirical explanations" (Perry and Ritchie 2018, 1071, 1073). While their restriction of the natural sciences to empirical explanations alone might be a slight overstatement (cf. Torrance 2018, 1099–100), this general point serves as the context in which their proposed response to anomalies like SR is to be understood.

For Perry and Ritchie, all present-day anomalies—including the aforementioned case of SR—ought to be approached by scientists, regardless of their religious commitments, as potentially apparent anomalies. Even if they believe it may be an actual anomaly, the scientist should not rule out the possibility that it might turn out to be nothing more than a currently puzzling, but ultimately comprehensible, occurrence. So, in the case of a patient's terminal cancer transitioning into inexplicable remission, every scientist ought to "record it as an anomaly, restate [their] preliminary conclusion in the form of a *testable* hypothesis, and await more data. If something seems anomalous right now nothing should compel the careful scientist to render a conclusion in advance of sufficient data. Such a scientist will always *keep digging*" (Perry and Ritchie 2018, 1075).[3]

This is not because of a commitment to atheism or metaphysical naturalism, which denies the very possibility of divine agency or miracles. Rather, it derives from a commitment that there is something inherent in the scientific method that means it "can never say that an observable event has or has not been caused by God" (Perry and Ritchie 2018, 1073). It also derives from a steadfast "focus on the tools of empirical research" that characterize scientific inquiry (Perry and Ritchie 2018, 1075). If such tools are incapable of providing a natural explanation on the basis of the available evidence, the scientist qua scientist

should not, as a purported inference to the best explanation, "posit divine action as a causal factor in anomalous events—but neither [should they] invent a naturalistic explanation in order to preserve an overarching metaphysical naturalist worldview" (Perry and Ritchie 2018, 1075–76). In fact, a "good scientist understands that 'I don't know' or 'I don't know yet' is always a valid answer" (Perry and Ritchie 2018, 1076), and one that is preferable to any "God of the gaps" hypothesis.

In light of this discussion, Perry and Ritchie (2018, 1075) propose, axiomatically, that "all scientists should be methodological naturalists, or something close to it." As they understand it, though, MN does not require its practitioners to say (as Torrance believes) that it is not possible God did it, but it does require them to say that they will be looking for a natural explanation even though it is possible God did it. Perry and Ritchie (2018, 1076, 1075) describe this as a posture "of curiosity and willingness to pursue further research," yet in such a way that it "does not involve an active prohibition on God's activity." Consequently, objections to MN will purportedly "fall away" once "confusion about how the scientific method treats anomalies . . . is cleared up" (Perry and Ritchie 2018, 1084).

Varying Conceptions of Science and Methodological Naturalism

What can be concluded from the foregoing discussion? First and foremost, it becomes immediately clear that Torrance's conception of the nature of scientific inquiry differs fundamentally from that of Perry and Ritchie. What is more, they also have divergent conceptions of the nature and implications of MN. This needs to be spelled out in greater detail.

Because Torrance denies that Christians in science should practice MN, he likewise denies that science is intrinsically committed to MN. As a result, he conceives of scientific inquiry somewhat along the lines presupposed by P1, in which MN may be regarded as a nonessential procedure adopted (unfortunately, in Torrance's view) by many practitioners of science. Perry and Ritchie (2018, 1068), by way of contrast, seem to conceive of scientific inquiry as intrinsically committed to MN: "MN was always the name of the scientific game going as far back as Boyle, Newton, and even Aquinas and his mentor, Albert the Great." This is evidenced further when they seemingly equate MN with "the scientific method" in general, and when they state that rejecting MN would mean "abandon[ing] the scientific method's focus on the empirical toolset" (Perry and Ritchie 2018, 1073, 1084). All this indicates that their conception of scientific inquiry aligns with P2, in which MN is necessitated by either the aims or the methods (or both) of natural science.

There is thus a degree of irony at play here. Upon closer examination, one discovers that the debate is in fact not primarily about what MN is or whether Christians should adopt MN (important though those questions may be). Rather, the logically prior question undergirding both pertains to the nature

of science itself. In my view, this background disagreement is one of the main reasons the two parties end up talking past each other on several occasions. I return to this point in due course.

One might be tempted at this juncture to try to solve this dispute through asking "what is science?" and "what is MN?" Once concrete answers are given, one might then enquire as to whether the proffered definition of science necessarily entails a commitment to MN. If it does, then any argument that Christians should not practice MN (thus defined) would also circuitously claim that Christians should not practice science at all. If it does not, then conceptual space would be created to argue about when, if ever, MN ought to be adopted by Christian scientists.

I, however, have no desire to police language and argue for an essentialist definition of science or MN. Following Larry Laudan (1983), it appears that such efforts to identify a neat delineation between "science" and "non-science" have proven elusive. This problem extends beyond science as well: "Virtually every major term used in philosophical, theological, or cultural discourse shows at least some degree of definitional elusiveness or ambiguity" (McGrath 2016, ch. 1, §3). What is more, David Chalmers (2011, 532) has successfully demonstrated that many disputes pertaining to questions of the form "what is X?" are reducible to mere verbal disputes—that is, disagreements merely about how certain words should be used and nothing more. As such, instead of investing substantial effort into debates about the superiority of one definition over another for specific terms or phrases in the English language, it seems more productive to focus instead on identifying whether and where there are any substantive disputes.

For example, if I were to temporarily set aside the semantic debates about the meanings of "science" and "MN," I could turn my attention to substantive questions such as:

(1) Do the two parties agree that divine action could ever in principle be the explanatory cause of some natural phenomena?
(2) Do the two parties agree that recognizing and properly identifying divine action transcends the scope of empirical study and experimental testing?
(3) Do the two parties agree that the Christian scientist should never, in any discipline, operate under the assumption that God does not exist?
(4) Do the two parties agree that a Christian scientist should avoid claiming, when operating as a scientist, that it is not possible God was the cause of a SR?

Interestingly, when attention is turned to these substantive issues, a great degree of concord is discovered. I have already discussed (1) and (2): on the one hand, both parties agree that it is in principle possible for divine action to be, at least

in part, the explanatory cause of some worldly phenomena. On the other, they likewise agree that the detection of such divine action exceeds the scope of that which may be known through empirical observation, scientific theorizing, and experimentation. Notably, the agreement does not stop there. Regarding (3), it is similarly found that both parties insist it would be inappropriate for Christians to act as if God does not exist—to functionally renounce their faith—when engaging in academic scholarship of any sort. And finally, both parties are crystal clear (4) that a Christian scientist should not—whether in the laboratory, the cancer ward, the classroom, the church, or anywhere else—claim it impossible that divine agency was involved in bringing about a patient's SR. In short, both parties are in full agreement that the core entailments of MN should be avoided at all costs, while faith in the power of God must be clung to at all times.

Given these areas of fundamental agreement, one might question Perry and Ritchie's claim that this debate is "more than semantic" in nature (Perry and Ritchie 2018, 1066). In fact, it seems to me that the disagreement is mostly semantic, boiling down simply to how the terms "science" and "MN" are defined. This comes into sharper focus when Torrance (2017, 720n3) acknowledges that some people "equate MN with scientific enquiry" itself, noting that he of course does not want to argue "against a Christian practicing scientific enquiry." He even adds that "if this is how MN should be defined, [he] would not have a problem with MN" (Torrance 2017, 720n3).

However, if my argument about Perry and Ritchie proves sound, this is precisely how they understand MN (cf. Perry and Ritchie 2018, 1073). For Perry and Ritchie, MN is simply inherent to scientific investigation and explanation. Science's unique tools and criteria for verification have a relatively focused scope, and this scope does not include the ability to adjudicate upon or propose theological hypotheses. MN is not a choice but rather a characteristic of science (as they define it); as such, it should theoretically fall under the umbrella of that which Torrance (2017, 720n3) "would not have a problem with"—especially since they agree with Torrance on points (1–4).

The heart of this dispute, then, revolves around their divergent conceptions of science and MN. From Torrance's discussion, it becomes clear that he construes science in exceptionally broad terms, largely as a comprehensive search for truth (cf. Torrance 2017, 695, in which he draws upon a quote attributed to Einstein), one that is not inherently limited to empirical investigation and experimentation alone, given that it must leave room for the possibility of theological explanation. This genus of science, for Torrance, has at least two species: natural science on the one hand, and theological science on the other (for the latter, cf. Torrance 2019). For Perry and Ritchie, by contrast, science (i.e., the conceptual equivalent of Torrance's natural science) is a distinct disciplinary domain with its own tools, methods, and principles of verification,

all of which necessarily exclude theological hypotheses as an explanatory category (distinguishing it from Torrance's characterization). On the basis of these divergent conceptions of (natural) science, they then construe MN in vastly different ways. Torrance, for his part, argues that the decision to adopt MN entails incorporating the philosophical commitments of naturalism into one's methodology, requiring the practitioner to operate as if God and divine action do not exist. Conversely, Perry and Ritchie argue that MN simply entails a search for natural explanations (where possible) when engaged in the scientific study of natural phenomena. The distinction might be characterized thus:

> MN1: Methodological naturalism understood as the methodology according to which the philosophical entailments of naturalism are assumed.
>
> MN2: Methodological naturalism understood as the methodology according to which one must not propose or adjudicate upon supernatural/metaphysical/theological hypotheses.

Purely for the sake of argument, then, one could theoretically agree with Torrance that Christians should reject MN if it is construed in such a way as to necessitate making naturalistic claims at odds with one's faith (e.g., "it is not possible God caused the SR") while also agreeing with Perry and Ritchie that Christian scientists can affirm MN if it is defined as an intrinsic feature of the aims or methods of science, wherein supernatural explanations are not permitted within the scope of empirical reasoning, theorizing, and experimentation. One could (and I suggest Perry and Ritchie would) rightly reject the appropriateness of Christians using MN1—or at least Torrance's construal of it—and accept, on a question-by-question basis, P2/MN2. Indeed, one could even appeal to Torrance's own theological reasoning in relation to God's transcendence as a reason to accept a theologically delineated version of P2/MN2 in the context of natural science. Of course, if it is theologically informed, one might not choose or prefer to label this "methodological naturalism."

Whatever the case may be, I propose that one need not worry too much about what language is used to describe the posture—demonstrated earlier to be endorsed collectively by Torrance, Perry, and Ritchie—in which natural science is understood (for theological and scientific reasons) to necessarily preclude any appeal to supernatural hypotheses. It could be called "methodological naturalism" if it is clear that it is not defined in such a way as to entail the adoption of the philosophical commitments of naturalism. Or, following Torrance's advice, it could be called something else, because the term "naturalism . . . is normally seen to be an ism that is committed to suppositions that are incompatible with Christianity" (Torrance 2017, 704). I personally have no stake in the game either way, as I am inclined to consider

semantic disagreements about what term to use to be less important than being analytically precise about defining that term and the roles a particular form of inquiry seeks to fulfill (cf. Chalmers 2011).[4] Be that as it may, it seems to me that on several points the two parties to this debate are in lockstep agreement, indicating that this debate is mostly semantic in nature.

This is not to say that a semantic disagreement is all that is at play here. There are certainly substantive differences at the peripheries of their two proposals, as discussed in the following sections. But the main takeaway is that, in relation to science and MN itself, they are talking about different things. Torrance wants Christians to reject MN because it supposedly requires the assumption that there must be a naturalistic explanation.[5] Perry and Ritchie affirm MN as an intrinsic feature of the sciences (i.e., seeking only natural explanations on the basis of the limitations of scientific tools and reasoning), but they deny the notion that, when faced with an anomaly, it requires setting aside or denouncing belief in the possibility of a theological explanation. Torrance wants the Christian scientist to avoid saying there must be a purely naturalistic explanation; Perry and Ritchie insist that this is not entailed by their understanding of MN. All of this must be kept in mind for the discussion that follows.

Torrance Responds

In light of the comments and criticisms posed to him by Perry and Ritchie, Torrance was prompted to clarify and build upon his earlier argument. To his credit, Torrance charitably handles instances in which Perry and Ritchie misconstrue his original article or ascribe to him conclusions, or potential conclusions, not entailed by his argument. I was initially taken aback, for example, by their contention that Torrance was advocating for an incompatibilist view of divine agency insofar as miracles are concerned, "in which affirming an event as divine action implies that there is no natural explanation for that event" (Perry and Ritchie 2018, 1072; cf. 1090n8). Given his Barthian inclinations, I read Torrance's article with the presupposition, which he subsequently corroborates, that he does "not think there is a competitive relationship between God and the dynamics within the created order" (Torrance 2018, 1098). That said, this does not mean he is a compatibilist in the Thomistic sense (cited by Perry and Ritchie), whereby "God is ultimately the cause of everything" (Lindberg 2007, 240–41), including evils such as "the Holocaust, sexual abuse, and the like" (Torrance 2018, 1098).

This is not the only area where Perry and Ritchie unhelpfully ascribe positions to Torrance that he would not endorse. Another appears when they claim that, in his rejection of MN, Torrance leaves room for the theistic scientist to adopt a "God of the gaps" approach to anomalies, wherein God is invoked as a hypothesis to account for currently inexplicable phenomena

(Perry and Ritchie 2018, 1077). Whereas adopting MN would prevent Newton's (at the time) gap-filling suggestion that God would need to intervene in order to uphold the orbital structure of the solar system,[6] Torrance's rejection of MN apparently "opens the door to the sort of 'miracle' posited by Newton, one which in retrospect proves embarrassing" (Perry and Ritchie 2018, 1077). However, Torrance's original article, as he reiterates in his response, leaves no room for "such haphazard reference to divine action" (Torrance 2018, 1097). In fact, he even directly spells out how a Christian scientist would need to respond comments such as those from Newton: "She could suggest that, for the purposes of their particular research program, they should assume that they are unable to discern such action because, if it is taking place, it is not discernible by empirical study" (Torrance 2017, 694).

This closes the door on any "God of the gaps." Apart from a few key theological exceptions, which are discussed in the following section, Torrance (2018, 1097) "do[es] not think a Christian scientist should identify a miracle," and should instead continuously "search for a possible natural explanation." Refusing to shut down the possibility of divine action is one thing. Jumping to the conclusion that God has in fact acted is quite another.

Understood thus, Torrance cannot justly be charged with wanting to "stop science from doing more" in the face of present-day anomalies (as implied by Perry and Ritchie 2018, 1082). For Torrance (2018, 1097, 1096), the "openness" to the possibility of ongoing divine action should not "make any difference to . . . scientific study," for it is "the duty of the scientist to keep digging."

There are select instances, however, in which Torrance does advocate for "stopping science," and these emerge in relation to the theological exceptions hinted at above. Here is where Torrance clarifies and expands his earlier argument. According to Torrance (2018, 1096), there are certain miracles, or actual anomalies—including *creatio ex nihilo*, the incarnation, the resurrection, and the ascension— that "need to be interpreted theologically (because the Christian does not believe a natural explanation is possible) . . . [and] it would be confused to try to interpret them in natural terms (in the way that scientists should try to explain all other phenomena)."

When faced with these particular phenomena, Torrance argues that the Christian scientist should not let a commitment to MN prevent them from affirming these as facts. Moreover, given that the Christian believes these miracles lack any possible natural explanation, they "should not try to explain [them] naturalistically . . . [because] they are a blind spot for an 'empirical' investigation" (Torrance 2018, 1096).[7] One's theological commitments, in other words, should shape how they approach science. These commitments do not tell them how to do science, but, in the case of these specific miracles, tell them not to try. This is Torrance's (minimal but decisive) argument for a "theology-engaged science" in which "the tools of theology can serve the task of science"

(Torrance 2018, 1102).[8] Those Christians who choose to keep digging would be both unchristian and unscientific, functionally denying what they know to be true.

A Brief Digression: On Natural Science and the Four Miracles

One question that came to mind upon reading Torrance's response pertained to whether something like the Logos's anhypostatic assumption of a concrete human nature, as a subject of inquiry, actually falls under the purview or scope of scientific investigation. What would it even look like for a natural scientist to try to study the nonempirical and transcendental act of assumption? To be sure, at no point does Torrance argue that such a question would fall under the remit of "natural" science. But, given his broader conception, which includes the possibility of "theological" science (following the likes of Aquinas, Barth, and T. F. Torrance), he does believe that the incarnation can be approached scientifically. (Here, of course, one must recall the different conceptions of science that may be at play.) So, to reiterate, does the incarnation fall under the remit of natural science?

If it does not (such as is necessitated by those adopting P2), then theology would not have to tell the scientist to avoid trying to give a naturalistic explanation, for they would not (or, at the very least, should not) even be trying to give any scientific explanation with metaphysical ramifications at all. Likewise, for *creatio ex nihilo*, the resurrection, and the ascension.[9] Torrance (2018, 1097) is surely correct that these events would be understood as "a *sui generis* act of God," but precisely on the basis of that theological judgment, this seems to imply these things cannot be known through the forms of investigation typically associated with the natural sciences.

In fact, I propose, on the basis of theological considerations, that the following statements (among others) cannot be subjected to empirical or experimental analysis, and that as such, they fall outside the scope of scientific inquiry (at least when understood in the sense on offer from Perry and Ritchie):

- God created the world out of nothing.
- The word became flesh.
- The God of Israel bodily raised Jesus from the dead.
- The resurrected Jesus ascended to the heavenly tabernacle.

I therefore want to offer a minor conceptual clarification to Torrance's argument. I agree that the four miracles generate directly observable phenomena (such as the existence of the world and the zygote in Mary's uterus), and that these phenomena fall "within the domain of science" (Torrance 2018, 1096). In my judgment, however, the miraculous aspect of these phenomena is not straightforwardly an "empirically accessible object

of . . . study," and as such, this does not straightforwardly "plac[e] them [the four aforementioned hypotheses] within the domain of [natural] science" (Torrance 2018, 1096). (Of course, anyone adopting MN1 could not even say this much, which lies at the heart of Torrance's argument.) Instead, I regard the miraculous element to be revealed truths, and argue that no natural evidence corresponding with or generated by these events—such as the existence of the universe, the humanity of Jesus, the empty tomb, or the psychosomatic experiences of the disciples—could be coherently appealed to in order to either support or undermine their veracity. That is to say, one cannot argue *from* the generated phenomena *to* the truthfulness or falsity of the miracle, even though there is an inseparable relationship between the phenomena and the miracle that generated them. Adopting MN1 rules these claims out (as Torrance convincingly shows), but MN2, if properly understood within a theological framing, can accommodate such a posture toward the four aforementioned hypotheses.

Insights from Karl Barth prove instructive at this juncture. When unpacking the relationship between form and content in his doctrine of revelation, Barth ([1932] 1936, 325) explains: "Thousands may have seen and heard the Rabbi of Nazareth. But this 'historical' element was not revelation. The 'historical' element in the resurrection of Christ, the empty tomb as an aspect of the event that might be established, was not revelation. This 'historical' element, like all else that is 'historical' on this level, is admittedly open to very trivial interpretations too."

Appropriating Barth, it might be said that the worldly phenomena themselves were not the miracles. They may be traces, or physical ramifications, associated with divine action, but such physical phenomena are not themselves identical with the miraculous element at play. Theoretical physicists and/or cosmologists studying the events that transpired at or soon after T=0 are not directly studying the divine act of creation itself. If, hypothetically, a medical doctor would have been able to subject Mary to scans during the exact moment of Jesus's conception, they would not have been directly studying the divine act of incarnation. A historian investigating whether the tomb was indeed empty is not directly studying the divine act of resurrection. Similar things could be said in relation to the disciples' experiences of the ascension. Of course, a comprehensive explanation of these divinely generated phenomena will require recourse to faith, but such a theological explanation is precisely excluded by the conception of science at play in P2/MN2).

The main takeaway is that these particular miracles are not directly equated with any worldly phenomena (i.e., the data for science), and as such, the miraculous component is not an object of scientific study. But the worldly phenomena in principle available to the scientist—the Big Bang, Mary's reproductive system, an empty tomb, and the disciples' experiences—can be

approached with the posture that a natural (n.b., not naturalistic) explanation is worth seeking.[10] As Barth ([1932] 1936, 329–30) argues, "the historical contingency" in and through which miracles occur "can still be surveyed and explained in all possible dimensions." And if so, I do not want to tell scientists to stop what they are doing or avoid trying to discover the penultimate limits of empirical/theoretical knowledge (such as for the practitioner of P2/MN2) in relation to the origins of the universe or what took place on the first Easter Sunday. This brings me to my proposed way forward.

A Possible Way Forward

My proposal is relatively simple, yet it differs in crucial respects from the solutions offered by Torrance, Perry, and Ritchie. First, the method used should be dependent upon the question being asked—a well-formulated question. In that sense, I echo the complaint from Perry and Ritchie (2018, 1086–87) that most of these debates about method or the relationship between science (which scientific discipline or subdiscipline?) and religion (which religion and whose theology?) take place at an unhelpfully heuristic and abstract level. Instead, specific examples and questions must be focused on, asking what methods are appropriate to the task at hand. Saying this, however, forces me to be suspect of their claim that the Christian scientist must always adopt a particular methodology (namely, MN). How can they simultaneously claim that we should "work out . . . points of methodology on an ad hoc basis" depending upon the question at hand (Perry and Ritchie 2018, 1086) as well as advocate earlier in the article for a normative scientific methodology committed to MN?

Be that as it may, the question at hand should be formulated, much like an essay question, as specifically as possible. For example, instead of asking the broad question, "How should a Christian scientist/historian study the resurrection?", it should instead be asked: "On the basis of the empirical, theoretical, and experimental tools of the scientific method [defined here according to P2], what can be said in relation to the events surrounding the first Easter Sunday?" Of course, that is not the only legitimate question. One could also ask: "On the basis of the resources of faith, what ought to be said about what transpired on the first Easter Sunday?" These are different questions (and certainly not the only possible ones!), and they require different tools and different methods. Depending upon the question, an approach like Torrance's science-engaged theology might be appropriate; for other questions, MN might be appropriate.

Nevertheless, in cases where a particular research question requires the use of MN, I agree with Torrance that the Christian should, strictly speaking, suggest that there are clear theological reasons to avoid invoking divine agency or positing miracles when operating in the domain of natural science. God is wholly other, to echo the early Barth, and divine agency is qualitatively distinct from ordinary happenings, making it by nature inaccessible to empirical or

experimental investigation (on this, see Ritchie 2020, 195–96). It is theology, rather than the naturalistic demands of secular scholarship, that should guide the Christian scientist to rule out positing miracles or divine agency when engaging in the practice of natural science.[11] This will not change how one goes about doing science in any way, but it does change the motivating basis for why certain theological explanations are not considered viable for the scientist. I consider this a theologically informed version of P2—a posture that, it seems to me, would be readily endorsed by both parties to this debate.

Second, within such a framework, theology's relevance becomes important not primarily for dictating which method one ought to use, but rather for assessing the nature and truth-value of the conclusions drawn via a particular method. Let us briefly return to the question of the first Easter Sunday. It seems plausible that a secular or even agnostic historian operating on the basis of MN2 could conclude that the tomb was indeed empty, and that the disciples did in fact believe Jesus was raised from the dead, without thereby agreeing with the early Christian witness that the God of Israel did indeed bodily raise Jesus from the dead. The role of theology, when faced with such a claim, is to assess its nature and truth-value vis-à-vis faith. Part of such an assessment, I propose, would be to conclude that MN, by its very nature, is at best a penultimate exercise, and that the conclusions reached on its basis will never amount to the final word about the cosmos as a whole or in part. In short, while MN may not be an ultimate truth-seeking endeavor, it can function (from the perspective of faith) as being, at best, a proximate and provisional search for truth within the established parameters of the research question.

Third, C. Stephen Evans (1999, 184) was surely onto something when he identified two different evaluative postures toward MN: (1) the assumption that MN is obligatory and binding for all serious scholarship, such that those who fail to adopt this practice are not reputable scholars; and (2) the belief that MN is one possible method among many that may provide fruitful results depending on the task at hand, but it is not binding for all respectable scholarship. Throughout his essay, Evans aims to challenge the metaphysically naturalist notion that MN is obligatory, but he ultimately endorses MN as one viable, albeit limited, form of intellectual inquiry. Evans (1999, 185) concedes that there may be "good reason for employing methodological naturalism some of the time for some scholars"—particularly when apologetically engaging a secular or interreligious audience. In fact, he adds that there is "nothing objectionable, and possibly a good deal to be gained, when believing Christians who are historical biblical scholars seek to show what kind of knowledge about Jesus can be achieved, even when one is limited to evidence that would be admissible to a naturalist" (Evans 1999, 200). In relation to my proposal, the main takeaway is that if the question at hand specifically invites (or perhaps, in the context of some Oxbridge tutorial essay prompts, even requires) the use of

MN to answer it, this does not require the ad hoc practitioner of MN to agree with the metaphysically charged claim that MN is obligatory and binding for all serious scholarship.

Fourth, I agree with both parties to this debate that "some scientists . . . are not particularly skilled at properly distinguishing their strictly empirical claims from their nonempirical ones" (Perry and Ritchie 2018, 1069), venturing into metaphysically naturalist territory "when there is no scientific reason for doing so" (Torrance 2017, 706). This can and should be corrected when it occurs (something that is all but guaranteed through the adoption of MN1). But I do not think such haphazard metaphysical claims are theologically necessary, even among those who adopt MN, if it is understood (in a manner consistent with MN2) as I outline here:

> Methodological naturalism (MN) is a framework or approach inherent to scientific inquiry—which, for some, might be demanded by God's transcendence and the nature of divine agency—that necessitates some combination of empirical reasoning, scientific theorizing, experimental testing, and/or the goal of natural explanations for phenomena (if the evidence permits). MN limits itself to strict adherence to established scientific knowledge while remaining open to the possibility of paradigm shifts. Under MN, explanations for observable phenomena are derived from and constrained by natural laws and processes, explicitly excluding supernatural causation, divine intervention, and theological speculation from the scope of inquiry. Given its categorical distinction from metaphysical naturalism, it should be noted that MN thus defined should not make or entail any metaphysical claim about the nature, agency, or existence of the divine, supernatural beings, or the transcendent realm but rather focus on methodological and practical constraints in relation to the empirical or experimental testability of hypotheses within the practice of scientific investigation.[12]

The addendum at the end is important, for it prohibits the metaphysically naturalist conclusion (which Torrance is rightly concerned to eschew) that "it is not possible that God did it" when faced with an apparent anomaly. In my view, most research questions within the domain of natural science (although perhaps not all) would be able to be answered with a methodology similar to the one described.

This brings me, fifth and finally, to the question set out near the beginning of the present article: How should a Christian medical researcher, or any medical researcher for that matter, approach an instance of SR in which the patient or their family claims the SR was a miraculous answer to prayer?

Of course, the sensible approach, in the context of being a medical caregiver, is to maintain professionalism, respect another's beliefs, and communicate

empathetically, erring on the side of caution by avoiding debates about religion and metaphysics. If time passes, however, and the patient comes to a medical researcher studying SR, directly asks them what they believe, and is genuinely eager to hear, then perhaps professionalism can be maintained while giving a response. In such a situation, here is how I would encourage the Christian medical researcher to respond to the patient (a response informed by faith rather than the dictates of naturalism):

> While I personally believe in the God who created the universe, took on flesh, and raised Jesus from the dead, I do not believe that we can empirically or experimentally test or verify if and when God is at work. However, in this case, while I do not have a medical explanation for the remission of your cancer, I am inclined to trust the latest advances in science, in which we are beginning to detect promising signs that can help us understand spontaneous remissions, even though we are still in the relatively early stages of research. That being said, as a medical researcher, my primary focus is relying on empirical evidence and scientific understanding, despite the fact that there are medical mysteries we have yet to fully comprehend. Your experience is certainly astonishing, and I am genuinely thrilled by your recovery—I hasten to add that I have no intention to question your spiritual beliefs. Be that as it may, I am not quite sure I would attribute your remission to a specific instance of divine intervention, and I will continue to investigate all possible natural explanations.

I suggest that this response would be readily endorsed by both parties to the aforementioned debate, providing one more data point to my argument that semantic quibbles have overshadowed a great deal of substantive agreement. It does not matter to me whether this response is considered an instance of MN (as understood by Perry and Ritchie) or theology-engaged science (as understood by Torrance), though it seems slightly closer to the spirit of the latter, even if practically indistinct from the former.

What does matter to me is that the God of Christian faith is not containable within, or straightforwardly accessible to, any methodological system, and as such, there is not one single method that must always be adhered to in order to have a properly theological understanding of the cosmos. Consequently, against "methodological dogmatism" (Brightman 1937, 149), I propose that debates about method ought to be sharpened in their focus, allowing the particular research question at hand to determine which method(s) ought to be employed. This, in my judgment, will enable more fruitful progress to be made in the ongoing conversations between theology and the modern sciences.

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Notes

[1] Framing matters this way does not intend to imply that each of these "miraculous" examples constitute a nature-defying miracle or an actual anomaly. Rather, they are used as a heuristic device to bolster the more general claim that actual anomalies, for Torrance, are to be held out as legitimate possibilities within a Christian worldview. As I discuss in due course, though, Torrance highlights only four instances of actual anomalies wherein he thinks no scientific explanation is possible.

[2] This, it seems to me, is one of the central reasons Torrance is so insistent upon rejecting MN. His comments elsewhere on the status and function of theology in the contemporary university further point in this direction (Torrance 2019).

[3] See also Perry and Ritchie (2018, 1076), where they argue that "the scientific approach to regular, irregular, and seemingly miraculous anomalous phenomena should be the same: one of curiosity and willingness to pursue further research."

[4] That being said, Torrance is certainly correct that for communicative purposes, employing a term in a manner that differs from its normal or everyday usage can unhelpfully confuse matters. Language is important, even if that point can occasionally be overshadowed by the tendency among some analytic philosophers and logicians of reducing words to variables or formal symbols (something I might be guilty of myself).

[5] This "must" also appears in Torrance's later response (2018, 1096; emphasis added), in which he challenges the notion that the Christian should allow "an inappropriate method to determine how she *must* interpret them."

[6] On which, see the discussion in the introduction to this article.

[7] According to Torrance, a "blind spot is not simply a spot that is currently unable to be explained naturalistically; it is a spot that *cannot* be explained naturalistically" (2018, 1096).

[8] There is one other sense in which Torrance advocates for a theology-engaged science, which I have already discussed: when he argues that there are theological reasons (rather than naturalistic reasons) the Christian scientist should avoid positing a miracle or divine agency when faced with a present-day anomaly.

[9] There are of course the odd exceptions. Some non-Christian historians, for example, are metaphysically ambitious and try to explain the first Easter Sunday naturalistically, thereby denying that Jesus was raised from the dead. (Conversely, some Christians are similarly ambitious, trying to prove that he was.) Due to the constraints of space, I plan to tackle this— he question of methodological naturalism in relation to the study of the historical Jesus and the resurrection—in more detail in a subsequent article.

[10] A brief word is in order about the difference between "natural" and "naturalistic" in this sentence. A natural explanation of the first Easter Sunday (operating on the basis of P2/MN2) might conclude that the tomb was empty and that the disciplines believed they encountered Jesus alive in bodily form. However, because P2/MN2 does not permit proposing or adjudicating upon supernatural hypotheses, the researcher would have to stop here. A naturalistic explanation (demanded by MN1), on the other hand, might conclude that the disciples were wrong, because it is known that dead people do not come back to life after a lengthy period of no brain activity.

[11] This point may seem like I am splitting hairs, but consider an alternative scenario: a (nonexistent) world in which divine agency was "directly accessible to or the direct object of empirical, scientific study" (to borrow a phrase from Torrance 2017, 693). In such a scenario (which, again, does not exist), I would expect the Christian scientist not to rule out divine agency or the possibility of miracles as an explanatory category in their scientific research.

[12] This definition is specific to the discipline of science. It would therefore need to be modified to account for other disciplines (e.g., history and biblical scholarship).

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