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SATURN ARTICLE

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## Does Classical Science Conflict with Belief in Miracles? Some Philosophical and Theological Bridge-Building

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### ABSTRACT

*Classical physics is commonly understood classical physics as conflicting with belief in special divine action, particularly miracles. One way to challenge this argument is to challenge classical physics. This has been dominant in the theology and science literature. But another way, recently discussed by a number of prominent philosophers, focuses instead on criticizing the theological and philosophical premises of the argument from classical science against miracles. This article seeks to build bridges between these approaches, focusing particularly on the approaches of Robert J. Russell and Alvin Plantinga.*

### Introduction: The Common Understanding of the Problem

Is miraculous divine action compatible with determinism in physical theories? Physics has often been understood to imply that the causal processes of the universe proceed tightly in lockstep, like the mechanisms of a great clock, leaving little or no room for objectively special divine action in the world.<sup>1</sup> Robert J. Russell sums up this understanding succinctly: “*In classical physics, the fundamental laws were deterministic and implied, philosophically, that nature itself is deterministic, a closed causal system of forces rigidly determining the motion of matter.*”<sup>2</sup> Russell argues that this understanding of physics did not necessarily make belief in divine action impossible. However, it became difficult to conceive how God could act in the world beyond the

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<sup>1</sup> This physics is also often termed “Newtonian physics”. Although the terms are often used synonymously, there is a difference: Certainly Newton himself believed in special divine action within history, and the formulations typically used in the Enlightenment time to reject miracles were different from those of Newton. I take the term “objectively special divine action” from Robert J. Russell (see his article in this volume).

<sup>2</sup> Robert J. Russell, *Cosmology from Alpha to Omega: The Creative Mutual Interaction of Theology and Science*. (Minneapolis: Fortress, 2008), page 580.

natural laws, in the sense that he would provide “*a causal input that alters how things would gone had only natural factors been operative.*”<sup>3</sup>

According to Russell, classical physics essentially left two alternatives for those who wanted to continue believing in divine action beyond the laws of nature. First, they could believe that God indeed did act in nature in a way that violated the laws of nature, because his omnipotence makes even this possible. Second, they could believe that while God does not violate the laws of nature and act in a way that create an objective difference in nature, humans could nevertheless subjectively interpret certain natural events as divine action.<sup>4</sup> Many theologians came to share the understanding that physics should lead theologians to take the second option. I will present a few famous and representative quotations:

*“It is impossible to use electric light and wireless and to avail ourselves of modern medical and surgical discoveries, and at the same time to believe in the New Testament world of spirits and miracles.”* -Rudolf Bultmann, *Kerygma and Myth*.<sup>5</sup>

*“Now this assumption of a causal order among phenomenal events, and therefore of the authority of the scientific interpretation of observable events, makes a great difference to the validity one assigns to biblical narratives and so to the way one understands their meaning. ... Whatever the Hebrews believed, we believe that the biblical people lived in the same causal continuum of space and time in which we live, and so one in which no divine wonders transpired and no divine voices were heard.”* -Langdon Gilkey, “Cosmology, Ontology, and the Travail of Biblical Language.”<sup>6</sup>

*“The traditional conception of miracle is irreconcilable with our modern understanding of both science and history. Science proceeds on the assumption that whatever events occur in the world can be accounted for in terms of other events that also belong within the world, and if on some occasions we are unable to give a complete account of some happening – and presumably all our accounts fall short of completeness – the scientific conviction is that further research will bring to*

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<sup>3</sup> Alston, William. 1994. “Divine Action: Shadow or Substance?” *The God Who Acts: Philosophical and Theological Explorations*. Ed. Thomas F. Tracy. (University Park: University of Pennsylvania.) Page 45.

<sup>4</sup> Russell’s typology is much more detailed and sophisticated than this brief summary allows. Again, please see his article in this volume for a fuller summary of the view.

<sup>5</sup> Bultmann, Rudolf. 1953. “Kerygma and Myth.” *Kerygma and Myth: A Theological Debate*. Ed. Hans Werner Bartsch. (New York: Harper & Row). 1-44. Page 5.

<sup>6</sup> Gilkey, Langdon. 1961. “Cosmology, Ontology, and the Travail of Biblical Language.” *The Journal of Religion*. Vol. 41. No. 3. 194-205.

*light further factors in the situation, but factors that will turn out to be just as immanent and this-worldly as those already know.*” -John Macquarrie, *Principles of Christian Theology*.<sup>7</sup>

*“My interest in science has deepened my appreciation of the difficulties of miracle-talk. The idea that God intervenes in the laws of nature, and then redirects their course, is problematic because it raises the specter of chaos and unpredictability. If we can't rely on the regularity of nature, most of life becomes impossible, including everything that depends on technology. Furthermore, it is almost impossible to locate the so-called causal joint, a technical term for the precise empirical sites of God's intervention.”* – Philip Hefner, “Why I Don't Believe in Miracles.”<sup>8</sup>

These understandings represent a common narrative of the effect of the natural sciences.<sup>9</sup> Usually the quoted authors do indeed also have other reasons to disbelieve in miracles, such as theological reasons related to the problem of evil. However, they do see the natural sciences themselves as a major problem for belief in miracles. In Hefner's words from the previously quoted essay, it seems that the nature does not have enough "wiggle room" for God to act miraculously in the world.

Analytic philosophers of religion have discussed two main questions relating to miracles: (1) their ontological definition, and (2) the epistemic question: could belief in miracles be rationally justified?<sup>10</sup> When we are evaluating the importance of the natural sciences for belief in miracles, the ontological and epistemic questions are linked. As indicated by the previous quotes, it seems to many that the natural sciences give us strong epistemic reason to believe that the ontology of nature leaves no room for miracles, and thus the natural sciences count against rational belief in miracles. So the argument goes from epistemology to ontology and again back to epistemology.

The previously quoted authors don't really give a systematic argument. However, the basic structure of the argument against miracles from classical science seems to be the following:

1. Science is deterministic.
2. If science is deterministic, this implies a deterministic worldview.
3. A deterministic worldview prohibits miracles.

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<sup>7</sup> Macquarrie, John. 1977. *Principles of Christian Theology*, 2<sup>nd</sup> ed. London: SCM Press. Page 248. I owe this quotation to Alvin Plantinga, *Where the Conflict Really Lies: Science, Religion & Naturalism*. (Oxford: Oxford University, 2011), page 71.

<sup>8</sup> Philip Hefner, “Why I Don't Believe in Miracles”, *Newsweek*, May 1, 2000.

<sup>9</sup> Charles Taylor (2007, *A Secular Age*. Cambridge, MA: Harvard University Press) famously argues that our age is ruled by a secular metanarrative.

<sup>10</sup> I am indebted to Ari Savuoja's *Mikä on ihme ja mitä ihmeistä voidaan tietää? Keskustelu ihmeistä uusimmassa englanninkielisessä uskonnonfilosofiassa*. Uskonnonfilosofian väitöskirja. (Helsinki: Helsingin yliopisto, 2007), unfortunately only available in Finnish. A fine presentation of the subject in English is Timothy McGrew, “Miracles.” *The Stanford Encyclopedia of Philosophy* (Spring 2013 Edition). Ed. Edward N. Zalta (ed.). (Available at: <<http://plato.stanford.edu/archives/spr2013/entries/miracles/>>.)

4. Therefore, classical science implies that no miracles can happen.

There are several ways of questioning this argument. First, one could question the first premise, that science is deterministic. This way is opened particularly by new developments of physics, some of which are analysed in this volume. Second, one could argue that determinism in the natural sciences does not need to lead philosophically and theologically to a deterministic worldview. This is the strategy that will be focused on in this paper. Third, one could argue (against David Hume) that even if science gives us reason to believe that miracles don't occur, this reason might perhaps be overthrown by sufficient evidence that a miracle has indeed occurred.<sup>11</sup>

In the contemporary theology and science community, the critique of the first premise is perhaps the primary way of defending the possibility of objectively special divine action in the world. The "divine action project" which was sponsored between 1988 and 2003 by the Center for Theology and the Natural Sciences (CTNS) and the Vatican Observatory (VO), includes perhaps the deepest current exploration of the question of special divine action in relation to the natural sciences. The project included a great variety of thinkers, and the question of miracles was not the primary focus of the discussions. Rather, the project was more concerned with the general question of the relation of divine action with the natural sciences. For example, Russell argues simply that the new natural sciences reveal a whole new mode of divine action, which does not need to be miraculous, but can nevertheless impact nature in an objective (real) way. Russell calls this "non-interventionist objective divine action" (NIODA). I will not discuss NIODA extensively in this paper.<sup>12</sup> However, answering the general question of the relationship of special divine action to the natural sciences also has implications for the question of miracles. If the deterministic interpretation of science is questioned, then the whole argument against miracles loses its force, even if determinism in the sciences was not questioned for the purposes of defending miracles.

In contemporary analytic philosophy of religion, several voices have argued for the possibility of special divine action, including miracles, by questioning the second premise of the argument. For

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<sup>11</sup> The argument based on the determinism of physics is not the only philosophical critique of miracle-beliefs that could be made. For example, one could also argue that the epistemic practices of the natural sciences should be a model for all seeking of knowledge, and that when we adopt such standards, we will find ourselves without good reason to believe in miracles.

<sup>12</sup> See Robert J. Russell's article in this volume, and Wesley Wildman "The Divine Action Project, 1988-2003." *Theology and Science*. Vol. 2. No. 1. 31-75. 2004. The term "The Divine Action Project" comes originally from Wildman. See also the six volumes of the project for the actual articles of the VO/CTNS -conferences; I recommend that those unfamiliar with the series begin with the abstracts on the CTNS website at <<http://www.ctns.org/books.html>>.

example, William Alston,<sup>13</sup> Alvin Plantinga,<sup>14</sup> Robert Larmer<sup>15</sup> and more recently also Jeffrey Koperski<sup>16</sup> and Steven Horst<sup>17</sup> and have argued that arguments against miracles depend primarily on problematic philosophical interpretations of physics. They argue in various ways that when careful philosophy of science is applied and terms like “the laws of nature” are understood properly, the difficulties disappear. Several theologians (such as Taede A. Smedes<sup>18</sup> and Ignacio Silva<sup>19</sup>) have also argued that the question of miracles is primarily dependent on our theological understanding of the nature of God and the God-world relation, rather than physics. Science alone is argued to be insufficient to determine how God can act in the world.

The purpose of this article is to explore these philosophical and theological arguments and the possibility of miracles even without the new physics, and to relate these arguments to discussion within the field of theology and science. The SATURN project is also not primarily about miracles, but the more general concept of divine action in the world. However, the special case of miracles, which is the focus of this article, is still interesting, and will help clarify to what extent the understanding of divine action is indeed dependent on changes within the natural sciences, and what is the importance of science in relation to such theological and philosophical arguments.

The first part of my article introduces and analyses influential arguments for the compatibility of miracles and the laws of nature used by the aforementioned philosophers, focusing most on Plantinga. It is important for thinkers in the theology and science community to be aware of arguments in the analytic philosophy of religion, and vice versa. My hope in writing this article is that there will be further understanding and dialogue between these intellectual traditions. To that end, I will devote the second part of this article to building bridges between these traditions, and showing that some common ground already exists. Finally, the third part of the article considers the surrounding theological discussion, and argues that scientific, theological and philosophical arguments are all valuable in the discussion on miracles.

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<sup>13</sup> Alston, “Divine Action: Shadow or Substance?”

<sup>14</sup> Alvin Plantinga, “What is ‘Intervention?’” *Theology and Science*. Vol. 6. No. 4. 369-401.2008; and Plantinga, *Where the Conflict Really Lies*.

<sup>15</sup> Robert J. Larmer, *Water into Wine? An Investigation of the Concept of Miracle*. (Kingston and Montreal: McGill-Queen’s University, 1988), and *The Legitimacy of Miracle*. (Lanham: Lexington Books, 2014).

<sup>16</sup> Jeffrey Koperski, *The Physics of Theism: God, Physics and the Philosophy of Science*. (Oxford: Wiley-Blackwell, 2015). Chapter 4.

<sup>17</sup> Steven Horst, “Miracles and Two Accounts of Scientific Laws.” *Zygon*. Vol. 49. No. 2. 323-347. 2014.

<sup>18</sup> Taede A. Smedes, “Beyond Barbour or Back to Basics? The Future of Science-and-Religion and the Quest for Unity.” *Zygon*. Vol 43. No 1. 235-258. 2008.

<sup>19</sup> Ignacio Silva, “Great Minds Think (Almost) Alike: Thomas Aquinas and Alvin Plantinga on Divine Action in Nature.” *Philosophia Reformata*. Vol. 79. No. 1. 2014. 8-20.)

## PART I: Alston and Plantinga on Physics and Miracles

### *Laws of Nature and Miracles*

Historical analysis already grants some initial plausibility to the thesis that classical science alone does not prohibit belief in miracles. Historically, several centuries passed between the advent of Newtonian physics and the rise of the new physics with its relativity theory, quantum physics and chaos theory. In these centuries, many people continued to believe in miracles, including Newton and many leading empirical scientists. The arguments against miracles only became popular in the time of the Enlightenment, and often the primary critics of miracles were non-scientists.<sup>20</sup> However, this is not a conclusive argument: It could well be that these thinkers simply failed to realize the full implications of science for the question of divine action.

To understand why the laws of nature would conflict with belief in miracles, one needs to understand the concepts of “miracle” and “law of nature”. Since the Enlightenment, miracles have typically been understood as “violations” of the laws of nature. The standard Humean understanding has been that miracles involve a violation, abrogation or suspension of the laws of nature, and this is what is typically meant by a “divine intervention”. Hume’s famous essay “Of Miracles” (1748) is in the background of much of the contemporary discussion of miracles. According to Hume, there a vast amount of evidence in favor of the proposition that the regularities described in the laws of physics are unbreakable. When miracles are defined as violations of these apparently unbreakable laws, we can argue that we have strong inductive evidence that miracles could never occur.<sup>21</sup>

As Peter Harrison has noted, the whole idea of miracles as violations of the laws of nature was invented only after the scientific revolution, and does not reflect the breadth of the concept of miracle in the Christian tradition.<sup>22</sup> One way of responding to this argument is to state that the definition of miracle used by Hume is in error. As Hume’s contemporary Thomas Price already

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<sup>20</sup> Robert C. Burns (*The Great Debate on Miracles : From Joseph Glanvill to David Hume*. Lewisburg, PA: Bucknell University, 1981) argues that the Enlightenment reaction against miracles was actually a countermove against the renewed use of miracles in Christian apologetic following the rise of modern physics. Often, these arguments were made with particular prominence by leading members of the scientific community. Jane Shaw concurs with this assessment in her *Miracles in Enlightenment England*. (New Haven: Yale University Press, 2006), pages 14-15.

<sup>21</sup> Hume’s argument has been interpreted in many ways. Some argue that Hume merely means to argue that “extraordinary claims require extraordinary evidence”, while others find that Hume argues for a much stronger claim: that no conceivable evidence could in practice provide rational grounds for belief in the occurrence of an actual miracle, like the raising of the dead. As John Earman notes in *Hume’s Abject Failure: The Argument Against Miracles* (Oxford: Oxford University, 2000), the problem may even stem from Hume’s own uncertainty regarding his argument.

<sup>22</sup> Peter Harrison, “Miracles, Early Modern Science, and Rational Religion.” *Church History*. Vol. 75. No. 3. 493-510. 2006.

argued against Hume, “*a miracle is properly an event different from experience than contrary to it.*”<sup>23</sup> In our contemporary discussion, Alston and Plantinga have similarly argued that miracles are simply acts of God that go beyond the capacities of nature alone, rather than being violations of these laws. As such miracles are not contrary to the discoveries of natural science, but only different from phenomena studied by the sciences.<sup>24</sup> Miracles are not in opposition to the philosophical assumption that all events are determined merely by the laws of nature and known physical preconditions. However, Alston and Plantinga argue that this assumption is philosophical, rather than scientific, and theists do not have to accept it.<sup>25</sup>

Under the traditional Enlightenment understanding of physics utilized by Hume, laws of nature were understood to be universal regularities, allowing for no exceptions. In contrast to this, Alston and Plantinga argue that physical experiments can never establish a law that holds *unqualifiedly*. The laws are discovered to operate only in conjunction with certain physical conditions. The temperature of a room, for example, is certainly predictable by science, but only as long as we know all the factors that affect that temperature. So Alston and Plantinga understand all scientific laws to include qualifications. Alston writes that “*the laws we have reason to accept lay down sufficient conditions only within a “closed system”, that is, a system closed to influences other than those specified in the law. None of our laws take account of all possible influences. Even if a formulation took account of all influences with which we are acquainted, we can never be assured that no hitherto unknown influences are lurking on the horizon.*”<sup>26</sup> Plantinga concurs and argues that the laws of nature only “*describe how things go when the universe is causally closed, subject to no outside causal influence. They don’t purport to tell us how things always go; they tell us, instead, how things go when no agency outside the universe acts in it.*”<sup>27</sup> In this understanding, physics does not and cannot attempt to give us a general metaphysical picture of the world. Rather, it simply studies a more limited question: how do the processes within nature work when only physical processes that we can understand affect them?

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<sup>23</sup> Richard Price. *Four Dissertations*, 4th ed. London: T. Cadell. 1777. Page 402. A good overview of the historical discussion on miracles and critiques of Hume’s argument can be found in Earman, *Hume’s Abject Failure*. For an alternative interpretation and defense of Hume’s argument, see Robert Fogelin, *A Defense of Hume on Miracles*. (Princeton: Princeton University, 2003).

<sup>24</sup> Plantinga, “What Is Intervention”; Alston, “Divine Action”, page 45. Alston notes another problem with using the term “intervention”: it seems to imply that God is normally absent from the normal operation of nature. It seems that classical Christianity affirms both general and special divine action.

<sup>25</sup> Whereas Russell understands objective divine action as miraculous only if it violates the laws of nature (in the Humean sense), Plantinga and Alston argue that the definition of a miracle requires only that God acts in a way that goes beyond the laws of nature. The laws of nature are understood to have a limited scope, and are not applicable to divine action, so God does not need to violate them in order to produce any effect he likes. Rather than violating the laws themselves, God is understood to violate only fallible predictions that are based on these laws.

<sup>26</sup> Alston, “Divine Action”, page 50.

<sup>27</sup> Plantinga, “Where the Conflict Really Lies”, 79.



References to *ceteris paribus* conditions are common in scientific literature. Plantinga quotes standard texts that such as University Physics, which defines the principle of conservation of linear momentum as follows: “When no resultant external force acts on a system, the total momentum of the system remains constant in magnitude and direction.” The principle of conservation of energy is described by the statement that “the internal energy of an isolated system remains constant.”<sup>28</sup> From these types of definitions, Plantinga concludes that physics only attempts to describe systems that are “closed” in the sense that no outside factors beyond those inside the physical system are relevant. So in other words, Plantinga thinks that physics itself admits its own incompleteness and, by extension, its inapplicability to situations where all the factors are not open to scientific study, such as miraculous divine action.

In making this interpretation of the natural sciences, Plantinga and Alston are in good company: in the philosophy of science, there have been many critics of the idea of the laws of nature as exceptionless regularities in nature. One of the eminent critics, philosopher Nancy Cartwright, argues that if understood in this way, the laws of physics would be falsified by experience. For example, the law of gravity allows us to predict that two objects with equal mass would fall at the same speed. Let us say that one is a small rock, and another is a paper airplane. In this case it is clear that the paper airplane will not fall at the same speed because the law of gravity does not describe all the physical forces acting in the system. Cartwright argues that though the laws of physics can be understood to be exceptionless in the sense that the law of gravity is always operating, making predictions based on the laws is only possible when we also account for other factors in the equation. In reality situations are not necessarily as easy to explain as when we analyze idealized models.<sup>29</sup>

Much of this will be obvious to physicists (if not to all theologians and lay people), so why repeat them here? Simply because these commonly known facts about physics seem to throw a wrench into the deterministic interpretation of classical science, and the argument against miracles. Recall premise two of the argument: “If science is deterministic, this implies a deterministic worldview.” But if science and the laws of nature are understood in the described way, then

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<sup>28</sup> Francis Sears & Mark Zemanski, *University Physics*. 3<sup>rd</sup> Edition. Boston, MA: Addison-Wesley. 1963. Page 186; quote from Plantinga, *Where the Conflict Really Lies*, 78.

<sup>29</sup> Nancy Cartwright, *How the Laws of Physics Lie*. Oxford: Oxford University, 1983; *Nature’s Capacities and The Dappled World: A Study of The Boundaries of Science*. (Cambridge: Cambridge University, 1999). See also the excellent discussion in Steven Horst, *Laws, Mind and Free Will*. (Cambridge, MA: The MIT Press, 2011.) Chapters 4 and 5. Horst himself applies the discussion to the question of miracles in Horst, “Miracles and Two Accounts of Scientific Laws.”

It may be replied that perhaps it is possible to construct a more complex scientific model which includes all of the natural forces, and this model will then make it possible to predict all natural events. But what Cartwright and others like Horst would reply is that at least we do not yet have such a model, and assuming that constructing it is possible depends on deep philosophical assumptions about the world. Meanwhile, we can make fruitful scientific predictions based on the incomplete models that we currently have, but we should remain humble and accept that reality is more complex than can yet be described in our idealized models. (See Horst, *Laws, Mind and Free Will*, chapter 5.)

justifying this second premise seems much more difficult. The whole idea of miracles as “violations” of the laws of nature seems to assume a much more rigid concept of the laws of nature, where the laws show what necessarily must happen in the cosmos. However, the more nuanced understanding of laws of nature which actually seems to be used in physics makes it much more difficult to make such necessary predictions. The laws do not determine what happens alone, merely what happens based on the inputs. Without additional philosophical assumptions, the laws of classical physics do not themselves yet show that no such inputs could come into the universe from God. This means that there is no conflict between miracles and science without these additional philosophical assumptions.

We can only predict what will happen to the system with the assumption that we can calculate all the factors affecting the system. If God is affecting the system, then he can introduce new variables into it that will alter the end result without in any way breaking the laws.<sup>30</sup> The point of the argument is not to state that physics itself should include God as a source of energy; rather, the point is to say that physical theories do not need to be extended into a whole deterministic worldview, and so God’s action in the world would not violate any scientific laws. Again, the conclusion is that premise two of the argument from science against miracles is not credible.

### ***Causal Closure and Determinism as Consequences of Science?***

So, Alston and Plantinga both admit that the deterministic "scientific" picture of the world described by the quotes in the beginning of this article is indeed contradiction with belief in miracles. However, they argue that this type of deterministic worldview cannot be based on the determinism of scientific theories alone. “*Why should we suppose that every happening in the universe is uniquely causally determined by factors within the universe?*” asks Alston, and answers: “*So far as I can see, the only respectable reason for determinism comes from reflection on the remarkable success of modern physical science in extending our knowledge of the natural conditions on which one or another outcome depends.*”<sup>31</sup> Newtonian science searches only for natural, deterministic causes.

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<sup>30</sup> Here Fred Hoyle's steady state cosmology may provide surprising support for the Alston/Plantinga argument, since Hoyle also denied the idea that the total mass and energy in the universe is constant, arguing that this principle goes beyond what the scientific evidence requires. Though steady state cosmology has since been rejected by the majority of the scientific community, his reformulation of the law of conservation of energy is not the commonly cited reason for this rejection, though it did cause some scientists to be suspicious of the model. (Jayant V.Narlikar, “Alternative Ideas in Cosmology.” *The Scientific Legacy of Fred Hoyle*. Ed. Douglas Gogh. Cambridge: Cambridge University, 2011. Pages 127-148) Larmer (*The Legitimacy of Miracle*, 41-42) argues that already the doctrine of *creatio ex nihilo* implies that God can indeed create new energy, and so the principle needs to be qualified.

<sup>31</sup> Alston, “Divine Action”, 48.

The remarkable success of this scientific enterprise can be interpreted as evidence that only naturalistic deterministic processes exist. However, the success of science is, according to Alston, equally compatible with a worldview where the world operates only mostly on deterministic principles: “As for the results of science, they are indeed impressive, but they fall far short of showing that every event in the universe is strictly determined to be just what it is by natural factors. All our evidence is equally compatible with the idea that natural causal determination is sometimes, or always, only approximate. ... Thus the results of science might reasonably be taken to suggest a close approximation to natural determinism rather than the full-blows article.”<sup>32</sup>

The underlying issue here is explanatory *underdetermination*. The data to be explained is the success of natural science in understanding the physical world. In studying deterministic physical processes in the classical framework, physicists were able to make considerable progress in understanding nature. One worldview-level explanation for this success is that there really are only deterministic physical processes at work in nature. But Alston argues that other worldviews can also fit the data equally well. For example, we can assume that God upholds regular, deterministic processes in nature, but that he also acts in ways that go beyond the capacities of these processes. Both sides would predict that the processes that the natural sciences can study are deterministic, so the data alone cannot adjudicate between these different models. Rather, choosing the deterministic worldview must be based on philosophical considerations in addition to the science. And as a theist, Alston does not accept these philosophical arguments as valid.<sup>33</sup>

Plantinga argues similarly that no good arguments from classical physics to the impossibility of miracles exists: “[C]lassical science, just by itself, is nowhere nearly sufficient for anti-interventionism or hands-off theology. What’s really at issue, rather, is a *Weltanschauung*, a sort of world picture suggested by classical science, endorsed by many influential eighteenth- and nineteenth-century figures, and still accepted by these theologians.”<sup>34</sup> Like Alston, Plantinga argues that the deterministic picture of the world is not required by classical science: “[I]t is not part of Newtonian mechanics or classical science generally to declare that the material universe is a closed system. You won’t find that claim in physics textbooks – naturally enough, because that

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<sup>32</sup> Alston, “Divine Action,” 49.

<sup>33</sup> Against this argument, it might be objected that even if the deterministic worldview is not a necessary conclusion from classical physics, it is nevertheless a reasonable conclusion, and perhaps even the most reasonable conclusion. Deterministic physics is successful in many different situations and many different levels of complexity. Based on this, it can be argued that we should assume that the same kind of explanations should apply at all levels. The arguments for the descriptive incompleteness of physics are meant to undercut this type of response. If physics itself contains an admission of its incompleteness (in the form of *ceteris paribus* conditions), then resisting this inference from determinism-in-physics to determinism-in-worldview becomes easier. The best philosophical case from physics to a deterministic worldview is perhaps that of Jaegwon Kim, *Physicalism, or Something Near Enough*. (Princeton: Princeton University, 2008); see also David Papineau, “The Causal Closure of the Physical and Naturalism.” *The Oxford Handbook of Philosophy of Mind*. Ed. B. McLaughling, A. Beckermann, and S. Walter. (New York: Oxford University, 2009. Pages 53-65.)

<sup>34</sup> Plantinga, *Where the Conflict Really Lies*, 76.

*claim isn't physics, but a theological or metaphysical add-on. (How could this question of the causal closure of the physical universe be addressed by scientific means?)*"<sup>35</sup>

In effect, Alston and Plantinga are throwing down the gauntlet to those who believe that classical science contradicts belief in miracles. They are asking to be shown the argument for the inevitability of the deterministic picture of the world, if we accept classical physics. In their judgment, all such metaphysical pictures of the world will have to depend on more than just physics. Because of this, the contradiction is rather between a certain broader deterministic worldview and faith in miracles rather than between natural science and faith in miracles as such. So, according to Alston and Plantinga, taking classical science seriously does not require one to accept the deterministic worldview or the causal closure of nature. There are indeed many different arguments for causal closure, but the point is that they are philosophical arguments, and that the point needs to be argued, rather than assumed. In my own view, the arguments for causal closure are not convincing.<sup>36</sup>

Here I already want to point out one commonality in the way Alston/Plantinga and many members of the theology and science community argue, and which helps clarify the argument. In the theology and science community, it is common to distinguish between methodological and metaphysical naturalism, particularly when criticizing atheistic interpretations of evolutionary biology, and when responding to the arguments of the Intelligent Design movement.<sup>37</sup> Methodological naturalism refers simply to the thesis that science is limited to the study of natural causes, whereas metaphysical naturalism refers to the thesis that only such natural causes exist. One explanation for the fruitfulness of natural explanations in biology is that reality really is naturalistic – nothing beyond natural causes needs to be taken into account, because nothing else exists. But this philosophical interpretation of methodological naturalism is largely rejected by the theology and science community.<sup>38</sup>

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<sup>35</sup> Plantinga *Where the Conflict Really Lies*, 79.

<sup>36</sup> See further in e.g. Daniel von Wachter, "Why the Argument from Causal Closure against the Existence of Immaterial Things is Bad." In *Science - A Challenge to Philosophy?*. Ed H. J. Koskinen, R. Vilkkko and S. Pihlström. Frankfurt/M.: Peter Lang, 113-124. 2006.

<sup>37</sup> See e.g. Russell, *Cosmology from Alpha to Omega*, page 325, note 40. For further documentation of the discussion between ID and theistic evolutionism, see Erkki Vesa Rope Kojonen, *The Intelligent Design Debate and the Temptation of Scientism*, Routledge 2016, and "Tensions in Intelligent Design's Critique of Theistic Evolutionism." *Zygon: Journal of Religion and Science*. Vol. 48. No. 2. 251-273.

<sup>38</sup> For further discussion of methodological naturalism from a theistic perspective, see Erkki Vesa Rope Kojonen, "Methodological Naturalism and the Truth Seeking Objection." *The International Journal for Philosophy of Religion*. DOI: 10.1007/s11153-016-9575-0 . 2016.

This is very similar to the argument Plantinga and Alston make. One explanation of the fruitfulness of deterministic physics would be to say that reality as a whole is deterministic. But Plantinga and Alston argue that determinism on the level of physics does not need to imply determinism on the level of our worldviews. Just as with the move from methodological to metaphysical naturalism, the move from determinism in physics to determinism as a worldview is argued to be an unnecessary philosophical interpretation of science. Even though metaphysical naturalism and metaphysical determinism have some explanatory power as worldviews, it can still be argued that some other worldview is overall better. This similarity in arguments is unaffected by the fact that Plantinga himself rejects methodological naturalism, and argues for the need of a theistic “Augustinian science”, which would also allow for arguments like Intelligent Design.<sup>39</sup>

### *Some Critiques of Plantinga*

In his critique of Plantinga, philosopher of physics Hans Halvorson acknowledges that scientific laws may indeed have “other things being equal” -provisos. However, Halvorson goes on to argue that these provisos may not be of the right nature to support Plantinga's argument. Typically when speaking of “open” and “closed” systems physicists do not mean to speak of openness to God. Rather, open systems means subsystems of larger physical systems, which are assumed to be themselves subject to the laws. “*But since God is not physical, the universe is not a subsystem of some larger physical system.*”<sup>40</sup> “*I don't think 'has energy e' is a predicate we should apply to God.*”<sup>41</sup> In his own SATURN paper, Robert J. Russell makes largely the same criticism: Plantinga appears to be equivocating between a theological and scientific meaning of the words “open” and “closed.” When physicists speak of open and closed systems, they do not mean to say anything about divine action. Russell concludes that Plantinga's terminology is not helpful. Ignacio Silva builds on Halvorson's criticism, and argues that Plantinga's argument here would make God into a “cause among causes”, rather than recognizing the metaphysical nature of theological claims.<sup>42</sup>

Based on my own reading of the arguments, it seems to me that though these criticisms highlight the need of clarification, they do not answer the central point Alston and Plantinga are attempting to make. They are arguing that because of the *ceteris paribus* clauses that the laws of

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<sup>39</sup> See Plantinga, “When Faith and Reason Clash: Evolution and the Bible.” *Christian Scholar's Review*. Vol. 21. No. 1. 8-32. 1991. For a defense of Plantinga's argument, see Del Ratzsch, “Stenmark, Plantinga and Scientific Neutrality.” *Faith and Philosophy*. Vol. 21. No. 3. 353-365. 2004. For a critique of theistic science, see Mikael Stenmark, *How to Relate Science and Religion: A Multi-Dimensional Model*. (Grand Rapids, MI: Wm. B. Eerdmans, 2004), chapter 9.

<sup>40</sup> Halvorson, “Plantinga on Providence and Physics”, 25.

<sup>41</sup> Halvorson “Plantinga on Providence and Physics”, 24.

<sup>42</sup> Ignacio Silva, “Great Minds Think (Almost) Alike: Thomas Aquinas and Alvin Plantinga on Divine Action in Nature.” *Philosophia Reformata*. Vol. 79. No. 1. 2014. 8-20.) Pages 13-14.

physics have (and because of many other reasons related to the philosophy of science), it seems that physics itself includes an admission of its descriptive incompleteness. The *ceteris paribus* clauses seem to admit that we need to understand all the factors affecting a given physical state before scientific predictions can be made. The point Alston and Plantinga are making is simply that when analysed philosophically, the same logic should also lead us to think that we cannot predict anything about the impossibility of divine action based on the natural sciences. If divine action is affecting the system, then all things are not equal, and the philosophical background conditions needed for reliable scientific predictions are not met.

Therefore, it seems to me that equivocating between the scientific and theological meanings of the terms “open” and “closed” is not essential Plantinga's argument. It can still be argued that deterministic physical laws cannot generate reliable predictions when some important unknown factor is present. It is true that in the context of a deterministic worldview, all possible unknown factors are also assumed to be deterministic. But this does not appear to be a conclusion that can be generated based on physics alone, but is a philosophical assumption that is brought to physics from outside science. Halvorson himself agrees with this general conclusion and argues for the descriptive incompleteness of physics: "*The take-home point of these examples . . . is that scientific theories don't bear their metaphysical implications on their sleeves.*"<sup>43</sup>

Furthermore, let us agree with Russell that the scientific terms “open” and “closed” indeed have a different meaning from the theological and metaphysical understanding of “open” and “closed”. This allows for another critique of the deterministic worldview. If the scientific terms carry no theological meaning, then it follows that we cannot make theological conclusions based on science alone. Rather, the theological meaning of scientific results must always be a meaning that is interpreted through some philosophical or theological framework. It follows from this separation between the theological and scientific meaning of the terms that we cannot construct an argument purely from the natural sciences for the impossibility of miracles. So, if we reject Plantinga's terminology because of Russell's critiques, we will thereby have other grounds for affirming Plantinga's conclusion.

The final objection to Plantinga was the suspicion that his argument makes God into a “cause among causes”. However, it seems to me that Plantinga's argument does not actually require us to claim that “God has energy  $e$  at time  $t$ ”. Plantinga is simply claiming that God has the ability to create energy, rather than claiming that God himself can be described in scientific terms. His argument does imply that some results of divine action can be described in scientific terms, such as “energy  $e$  appeared in the system at time  $t$ ”. But this itself seems compatible even with Thomist

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<sup>43</sup> Halvorson, “Plantinga on Providence and Physics”, 26.

theology. As Silva argues, Aquinas agrees that God has the ability to create the effects of secondary causes, without implying that God himself is a secondary cause. Rather, when God acts miraculously to create such effects, he is doing so as a primary cause. I do not see why Plantinga could not also formulate his position in a similar way.<sup>44</sup>

One problem with the Alston/Plantinga argument is that the argument functions mostly on the epistemic level, and asks whether science influences the possibility of rational belief in miracles. I think we should also be interested in ontological question as well: Why is it that the laws of nature need to be described using such *ceteris paribus*-language? There are several possible explanations. Our theories about nature are still very incomplete and provisional, so it could be that there actually are universal, exceptionless laws of nature that govern all of nature. However, it is also possible that this whole understanding of the laws of nature has to be changed. For example, perhaps the laws should be understood as descriptions of the causal attributes of natural entities.<sup>45</sup> Here Steven Horst takes the argument for the possibility of miracles much further than Plantinga.<sup>46</sup> Furthermore, it can be asked how the laws of nature relate to the Creator and human agents ontologically. On this level the argument for the possibility of miracles can benefit from new developments in the natural sciences, and the philosophical analysis of what these developments mean for our ontology of nature.<sup>47</sup>

## **PART II: Some Connections to the Divine Action Project**

### ***Divine Action and Human Action***

As I mentioned in the introduction, the assumption of the incompatibility of deterministic science and special divine action has not typically been challenged in the theology and science community. Nevertheless, it seems to me that there are many places where members of the divine action project

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<sup>44</sup> Silva, "Great Minds Think (Almost) Alike", pages 13-14.

<sup>45</sup> See the discussion in Horst, *Laws, Mind and Free Will*, chapters 4 and 5.

<sup>46</sup> Horst, "Miracles and Two Accounts of Scientific Laws."

<sup>47</sup> In previous work not written directly to address this controversy, Russell agrees that this kind of alteration of the concept of "a law of nature" strategy is in principle possible, and also tends towards a descriptive view of the laws of nature. However, Russell also reasons for caution: "Such a move might save the day for theology, but it only does so by threatening to end the discussion with science." (*Cosmology from Alpha to Omega*, 120.) I tend to think that the discussion between theology and science should use the most credible concepts of the "laws of nature", and this credibility can be evaluated on scientific, philosophical and theological criteria.

also come quite close to the idea that physics is descriptively incomplete. A central area is the discussion on human action and the analogy between human and divine action.

Human action is an area where the thesis of the descriptive incompleteness of physics has traditionally been vigorously defended. A common response to the reductionism and determinism of Newtonian physics already in the Enlightenment was to divide reality into two different realms – the humanities and the natural sciences. This division has sometimes been taken too far, ignoring the embodied nature of human persons and the connections that exist between the different disciplines. But it does seem clear that at present, it is very difficult to conceive how the humanities could be reduced to the physical sciences. No matter how much physicists believe in the superiority of physics over the humanities, department meetings are still conducted in intentional and personal language, not using neutral physical descriptions.<sup>48</sup>

In the theology and science community, the relationship of different academic disciplines has often been understood as a kind of hierarchy. For example, Arthus Peacocke does argue that fields “higher” in his hierarchy such as biology, psychology and theology are constrained by the “lower” levels such as physics. But he nevertheless argues that the higher fields do not reduce to the lower. This means that physics is indeed descriptively incomplete, and does not exhaustively describe biological, psychological, social and theological reality.<sup>49</sup> To be clear, for Peacocke the possibility of this type of emergence is underwritten by the new physics. But historically the explanation for how there can be emergence has come only after the recognition that emergence indeed exists. The humanities have resisted reductionism long before the emergence of the new physics. If this is coherent, then one can ask if the descriptive incompleteness of physics in the case of divine action could also be recognized even before the new physics.<sup>50</sup>

As Nancey Murphy argues, it seems that in human action we see top-down causation instead of the bottom-up causation studied in physics. It is hard to see how this fits into the old reductionistic and deterministic worldview where deterministic, bottom-up physics governs all of reality. Yet the existence of this type of top-down causation was already clear before the emergence of the new physics.<sup>51</sup> It is also interesting that the relationship of the study of human action

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<sup>48</sup> I owe this example to Risto Saarinen (private conversation).

<sup>49</sup> Peacocke, *Theology for a Scientific Age*, 217. See figure 3.

<sup>50</sup> Those who argue that the natural sciences are the only reliable way to formulate rational beliefs of course disagree with this. However, this kind of scientism is very difficult to defend, and clearly there is rationality also outside of the natural sciences. See Mikael Stenmark, *Scientism: Science, Ethics and Religion*. (Burlington, VT: Ashgate, 2001).

<sup>51</sup> See Nancey Murphy, George F.R. Ellis, & Timothy O'Connor (Eds.), *Downward Causation and the Neurobiology of Free Will*. Series: Understanding Complex Systems. (New York: Springer, 2009). Arguments against the deterministic worldview as a conclusion of physics have also been developed within the philosophy of mind. It is interesting to note that some of these parallel the arguments Alston and Planting make for the possibility of divine action. For example, Barbara Montero critiques several arguments for “causal closure”, the thesis that “every physical phenomenon that has a sufficient cause has a sufficient physical cause” or even that “no causal chain will ever cross the boundary between the physical and the non-physical”. Barbara Montero, “Varieties of Causal Closure.” *Physicalism and Mental Causation: The Metaphysics of Mind and Action*. Eds. Sven Walter & Heinz-Dieter Heckmann. (Imprint Academic, 2003.)



(psychology) to the natural sciences faces similar questions as the study of divine action in relation to the natural sciences. Defending the importance of psychology also requires responding to the same deterministic arguments.<sup>52</sup>

Although Peacocke mainly writes of the dependence of the higher fields on the lower, one could also argue (following Robert J. Russell's maxim that truth implies possibility)<sup>53</sup> that things that are clearly possible on the higher level must also be physically possible. One example of this comes from the apparent conflict between physics and biology in the 19<sup>th</sup> century. The esteemed physicist Sir William Thomson (Lord Kelvin) argued that the age of the universe could be at most 500 million years and probably no more than 100 million years, because this seemed to be necessitated by his understanding of solar physics.<sup>54</sup> However, this timeframe was far shorter than that required by biological evolution, and so evolutionists did not accept this interpretation of physics. It seems that here, the evidence from a higher field of study gave a good reason to doubt our theory of a lower field, or our understanding of the implications of this lower field. It can give us a clue that maybe what is said to be pure physics is actually just an interpretation of physics.

In the same way, even without the new discoveries in physics, data in psychology and theology could perhaps give reason to doubt the deterministic worldview as just one interpretation of Newtonian physics, or perhaps even to doubt Newtonian physics itself. John Polkinghorne writes that *"there was always something suspicious about [the deterministic clockwork-like interpretation of the universe] since human basic experiences of freedom and choice surely show that, though we are inhabitants of the physical world, we are not mere automata."*<sup>55</sup>

The analogy with human action has also been used in the philosophical arguments for the possibility of miracles. Larmer, for example, argues that *"miracles are, in an important sense, analogous to acts of human agents."*<sup>56</sup> *"If human agents are able to act in ways that produce exceptions to the regularities of nature, which would not otherwise occur, it is reasonable to hold that a divine agent is likewise capable of doing so. If human agents can produce such exceptions without violating the laws of nature, it is reasonable to hold that a divine agent can do likewise."*<sup>57</sup>

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The papers of Ted Peters and Veli-Matti Kärkkäinen in the SATURN volume also analyse the issue of human freedom in relation to the results of the neurosciences extensively.

<sup>52</sup> Horst, *Laws, Mind and Free Will*, presents a good critique of the strict understanding of the laws of nature in favour of understanding the laws as limited models of reality.

<sup>53</sup> Russell, "Cosmology from Alpha to Omega", page 304: "If it is impossible, it cannot be true. But if it is true, it cannot be impossible." See also Ted Peters, "Robert John Russell's Contribution to the Theology & Science Dialogue." *God's Action in Nature's World: Essays in Honor of Robert J. Russell. Ashgate Science and Religion Series*. Ed. Ted Peters & Nathan Hallanger. (Vermont: Ashgate, 2006. Pages 1-18.) 13-14.

<sup>54</sup> Sir William Thomson (Lord Kelvin), "On the Age of the Sun's Heat." *Macmillan's Magazine*. Vol. 5. (March 5). 388-393. 1886. Available at <[http://zapatopi.net/kelvin/papers/on\\_the\\_age\\_of\\_the\\_suns\\_heat.html](http://zapatopi.net/kelvin/papers/on_the_age_of_the_suns_heat.html)>. Accessed on June 11, 2014.

<sup>55</sup> John Polkinghorne, "Physics and Theology." *Europhysics News*. Vol. 45. No. 1. 28-31. 2014. Page 30.

<sup>56</sup> Larmer, *Water into Wine*, 23.

<sup>57</sup> Larmer, *The Legitimacy of Miracle*, 157.

Larmer is arguing that the actions of human agents are just as undescribed and unpredictable from the point of view of (Newtonian and other) physics as divine acts. In the terms used in this paper, if the thesis of descriptive incompleteness holds in the case of human action, it becomes much easier to suppose that it also holds in the case of divine action. The actions of a surgeon in removing a tumor, or the actions of a human catching a stone mid-flight are not predicted by the laws of nature, but neither are they in contradiction with the laws. It is simply an event which involves an agent, and so involves a factor which physics does not attempt to wholly describe. If so, why should the divine action to remove a tumor necessarily involve a breaking of the laws, rather than simply as an event which goes beyond what physics is meant to describe?<sup>58</sup> The point of the analogy is not to say that human action and divine action are absolutely similar; obviously God acts in the world in a different way than humans, since he is not limited to a body like humans are, but is omnipresent. But it does argue that when the unpredictable actions of agents cause some scientific prediction about the world to go unfulfilled, this does not imply a violation of the laws of nature. It simply means that not all factors were included in our scientific model, or even could be included in it.

If special divine action is the only place where Newtonian deterministic physics is thought to be descriptively incomplete, this can feel like special pleading. But if the thesis of the descriptive incompleteness of the natural sciences holds in the case of human action, then applying the thesis also to divine action seems more plausible. So, in this way the analogy with human action could potentially help the case for the possibility of special divine action and miracles. Of course, the converse is also true: admitting the possibility of divine action despite deterministic physics could help us also accept the reality of human action.

The evaluation of the significance of this analogy with human action is dependent on whether we really believe in top-down causation in the case of humans. If we also accept the deterministic, reductionistic worldview in the case of humans, then the analogy with divine action breaks down. However, if the deterministic worldview indeed requires the denial of the possibility of any kind of free human action, this is a very high price to pay. As Polkinghorne's quote above indicates, involves rejecting very basic human experiences. Conor Cunningham argues that eliminative naturalism must empty the world of everything that it cannot explain, but this leaves a very empty and practically unlivable world.<sup>59</sup>

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<sup>58</sup> I owe the example of the stone to Andrew Pinsent (private conversation).

<sup>59</sup> Conor Cunningham, *Darwin's Pious Idea: Why the Ultra-Darwinists and Creationists Both Get it Wrong*. (London: Wm. B. Eerdmans, 2010). Cunningham argues that eliminative naturalism is the *reductio ad absurdum of naturalism*. I agree that the eliminativist position is highly problematic, but am not yet convinced by Cunningham's argument that eliminativism is the most consistent form of naturalism. If I personally were a naturalist, I would much rather choose a position like Colin McGinn's mysterianism, and simply believe that the possibility of human freedom is real, though it is mysterious on naturalism. (See e.g. Colin McGinn, *The Mysterious Flame: Conscious Minds in a Material World*. New York: Basic Books, 1999.) Yet acknowledging the mysterious nature of the cosmos should also lead us to be sceptical of claims that this incomplete science demonstrates to the impossibility to divine action.

In any case, such a reduction must at this point remain based on more than just the results of science. Based on our current evidence, human agency does appear to be able to affect the world in ways that physics is presently incapable of predicting as part of its theories, and where agency is involved, physical predictions become subject to uncertainty. The point of the analogy is to call attention to the difficulty of defining the philosophical concept of the "laws of nature" in a way that allows this kind of divergence from predictions, and yet allows us to call miraculous divine acts in the world "violations" of the laws of nature themselves, rather than merely violation of our fallible predictions based on those laws.

### ***Eschatology and Natural Science***

Not all participants of the divine action project confine divine action to the areas made possible by the new physics. For example, despite some disagreements with Plantinga, Russell's analysis of the relationship between Christian eschatology and natural science comes quite close to Plantinga's analysis of miracles. Russell notes that there is a discrepancy between the predictions of the future made by natural science and the Christian eschatological hope, if the hope of resurrection is understood objectively. Cosmology would lead us to expect the cosmos to "freeze or fry". But "*if the predictions of contemporary cosmology come to pass then the parousia will not just be 'delayed', it will never happen.*"<sup>60</sup> Russell's own solution to the problem is to argue that the challenge is not actually from science but "*from a philosophical assumption which we routinely bring to science, namely that scientific predictions hold without qualification.*"<sup>61</sup> Russell argues, following William Stoeger<sup>62</sup>, that the laws of nature are best understood as descriptions of nature, not as prescriptive ontological necessities of nature. If they are descriptive, then the scientific prediction of the future will not come to pass as an ontological necessity. It only accounts for what will happen if only presently operating natural forces influence the outcome, but the actual future will be determined by divine action that cannot be predicted by natural science: "*The cosmic far future will be based on a radically new kind of divine action which began with the resurrection of Jesus, and this new act of God cannot be reduced to, or explained by, the current laws of nature, that is by God's action in the past history of the universe.*"<sup>63</sup>

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<sup>60</sup> Russell, *Cosmology from Alpha to Omega*, page 306.

<sup>61</sup> Russell, *Cosmology from Alpha to Omega*, 307.

<sup>62</sup> S. J. Stoeger, 1996. "Contemporary Physics and the Ontological Status of the Laws of Nature." *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action*. 2<sup>nd</sup> edn. Eds. Russell, Robert J.; Murphy, Nancey and Isham, Chris J. Vatican City State: Vatican Observatory Foundation; Berkeley: Center for Theology and the Natural Sciences. 209-234. See also Jan Hilgevoord (Ed), *Physics and Our View of the World*. (Cambridge: Cambridge University, 1994.)

<sup>63</sup> Russell, *Cosmology from Alpha to Omega*, 307.

Though Russell does not explicitly refer to the idea of the descriptive incompleteness of physics, the idea seems to be implied by his argument, since not all of the future is described by physics, and there is therefore much that cannot ever be subsumed under physics. Russell argues here that scientific predictions are not based just on natural science, but also on the philosophical assumption that only factors which science can predict are involved. For Russell, Christian eschatology does not contradict natural science itself, but rather the conjunction of natural science and this philosophical assumption. For Plantinga, Christian belief in miracles similarly does not contradict natural science itself, but merely the conjunction of natural science and this philosophical assumption.

However, there are also significant similarities in the way Russell and Plantinga argue. To be clear, Russell himself only applies the strategy to the future, and wants to restrict the explanation of past events to methodologically naturalistic science. But Russell and Plantinga are brought closer by the fact that Russell also does not apply methodological naturalism to all of history. His eschatological argument presupposes that he does not apply methodological naturalism to the physical resurrection of Jesus, though it is a past event that also contradicts scientific predictions about what happens to dead bodies. Russell argues that the resurrection of Jesus is the first instantiation of a new law of nature (FINLON), and the emergence of the new creation involves a fundamental transformation of the order of nature. So our current physics is not able to describe at least the majority of the processes of the New Creation.

In Russell's example, Russell's incompleteness is based on new physical processes in nature, not on additional divine action in current processes of nature. But while this is a difference between Russell and Plantinga, I am inclined to think that the difference does not invalidate the comparison. If God can act even to create a whole new kind of order of nature (and the contrary predictions of physics do not falsify this), then it seems reasonable to think that the predictions of physics also do not need to make miraculous divine action in the past (such as in New testament times) or in the present day impossible. Similar philosophical reasoning underlies the rationality of both the possibility of FINLON and miracles, though what happens in each is different. In FINLON, the entire system of nature is changed, whereas miracles happen within the existing system of nature. And might not other miracles also be understood as instantiations of the new laws of the coming Kingdom of God, albeit on a smaller scale than in Jesus' resurrection?<sup>64</sup>

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<sup>64</sup> The miracles of salvation history could reflect the way all evil and sickness is defeated in the new creation, and the powers of nature no longer threaten human survival. It is a fairly common theological understanding of the Gospels and Acts that miracles function as signs of the future Kingdom, which is already present in the present, but will only fully be realized at the eschaton. See e.g. Luke 10:9; Matthew 12:28; Mark 4:30-32. Russell discusses this "proleptic" character of eschatology in his *Time and Eternity: Pannenberg, Physics and Eschatology in Creative Mutual Interaction*. (Notre Dame: University of Notre Dame, 2012). According to Russell, the eschatological future is revealed particularly in the resurrection of Jesus. In future discussion, it will be interesting to see if the same idea can be applied to other miracles, and what will be the reasons for accepting or rejecting this possibility.

The example of eschatology is interesting, because at this point the new physics does not seem to solve all the problems that physics has been argued to create for theology, nor does anyone claim that it does. Rather, it is clear that philosophical and theological considerations must be appealed to before the problem can be solved. For those who accept traditional eschatology, this opens up the possibility of applying the same philosophical and theological considerations also to the broader problem of miraculous divine action.

### **PART III: Theological Arguments**

#### ***Divine Transcendence vs. Divine Limitations***

Theological reasons might also motivate combining deterministic natural science and belief in the possibility of miraculous divine action. Dutch philosopher and theologian Taede A. Smedes argues that science itself is not that important for the issue. Though Smedes himself is not committed to believing in miracles, he thinks the question is philosophical and theological, rather than scientific. He argues as follows for the conclusion that looking to science to gain knowledge about what God could or could not do is theologically misguided:

From a theological perspective, there are no creaturely limitations to God's action. Because God is not part of the created order, things that limit human action and that are bound up with the created order cannot be limitations for God. If there are limitations to God's power and knowledge, these cannot be forced upon God externally and involuntarily, for, as Colin Gunton writes, "*Whatever constrains God's actions from without is effectively God*". Now, incompatibilism in discussions about divine action assumes that if the created order is closed, God cannot act; thus the created order imposes limitations on what God can or cannot do. In order for God to act, something in the natural order has to give way—hence the active search for irreducible ontological gaps in the causal nexus.

Such an argument implies that God's action and the workings of the natural order are in competition: Creaturely potentials (laws of nature) are in competition with God's potentials, as if the two act on the same level. This argument ignores the categorical distinction between God and the world (that is, God's transcendence). God is the Creator of the universe and therefore of a different order than the creaturely. God cannot be compelled or constrained by the powers inherent in the universe, because God "stands above" the laws of nature, transcends them. Incompatibilism with regard to divine action thus rests upon a category mistake, confusing the

logic implicit in speaking about the natural order with the logic implicit in talking about the order of the divine.<sup>65</sup>

Smedes claims that from a theological perspective, it is mistaken to assume that the laws of nature limit God. The proper theological understanding of the God-world relation should be enough to assure us that God can indeed in principle act in nature (Smedes is unsure of the extent that God actually does act miraculously). Smedes is correct that in classical Christian doctrine, the transcendence of the Creator means that he is other than nature, and is by definition not limited by nature in the same way as human agents and natural processes are. The argument depends on the distinction between logical and physical possibilities. God is not limited by physical possibilities, meaning the capacities inherent in matter. Rather, God is limited only by logical possibilities, because only these types of possibilities can be reasonably taken as arising from God's own divine nature. In the classical understanding, the physical universe is not part of God, and so cannot limit God. So if God does not act miraculously in the world, this is because God himself chooses to limit himself in this way, not because of any feature of the physical laws.<sup>66</sup>

One way to respond to Smedes would be to say that while God was free to create any kind of world he chose, science nevertheless shows that God chose to create a certain kind of regular world, and in creating this kind of regular world God chose not to act miraculously. Traditional theology indeed includes the idea that God has limited himself in creating. In the terms of medieval scholastic theology, there is a well-known distinction between *potentia dei absoluta* and *potentia dei ordinata*. The term *potentia absoluta* denoted God's power in itself, considered without reference to the orders of nature and grace he has actually created. After God has chosen to create a certain type world, some options that were open to his power before this choice have now been closed. Following this understanding, it could be that God has chosen to limit the amount of miraculous divine action in the world, because exceeding some limit would disrupt the orderliness of the world.

However, this response would miss the point of Smedes' argument. The argument that God does not act miraculously because he chooses not to disrupt the orderliness of the world is not a scientific argument, but a theological one. Smedes' point is that scientific study of the regularity of the world is not by itself enough to show that God does not act miraculously, since science cannot study divine motives and how God chooses to use his omnipotence. So we do not necessarily need

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<sup>65</sup> Taede A. Smedes, "Beyond Barbour or Back to Basics? The Future of Science-and-Religion and the Quest for Unity." *Zygon*. Vol 43. No 1. 235-258. 2008; quoting Colin E. Gunton *The Christian Faith: An Introduction to Christian Doctrine* (Oxford: Blackwell, 2002), page 17.

<sup>66</sup> Note that this is different from the idea that God is also not limited by logical possibilities. This would make formulating any theological doctrines impossible. Smedes agrees with the logical limitations of the concept of omnipotence.

to have scientific research indicating a “causal joint” where God could act before we can believe that God acts.

From a Thomistic point of view, Ignacio Silva argues similarly that in Thomas Aquinas' view, the possibility of miracles does not depend on what the laws of nature are like, but on what God is like. *“The basic argument is simple: given that divine power is an infinite power, and that it is not dependent upon any order, there is no reason to think that God cannot act inside the realm of natural things, producing any sort of effect according to His wisdom and goodness.”*<sup>67</sup> Silva argues that in Aquinas' thought, the ability of God to act in the world is not limited by the natural possibilities that we can observe in matter. The question of divine action in the world is metaphysical and theological, rather than scientific. When we understand that all of nature is metaphysically dependent on the Creator as the primary cause, we can also understand that God can do what he wills in nature.<sup>68</sup>

So, the conclusion of these theological arguments is very similar to the previous philosophical ones: there can be no argument from physics to the impossibility of miracles without including some theological or philosophical premise. Whereas Alston, Plantinga and others find grounds from within natural science to argue for the descriptive incompleteness of science, Smedes and Silva argue that theological grounds are already sufficient. If theological and scientific meanings of “possibility” are different, it becomes plausible to argue that scientific impossibility does not imply theological impossibility.

It seems to me that eminent figures in the community have indeed recognized the theological character of the idea of divine action. For example, Polkinghorne writes that the question is not a *“primarily scientific”* issue. *“Science simply tells us that these events are against normal expectation. We knew this at the start. Science cannot exclude the possibility that, on particular occasions, God does particular, unprecedented things. After all, God is the ordainer of the laws of nature, not someone who is subject to them..”* Here Polkinghorne also makes a theological argument for the possibility of miracles that mirrors those of Smedes and Silva.<sup>69</sup>

There are of course theological viewpoints that prohibit miracles. For example, perhaps the impossibility of miracles does not stem from a lack of divine freedom imposed from the outside by the laws of physics, but from a divine self-limitation. God could freely choose to act in the world

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<sup>67</sup> Silva, “Great Minds Think (Almost) Alike”, 18.

<sup>68</sup> Silva, “Great Minds Think (Almost) Alike”, 16-18. In the discussion on miracles, several others have also made similar arguments. For example, Craig Keener argues that *“no one who believes in historic montheistic understanding of God would deny the possibility of God influencing the system of nature; such a denial must be predicated on a prior denial of this sort of God”*, and *“if ‘miracles’ by definition have deity as their ‘proximate cause,’ they involve no causal chain incompatible with nature’s normal pattern.”* Keener, *Miracles: The Credibility of the New Testament Accounts*. Vol. 1. (Grand Rapids: Baker Academic, 2011). Page 219.

<sup>69</sup> Polkinghorne, *Quarks, Chaos and Christianity: Questions to Science and Religion*. 2nd ed. (New York: Crossroad, 2006.) Page 100.

only through general providence, rather than through special divine action and miracles. We could argue that a creation that is able to organize without additional divine input is somehow better than a creation which requires additional divine action beyond upholding the laws of nature. A machine that does not require repairs to function is better than a machine that requires the constant ministrations of an engineer. Against such arguments, one could present reasons why at least some special divine action in the world is valuable. Furthermore, one could also argue for a different metaphor of the world as a kingdom or a temple, rather than a machine - on these alternative metaphors, special divine action in the world makes much more sense than on the Enlightenment-age machine metaphor.<sup>70</sup>

In any case, it seems correct to say that any discussion on how God acts must also include some account of the divine nature in relation to the world. Smedes and Silva are correct in pointing out that in the traditional understanding, God has in himself the ability to act within nature, even miraculously if he so chooses. But the clear importance of theology for the discussion does not mean that the question of miracles is only a theological issue. The existence of theological arguments for the possibility of miracles does not make philosophical and scientific argument without value. To argue otherwise would, in my view, underestimate the epistemic value of consilience (many independent arguments coming to the same conclusion). Scientific arguments are also of value in the discussion over the ontological understanding of the laws of nature, as discussed previously in the article.<sup>71</sup>

Though the new physics does not seem to be required for belief in special divine action, it can still help conceptualize the issues in a clearer manner. In Russell's understanding, dialogue with the natural sciences can provide a more robust and diverse model of divine action, enabling us to understand how God acts in nature even outside of his general providence and his miracles. Russell argues that the new physics makes it possible for us to have a whole new concept of divine action, in which God works through quantum events, so that his activity in nature is invisible to the natural sciences. Thus indeterminism helps us conceptualize more subtle ways in which God could act in nature, without always coming into conflict with even scientific predictions about the world. Russell's NIODA shouldn't be understood to be the kind of scientific thinking that Smedes criticizes, because NIODA does not assume that belief in the possibility of divine action is primarily based on the sciences. Rather, Russell presents NIODA as a new theological possibility that is opened by advances in science, as "mutual creative interaction" between theology and science.

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<sup>70</sup> For similar reflections, see Michael J. Murray, "Natural Providence: Reply to Dembski." *Faith and Philosophy*. Vol. 23. No. 3. 337-41. 2006)

<sup>71</sup> See Mikael Stenmark, *Scientism: Science, Ethics and Religion*. (Burlington: Ashgate, 2001.)



## *Conclusions*

If we had just classical deterministic physics, would we be justified in rejecting miracles? In this article, I have analyzed some defenses of the compatibility of classical science and special divine action, even up to miracles. Whereas the contemporary divine action-project has focused on the importance of new scientific developments, some philosophers of religion have focused on philosophical and theological defenses of the possibility of miracles.

In this article, I focused mostly on philosophical arguments for the possibility of belief in miracles. The gist of the argument is that the natural sciences must be interpreted through some philosophy or even theology before the impossibility of miracles can be claimed. It is argued that it remains possible to interpret the results of the natural sciences from a theistic perspective, because the natural sciences only claim to be able to describe what happens to a system when it can be assumed that only known natural factors affect the system. If God or human agents affect the world in a way that causes physical results, then the philosophical background conditions for successful scientific predictions are not met, and it is not accurate to speak of a conflict between science and theology.

A major concern of my article was to build bridges between these analytic philosophers of religion and members of the theology and science community. I claimed that the argument that physics is descriptively incomplete finds interesting parallels in the theology and science discussion. The hierarchical understanding of the relationship of the various sciences can be formulated to allow that physics cannot describe everything, and that there are emergent levels of reality which can in turn affect reality in ways that are not described by physics alone. The theology and science community grounds this understanding in the new, non-deterministic physics, but it seems that human freedom was already a signal of the need of understanding physics as a descriptive incomplete discipline. Furthermore, Russell's holding on to a traditional Christian eschatology in the face of cosmological predictions also requires questioning the philosophical background assumptions of scientific predictions. These and other factors create common ground between the philosophical discussion and the discussion within the theology and science community.

Arguments from the natural sciences are not the only reason to question the reality of miracles. Theological and philosophical reasons, such as the problem of evil, may in practice be even more important. Nevertheless, the discussion shows that drawing metaphysical and theological conclusions from classical physics is not as simple a matter as many have argued. Those who continue to hold that the deterministic science and belief in miracles are in conflict need to clarify their philosophical assumptions.