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Divine Action and the *Imago Dei*
Coordinating doctrine and contemporary science

Introduction

A passage from Kenneth Miller's book, *Finding Darwin's God*, exemplifies the difficulty of integrating a "scientifically legitimate" understanding of divine action with a meaningful theology of the *imago Dei*, or the "image of God." Accepting Stephen Jay Gould's claim that evolution has no particular direction and that the appearance of humans is a contingent outcome, Miller argues for a somewhat deistic conception of God's involvement in the universe (at least up to the time of humans) that is compatible with evolution's lack of intentionality.¹ Miller, a biologist as well as a committed Catholic, suggests that God endowed the cosmos with laws that would be favorable to the evolution of life by natural processes, and then God made the universe large enough so that the development of intelligent, conscious life was essentially inevitable.² God created the world and then essentially sat back and waited for sophisticated life to evolve somewhere in the universe. Miller recognizes that this limited view of God's involvement in the evolutionary process jeopardizes more naïve views of the *imago Dei* that see the many contingent properties of the human form as imaging God. He writes:

...do we have to assume that from the beginning [God] planned intelligence and consciousness to develop in a bunch of nearly hairless, bipedal, African primates? If another group of animals had evolved to self-awareness, if another creature had shown itself worthy of a soul, can we really say for certain that God would have been less than pleased with His new Eve and Adam? I don't think so.³

As the proposed level of divine action and involvement in natural history is limited in order to make theology more consistent with evolutionary theory, the content of the doctrine of the *imago Dei* must also grow more "thin."⁴ Human properties that were seen to image God, at least according to some "thick" understandings of the *imago Dei*, are now excluded as being irrelevant to the doctrine because of their contingent character.

But Miller does not want to totally dismiss the notion of the *imago Dei*, despite his extremely limited

1 Kenneth Miller, *Finding Darwin's God* (New York: HarperCollins, 1999), 272.

2 Ibid., 275.

3 Ibid., 274.

4 In a following section of this paper, I will provide precise definitions of the terms "thick" and "thin" as applied to the *imago Dei*.

notion of God's involvement in natural history; after all, God must have chosen humanity for *some* reason, so there may be some real ways in which humans image God. Miller identifies our minds and our "moral senses and faculties" as the content of the *imago Dei*—not a surprising suggestion given the long history of associating the *imago Dei* with human rationality.⁵ But Miller goes on to elaborate this claim in a surprising way. Miller mentions that "some doubt the validity of the quantum picture of matter, suggesting that the submicroscopic world seems strange only because our brains have evolved to function in the macroscopic, 'big' world of everyday events."⁶ He then claims, on the basis of the *imago Dei* doctrine, that we can be confident that these pessimists are wrong, and that our minds do possess the ability to eventually understand nature and science at all its levels. Thus, while Miller dismisses the idea that specific *physical* traits are included in the image of God because of their contingent nature, he has no problem arguing that a very specific (and thoroughly contingent) *mental* capacity is included in the traits that image God.

Miller tries to preserve a relatively specific, content-rich view of the *imago Dei*, which includes specific mental traits, even though this view of the *imago Dei* appears to sit uneasily with his notion of a God who leaves evolution to its directionless course, never intervening to favor one evolutionary pathway over another. We are left wondering whether this hands-off God could guarantee that the "ability to accurately comprehend the quantum world" would arise somewhere in the universe. And even if it has arisen somewhere in the universe, how do we know that that "somewhere" is planet Earth? Perhaps we are merely the second best creatures in this universe, lacking some of the ideal components of the *imago Dei*, but God decided to give us a soul anyway.

Miller's understanding of divine action, crafted to fit with science and evolutionary theory, seems to be in tension with the thick, content-rich view of the *imago Dei* he employs. As if this problem wasn't difficult enough, a theology of divine action and the *imago Dei* will not only have to engage with evolutionary theory, but it will also have to engage the biblical witness of God as one who responds to prayer and who (at least sometimes) works extraordinary miracles. Can the active God of the Bible be

⁵ Miller, 274.

⁶ *Ibid.*, 274-275

the same God that Miller suggests has a “hands off” approach to evolution and natural history?

In this paper, I will explore whether a theologically sound theory of divine action can be articulated that does justice to the biblical witness, respects the integrity of science and evolutionary theory, and allows for a “thick” view of the *imago Dei*. In light of these criteria (which I explain and defend below), I will evaluate the three basic approaches to divine action: uniformitarian views that deny the reality of “objectively special divine action,” interventionist views that affirm objectively special divine action as God’s action from *outside* the system of natural laws and processes, and non-interventionist views that affirm objectively special divine action while insisting that God only works *within* the system of natural laws and processes.⁷

Biblical and scientific criteria

My evaluation of theories of divine action will be focused on three criteria: compatibility with the biblical witness, with scientific and evolutionary theory, and with a thick view of the *imago Dei*. There are, to be sure, other important criteria that could be used to evaluate these different approaches to divine action. Most notably, some approaches to divine action are accused of worsening the theodicy problem. Unfortunately, an adequate treatment of theodicy considerations is beyond the scope of this paper. But the criteria described below are all important considerations for a theory of divine action, and together they present difficulties that merit exploration.

1. Compatibility with the biblical witness

Nancey Murphy argues that any theory of divine action that is “to do justice to the Christian tradition” must be compatible with objectively special divine acts as well as extraordinary divine acts.⁸ Objectively special divine acts are acts that, at least from the standpoint of faith, can be identified as unique acts of God that go beyond God’s normal action of sustaining the existence of the universe and

⁷ For a clear presentation of this typology of positions on divine action, see Robert John Russell, “Introduction,” *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell et al. (the Vatican: Vatican Observatory publications, 1995), p. 9-13.

⁸ Nancey Murphy, “Divine Action in the Natural Order” in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell et al. (the Vatican: Vatican Observatory, 1995), p.330-332.

the regularities of the scientific laws. Murphy suggests that Christian doctrine requires special divine acts since knowledge of who God is depends on knowing God's actions. She also argues that petitionary prayer, an essential Christian practice, depends on the reality of special divine acts. But Murphy also insists that a theory of divine action must allow for "extraordinary divine acts," a phrase she uses to refer to events traditionally described as "miraculous," since the resurrection of Christ is central to the Christian tradition. Because the idea that God acts in special ways (e.g. through revelation and answered prayers) and in extraordinary ways (e.g. through the incarnation and resurrection of Christ) is central to the biblical witness, I will adopt Murphy's suggestion that compatibility with such acts be required of a theory of divine action.

2. *Compatibility with science and evolutionary theory*

In her discussion of scientific requirements for a theory of divine action, Murphy rightly argues that any view of divine action must be compatible with the results of scientific research and must also not contain premises inimical to the practice of science.⁹ The Christian world view, which presupposes the goodness of creation, the "otherness" of God (whose creation might not be understandable by mere philosophical reflection), and also the rationality and goodness of God (whose creation will likely be well-ordered, stable, and intelligible to humans), has often been credited with a role in the rise of modern science.¹⁰ Any theology that ignores the findings of science or undermines the basis for its practice will not only lack intellectual credibility but will do harm by suggesting a false dilemma, in which science and Christianity are adversaries. For this paper, this means that a theory of divine action must respect scientific findings in general and evolutionary theory in particular. Unless there is an inescapable contradiction between Christian belief and basic evolutionary theory, Christian theology should not challenge the basic neo-Darwinian framework as long as that framework remains the dominant consensus among the vast majority of scientists. However, Christians should also be wary of too closely wedding theology to science. Scientific theories are sometimes significantly modified or even discarded, so any theory of divine action that depends on a particular scientific theory should be held in a

⁹ Murphy, 333-334.

¹⁰ Diogenes Allen, *Christian Belief in a Postmodern World* (Louisville: John Knox Press, 1989), p. 23-34.

provisional way.

The explanation of the third criterion is involved enough that it merits its own section.

The third criterion: Compatibility with a “thick” view of the *imago Dei*

In this section, I will first define what I mean by a “thick” view of the *imago Dei*; second, I will argue that a thick understanding of the *imago Dei* need not imply a substantive interpretation of the image of God, but is also compatible with functional and relational interpretations; third, I will discuss the problems posed by a thick view of the *imago Dei* to a theory of divine action; and finally, I will explain why compatibility with a relatively thick view of the *imago Dei* should be among the criteria used in evaluating alternative views of divine action.

An understanding of the *imago Dei* is “thick” if it suggests that there is a specific trait or bundle of traits that humanity must possess if it is to truly be in the image of God. The more traits that are named, and the more specificity those traits are given, the thicker the view of the *imago Dei*. For example, Miller claims that the *imago Dei* not only implies that the human mind must be rational, but that it must be rational in such a way that it can conceivably grasp the way the universe works, even on the smallest, submicroscopic levels. To this extent, Miller has a thick view of the *imago Dei*. A thin view of the image of God, on the other hand, claims that the *imago Dei* presupposes very few traits, or requires very little specificity of the traits that are presupposed. For example, a view that says the *imago Dei* only implies moral sense would be a thin understanding; if it maintains that the precise nature of this moral sense doesn’t matter, as long as there is any moral awareness, then it is an even thinner view. In short, the more fully a particular conception of the *imago Dei* describes us, in our specificity and in our many dimensions, the thicker that conception of the *imago Dei* is.

A thick view of the image of God will maintain that certain specific traits are necessarily presupposed by the *imago Dei*, but it will not necessarily maintain that these traits in and of themselves are the *imago Dei*, or even that they are the primary way of describing the *imago Dei*. Noreen Herzfeld has described three primary approaches to the *imago Dei*: a substantive approach, which sees the image

of God as primarily meaning the presence of certain traits that in some way mirror God's nature (e.g. rationality); a functional approach, which suggests that the image of God describes humanity's vocation (e.g. to be rulers over creation) rather than its substantive characteristics; and a relational approach, which emphasizes humans' relationship to God and to one another as the primary grounding of the *imago Dei*.¹¹ A thick view of the *imago Dei* presupposes some significant substantive claims, but it will not necessarily have to be a substantive interpretation of the *imago Dei*. In fact, functional and relational interpretations of the *imago Dei* must also entail some significant substantive prerequisites. For example, even if it is what humans do, rather than what they are, that constitutes the image of God¹² (the functional interpretation), carrying out a particular vocation will require exercising certain capacities.¹³ Similarly, if it is relationships (and not the capacity for relationship) that image God, the existence of these relationships will still depend on certain capacities, such as the capacity for speech and the kind of rationality that can support meaningful communication.¹⁴ Almost any meaningful interpretation of the *imago Dei*, then, will need some thickness. It will need to specify at least some general traits that make it possible for humans to image God.

The problem created by a thick view of the *imago Dei*, though, is that it implies that direction and intentionality are part of creation and evolution. If God's motivation for creating the universe was, at least in part, to bring into existence creatures in his image, then a thick view of the *imago Dei* implies that some specific bundle of traits was a goal of natural history. Without specifying how God reached this specific end, a thick view of the *imago Dei* suggests that God did have a specific end in mind. But as

11 Noreen Herzfeld, *In Our Image: Artificial Intelligence and Human Spirit* (Minneapolis: Fortress, 2002), p. 16-31.

12 Ibid., 24.

13 Herzfeld shows that Gerhard von Rad, the original proponent of the functional interpretation, argues against a "substantive interpretation that would endow humans with some quality of God." (23) Rather than any trait mirroring God, the whole person mirrors God when he or she stands in God's stead as a ruler over creation. But even if this is the case, standing in God's stead will require exercising certain capacities. Though the mere existence of these capacities in a person may be an insufficient condition for the *imago Dei*, it is still a necessary condition. This is why some Old Testament scholars who fall in the functionalist camp still talk about "the creative power that we share with God and that permits us to act and create." (Herzfeld, discussing Walter Brueggemann's interpretation of the *imago Dei*, p. 24)

14 Herzfeld, 32. Karl Barth, in arguing for the relational view, asserts that the ability to communicate through speech and word is an essential prerequisite for true relationship. (Herzfeld, 28)

Kenneth Miller reminds us, most scientists view evolution as a directionless process, dependent on scores of chance events that rule out the possibility that any specific bundle of traits could be an inevitable outcome.

A theology of divine action is pulled in opposite directions by this putatively directionless character of evolution and the intentionality implied by a thick view of the image of God. A “hands-off” view of God’s involvement in evolution may be more scientific, but it potentially undercuts God’s ability to bring about the existence of creatures made in God’s image. Perhaps a hands-off God could be assured that creatures with some sort of rationality would arise somewhere in the universe (though, as we will see, this is highly contested). But could a hands-off God be assured that somewhere creatures would arise who possessed the ability to accurately understand the submicroscopic world, along with a host of other highly specified mental capacities? That seems less likely. Increasing the thickness of the *imago Dei* makes it more difficult for a theory of divine action to coordinate this doctrine with evolutionary theory.

But why judge a theory of divine action by its compatibility with a thick view of the *imago Dei*, when dispensing with such a view would alleviate the problem at hand? If the view of the *imago Dei* becomes too thin, then it is emptied of content, and compatibility with the biblical witness is compromised. All major interpretations of the *imago Dei* entail at least some significant substantive commitments (as discussed above). A meaningful view of the *imago Dei* will require at least some set of intended characteristics, but if God is stripped of any means to bring about such intended characteristics, then there is no basis for such a meaningful interpretation of the *imago Dei*. Stripping the *imago Dei* of any significant meaning would not be an isolated casualty within the biblical witness, but would affect several elements of biblical faith, including the critical notion that Jesus, though truly human, is the full revelation of God. In one sense, then, the requirement that a theology of divine action allow for at least a somewhat thick view of the *imago Dei* is an elaboration of the first requirement that it be compatible with the biblical witness.

If no theory of divine action can coordinate evolutionary theory and a relatively thick view of the

imago Dei in a satisfactory way, then maybe the possibility of a thick interpretation of the image of God should be dropped. After all, the interpretation of this mysterious phrase in Genesis is admittedly difficult and somewhat speculative. Perhaps a relatively thin view of the *imago Dei* is in line with its true meaning. But we should not abandon our hope for a rich, content-filled interpretation of the *imago Dei* too quickly. Thus, in the following evaluation of different approaches to divine action, I will examine whether there are approaches that are compatible with a thick doctrine of the *imago Dei* while also meeting the first two criteria described above. Without committing to any particular approach to the image of God (i.e. a substantive, functional, or relational approach), I hope to show that there are theologically and scientifically acceptable theories of divine action that leave room for thick, meaningful interpretations of any of these approaches to the *imago Dei*.

Interventionist approaches to divine action

The traditional approach to divine action is “interventionist” in that it asserts that God, at least from time to time, “intervenes” in the system of natural laws and processes to bring about occurrences that would not have happened absent such intervention. In other words, there are events that take place that could not have been brought about merely by natural entities operating according to scientific laws, but which require an act of God’s will. Thus, while God may be the continually sustaining and empowering force behind the existence of the universe and its natural laws, there are objectively special divine actions. These actions may be difficult for humans to identify (e.g., consider the case in which God responds to a prayer by healing a cancer patient who would have otherwise died; one attributes the healing to “answered prayer” and another to biological processes beyond our understanding) or they may be more easily identifiable (e.g. the parting of the Red Sea, or Jesus’ resurrection appearances).

It is possible for one to hold an interventionist view of special divine action but deny that there was any special divine action before humanity’s entry into natural history.¹⁵ In this account, natural laws and systems are completely sufficient to accomplish God’s will in natural history up until the existence of

¹⁵ William P. Alston, “Divine Action: Shadow or Substance,” in *The God Who Acts: Philosophical and Theological Explorations*, ed. Thomas Tracy (University Park, PA: Penn. State, 1994), p. 44.

conscious, free-willed creatures that bear God's image. Only at this point does God begin intervening in the universe as a way of responding and relating to these creatures. But if this view is the case, then it is irrelevant whether or not an interventionist view of divine action is compatible with a thick view of the *imago Dei*, since the question under consideration in this essay is how God acted (or did not act) *within natural history* to bring into existence creatures which bear God's image. If it is claimed that God did not intervene in the universe before the existence of such creatures, then we will have to evaluate whether a uniformitarian, hands-off approach to divine action is compatible with a thick view of the *imago Dei*. That analysis is saved for the next section. Here, I evaluate an interventionist view that does allow for the possibility of God's intervening in natural history.

The interventionist view of divine action clearly meets criteria one and three: an interventionist God is clearly capable of the kind of divine action witnessed to in scripture (e.g. answering prayers, raising people from the dead, etc.), and this God can ensure that a creature with particular traits arises in natural history (allowing for thick interpretations of the *imago Dei*). How much God had to intervene in natural history is open to question. Perhaps God intervened only to disrupt dead ends in evolution (e.g. by directing an asteroid to earth to cause the demise of the dinosaurs), or perhaps God merely intervened to bring about the existence of DNA. Alternatively, maybe God's intervention was required at several points in the evolutionary process in order to bring about the creatures he desired. While these questions are debatable, one who allows for the possibility of God's intervention in natural history certainly has no problem maintaining a thick interpretation of the *imago Dei*.

But interventionist approaches to divine action have been subject to overwhelming criticism from the science and theology community on both scientific and theological grounds. Four main objections are levied against interventionism: first, that interventionism is antiscientific because it requires that natural laws be broken, thus "breaking the web of nature" and "causing gaps in its closed causal order";¹⁶ second, that God's violating the laws of nature causes God to be inconsistent with God's own intentions

¹⁶ Robert Russell, "Special Providence and Genetic Mutation" in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, ed. Robert John Russell et al. (the Vatican: Vatican Observatory, 1998), p. 192.

expressed in those laws; third, that interventionism “reduces God to an aspect of nature”;¹⁷ and fourth, that the need for divine intervention would indicate a poorly designed and inelegant creation, one unworthy of God. None of these objections are as strong as they are generally made out to be in the literature.

Consider the first charge, that interventionism “entails violating or suspending the laws of nature” and is thus “deeply anti-scientific.”¹⁸ Interventionism would only be anti-scientific if the practice and success of science depended on the claim that “scientific laws are operative at all times and at all places.” But science could just as easily proceed with the assumption that “scientific laws are operative at all times and at all places except in those extremely rare cases when God chooses to intervene.” Neither one of these claims can be demonstrated by scientific experiment or theory, so arguably neither claim is strictly more scientific than the other. As William Alston has argued, “the only thing a scientist is committed to assuming, by virtue of engaging in the scientific enterprise, is that there is a *good chance* that *the phenomena he is investigating* depend on natural causal conditions *to a significant degree*.”¹⁹ Most views of interventionist divine action do not jeopardize this statement. Furthermore, the definition of scientific laws could be reformulated as descriptions “of what the objects in nature are capable of producing in virtue of the powers they possess.”²⁰ In this account, scientific laws only describe behavior of objects within a closed system, so that God’s intervention from outside the system need not be a “violation” of scientific law.

The second objection suggests that God’s intervention is a kind of divine inconsistency, since God would be violating the very laws which God Godself created as “a reflection of God’s ubiquitous and orderly action.”²¹ John Polkinghorne claims interventionism is equivalent to God changing God’s mind, working “against the grain of the natural law that he himself has ordained.”²² But suspending natural law

17 Paul Davies, “Teleology without Teleology” in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, ed. Robert John Russell et al. (the Vatican: Vatican Observatory, 1999), p. 152.

18 Ibid.

19 Alston, 48.

20 J. A. Cover, “Miracles and Christian Theism” in *Reason for the Hope Within*, ed. Michael J. Murray (Grand Rapids: Eerdmans), p. 362.

21 Davies, 152.

22 John Polkinghorne, *Science and Providence* (Boston: Shambhala, 1989), p. 46.

would only be divine inconsistency if God instituted that law with the intention of never suspending it. If that was not God's intention, then there is no internal inconsistency. Furthermore, scientific laws that are "nearly always operative" may accomplish the same divine purposes (while leaving room for additional purposes) as scientific laws that are in fact always operative.

The third charge, that interventionism reduces God to a force of nature, also appears to have little merit. William Alston is right to argue that the fact that God acts within finite space-time in no way reduces him to being a finite creature. This objection seems to assume an unjustifiably extreme view of divine transcendence. Though Christian theology, in its emphasis on the creator/creature distinction, demands that God be ontologically distinct from the universe and superior to it, this does not demand that we deny the possibility of God interacting with the universe God has created and causing particular events within that universe. In fact, the doctrine of the incarnation seems to directly contradict this notion that God's actions within space-time reduce him to a finite creature. The incarnation maintains that God is able to act in finite ways and, in the second person of the Trinity, even become a finite human being without ceasing to be God.

It is the fourth objection, that the need for divine intervention implies an ill-conceived universe, that is the strongest. In commending the uniformitarian view of divine action (in which God is able to bring about life and complexity merely through endowing creation with ingenious natural laws), Davies exclaims: "How much easier it would be for an omnipotent deity to 'cobble together' the complex systems 'along the way' by crude manipulative intervention..., but how much less impressive!"²³ If God could set up a universe governed by scientific laws that would assuredly bring about the existence of creatures bearing God's image, then this would seem to be the most elegant and parsimonious way of bringing about God's intentions (though it is arguably pretentious to suppose that God's notions of "elegance" are the same as our own). However, as will be suggested in the discussion of uniformitarianism below, scientists dispute whether or not *any* life was inevitable in this universe, much less life which would conform to a particular thick view of the *imago Dei*. Nor is it clear that God would

23 Davies, 159.

want to design laws of the universe that would make the intended image-bearing creatures inevitable. For example, perhaps such laws would have to be excessively deterministic, limiting important roles for chance and unpredictability; or perhaps such laws would be extraordinarily complex, making them difficult for creatures to understand and offsetting the parsimony gained by the uniformitarian view. Thus, while this objection does carry some force, it is not enough to rule out the interventionist view altogether as long as alternative approaches also face significant challenges.

In the final evaluation, the interventionist view meets the second criterion: an interventionist view need not be anti-scientific nor incompatible with evolutionary theory. The view simply allows for the possibility of God bringing about some event that would not have otherwise happened in natural history in order to accomplish specific intentions. The overall neo-Darwinian picture need not be challenged. One might counter with the complaint that, even if the interventionist view is not anti-scientific, it is decidedly *nonscientific*. In no way does the theory attempt to engage the most current scientific theories, but it simply sidesteps them with the claim that the creator's activity is not bound by scientific laws. But this weakness (which contributes to the theory's lack of parsimony) is also the theory's greatest strength. All of the uniformitarian and non-interventionist views discussed below depend, at least to some extent, on debatable scientific claims. Thus, in trying to incorporate a theory divine action into contemporary scientific theories, these approaches to divine action are more vulnerable to shifts and advances in scientific theory. Views of divine action that are considered "scientific" today may turn out to look antiquated and distinctly unscientific tomorrow. While we should continue to explore and develop other views, the interventionist view should not too quickly be dismissed as naïve theology, as many are inclined to do.

Uniformitarian approaches to divine action

A completely uniformitarian view of divine action would have to be ruled out by the criteria used in this paper, since uniformitarianism denies the reality of objectively special divine action. As discussed above, the notion that there are objectively special divine acts (e.g. the resurrection) is central to the

biblical witness, and a theology of divine action that denies such acts will not be compatible with traditional orthodox faith. However, a view of divine action that suggests that God acted in a uniformitarian manner throughout pre-human natural history, only causing special divine acts after humans (or some other divine image-bearing creatures) were on the scene, would be compatible with the biblical witness. All of God's special divine acts in scripture occur during the human era, with the exception of the creation itself. Thus, a "partially uniformitarian" view—that God created the universe and the laws of nature, continually sustains the universe and these laws, and only brings about special divine acts after the evolution of humans—presents no obvious biblical challenges. This partial uniformitarianism is the one I will evaluate in this section.

Paul Davies presents a uniformitarian view of divine action similar to Kenneth Miller's described in the introduction. In his view, God can bring out God's special intentions for creation (e.g. creatures bearing the *imago Dei*) without the need for special divine action.²⁴ All that is needed to ensure that the universe is budding with life and complexity is an ingenious combination of the right physical laws and the right amount and kind of variability and unpredictability. Davies compares the laws of the universe to a game of chess, in which the well structured rules and the openness to variability allows for a game that "becomes an exquisite mix of order and unpredictability, which is why it is so fascinating."²⁵ Because of the role of chance in the physical laws, the universe is a genuinely open and indeterminate system, but the well-selected laws orient the universe towards generating diversity and complexity. God need only sustain the universe and its laws and wait to see what emerges.

If Davies is right about the life-generating character of the laws of science, is his version of uniformitarianism friendly to a thick interpretation of the *imago Dei*? On a surface-level analysis, Davies' view seems to be compatible with a thick view of the image of God. He writes: "the general trend of matter→mind→culture is written into the laws of nature at a fundamental level."²⁶ On the other hand, this view of an overabundance of complex life in the universe creates some difficult problems for

24 Davies, 151.

25 Ibid., 155.

26 Davies, 160.

the *imago Dei* doctrine. Though complex life in general may be inevitable, there is not necessarily anything particularly likely or important about humanity's particular form of complex life. Davies contends that "the specific details [of human life] (the human form, our mental makeup, the character of our culture) depend on the myriad accidents of evolution."²⁷ The picture is a universe teeming with complex life, but with vastly different forms and kinds of complex life that may be radically different from us—creatures with different value systems, different kinds of rationality, different aesthetics, etc.

Would these other equally complex and sentient but vastly different creatures also share in the *imago Dei*? If the answer is yes, then the traits presupposed by the *imago Dei* would have to be reduced to the lowest common denominator, something shared by all of these complex creatures. Certainly no specific trait, such as an ability to understand quantum mechanics, a particular kind of moral reasoning, or the presence of some sort of "spirituality", could be identified as part of the *imago Dei* if that trait wasn't held in common among the divine image-bearing creatures. But the traits presupposed by a "lowest common denominator" *imago Dei* would necessarily be vague and lacking in specificity, perhaps something like "complexity" or "sentience" or "the presence of some culture" (even if that culture was incomparable to any real or imaginable human culture). The overabundance of life in Davies' picture actually requires a thin view of the *imago Dei* that threatens to erode the significance of many substantive, functional, and relational interpretations alike. Of course, one could claim that only those creatures that are relatively like us share in the *imago Dei*. But that still leaves the potential problem of some creatures being "more" in the image of God than others (i.e. if there are creatures very much like us but lacking a few capacities, or vice versa), and it creates the frightening potential for wrongly and arrogantly arrogating the *imago Dei* claim to ourselves.

But Davies' description is not the only uniformitarian picture that might describe how God could bring about creatures sharing the *imago Dei* without invoking special divine providence. Interestingly, many scientists have challenged two of the key components of Davies' picture: that the presence of life in this universe is an inevitability by virtue of the universe's scientific laws; and that, once started,

²⁷ Ibid.

evolution is directionless, making it impossible to predict what types of mind, form, and culture might emerge. One scientist who challenges both of these claims is evolutionary biologist Simon Conway Morris. In his book *Life's Solution: Inevitable Humans in a Lonely Universe*, Morris suggests first, that life might not be as common an occurrence in the universe as Davies makes it out to be. In fact, the more data astronomers gather, the more our planet, our solar system, and our galaxy seem to be uniquely favorable to life.²⁸ And even if there are other planets suitable for life, the probability of the emergence of DNA or other organic molecules that could support life still seems “infinitesimally unlikely.”²⁹

But once life and evolution do get started, Morris argues that evolution is the opposite of a directionless and contingent process. Morris provides scores of examples of evolutionary convergence, instances where nearly identical evolutionary solutions—including everything from camera-eyes to agricultural communities to bipedalism—arise at different points on the evolutionary tree (rather than coming from a common ancestor). According to Morris, convergence goes well beyond individual examples. Instead, convergence is a ubiquitous feature of virtually all of evolution that “will lead inevitably to the emergence of recurrent biological properties that define the fabric of the biosphere. Rerun the tape of life as often as you like, and the end result will be much the same.”³⁰ Rather than being directionless, evolution may be “channelled towards stable nodes of functionality,” even making the emergence of something like humans probable, if not inevitable.³¹

Given these wildly different pictures painted by Davies and Morris, how are we to evaluate the “partially uniformitarian” theory of divine action (which only allows for special divine action in God’s interactions with humans). First, the partially uniformitarian view is compatible with the biblical witness and, at least in as much as it is uniformitarian, it is certainly compatible with science. But whether or not the theory allows for a thick interpretation of the image of God depends in significant part on unresolved scientific debates. If Davies is right that evolution, while perhaps favoring complexity, is otherwise

28 Simon Conway Morris, *Life's Solution* (Cambridge, UK: University Press, 2003), p. 104 (Cf. chapter 5).

29 Ibid., 67 (Cf. chapters 3-4).

30 Ibid., 282.

31 Ibid., 309, 299.

directionless and highly contingent, then this view presents severe problems for the doctrine of the *imago Dei*. Morris' alternative notion of convergence, however, might support a very thick notion of the image of God if the bundle of traits presupposed by the *imago Dei* were "one of the nodes of occupation [that] are effectively predetermined from the Big Bang."³² On the other hand, if Davies is wrong in his belief that the universe is teeming with life, and Morris is right that the probability of life arising anywhere in the universe is extremely small (so small that we may very well be alone in the universe), then the uniformitarian view would again face major challenges. If chance is given any significant role in cosmic history (e.g. through occasional amplification of chance quantum events), then it would seem unlikely that a hands-off God could guarantee the appearance of enormously improbable life without some kind of special divine action.

In short, despite the strengths of the partially uniformitarian theory (most notably its elegance, which is arguably lacking in the interventionist view), the theory's compatibility with a thick view of the *imago Dei* depends on a number of highly contested scientific assumptions. As long as these debates are ongoing, other theories should not be ruled out, and partial uniformitarianism should only be offered provisionally.

Non-interventionist approaches to divine action

Non-interventionist approaches to divine action seek to affirm the notion of special divine action while avoiding the arguably inelegant claim that God violates or suspends the laws of nature. These approaches attempt to show how God can bring about special divine acts, and even extraordinary divine acts (like the resurrection) by working within natural laws and processes rather than by intervening from outside of the natural system. Robert John Russell has identified the four primary (not necessarily mutually exclusive) non-interventionist approaches: (1) a "top-down" or "whole-part" causality view that often explains God's action in the created world by drawing analogies to mind/brain interaction; (2) a "bottom-up" causality view that locates God's action at the quantum mechanical level; (3) a "lateral"

³² Ibid., 310.

causality view that attempts to harness chaos theory in its explanation of divine action; and (4) a Thomist “primary/secondary” causality view that views God as the primary cause of any event, but always acting through secondary, mediated means.³³

Though an evaluation of all of these non-interventionist approaches is beyond the scope of this paper, an examination of one approach will illustrate both the promises and difficulties presented by a non-interventionist view of divine action. In this section I will evaluate the quantum mechanics “bottom-up” approach to divine action, which in my view is the most exciting and promising of the various non-interventionist approaches for two reasons. First, this theory capitalizes on an area of science that many scientists, regardless of their religious views, regard as ontologically indeterminate, thus leaving “room” for divine action.³⁴ Second, this theory utilizes a form of causality (bottom-up causality) that, even if it may not be the only form of causality, is at least non-controversial and readily understandable (unlike top-down causality or primary/secondary causality).³⁵

The quantum mechanical view of divine action assumes that there are elements of ontological indeterminism at the quantum level of reality, meaning that particular quantum states are not fully determined by the immediately preceding state. There is no doubt that much at the quantum level is epistemologically unpredictable; even if quantum events as a whole can be described by statistical regularities and probability distribution functions, outcomes of particular quantum events cannot be predicted. But there are competing theoretical interpretations of quantum physics that make the same empirical predictions, and only some, such as the leading Copenhagen interpretation, require ontological indeterminism.³⁶ According to these interpretations, the laws of science alone are not sufficient to

33 Russell, “Introduction,” p. 12-13.

34 John Polkinghorne’s suggestion that indeterminism resulting from chaotic systems is the locus of God’s action is an example of a non-interventionist theory whose “location” of indeterminism is highly controversial. Polkinghorne notes that chaotic systems are epistemologically indeterminate (we can’t predict the systems’ outcomes) and then, on the basis of epistemological realism, concludes that chaotic systems are ontologically non-deterministic (*Science and Providence*, p. 29). Not only would most scientists likely disagree with him, but, as Nancey Murphy argues, he misapplies the realist assumption in his argument (Murphy, 321-328). Even a realist cannot conclude that because she does not know the outcome of a particular event, that the outcome is thereby non-deterministic.

35 As Paul Davies notes, “The precise mechanism whereby downward causation might operate remains mysterious—we do not yet understand how minds and brains relate to one another!” (p. 154)

36 James Cushing, “Determinism Versus Indeterminism in Quantum Mechanics” in *Quantum Mechanics: Scientific Perspectives on Divine Action*, ed. Robert John Russell et al. (the Vatican: Vatican Observatory, 2001), p. 100-106.

determine all the outcomes of quantum events. Chance also plays a role.

But theologians arguing for bottom-up divine action suggest that God, rather than (or in addition to) chance, fills this causal gap in the laws of science. Some proponents of this view argue that God only affects quantum outcomes intermittently, when God wants to bring about a particular intention through a special divine act.³⁷ Others, such as Nancey Murphy, suggest that God determines all quantum events, but usually chooses the outcomes of these events in a consistent way that preserves the regularities of the universe described by the scientific laws.³⁸ In this interpretation, God is technically not filling the “causal gaps” in the scientific laws on the quantum level, since scientific laws do not have any ontological status. Instead, those laws merely are descriptions of the regularities in nature that result from God’s elegant and (generally) consistent actions on the quantum level of reality.³⁹ Though Murphy suggests that God acts in all quantum events, she claims that God need not be the sole cause of all quantum events. Quantum entities have their own “integrity” that constrains what is possible (e.g. God cannot give an electron positive charge), and “God restricts his action in order to produce a world that *for all we can tell* is orderly and law-like in its operation.”⁴⁰ Most representatives of this view would also assert that God also, in some way, accommodates the freedom of humans and other free-willed beings.

Does this particular non-interventionist account of divine action give God enough power over the physical universe to bring about the special divine acts and extraordinary divine acts that seem to be required by the biblical witness? Polkinghorne argues against locating God’s action at the quantum level since the unpredictability of the quantum level very rarely results in unpredictability at the macro level; the statistical regularities that govern quantum events ensure that they usually “average out” to the predictability described by Newton’s world of classical physics.⁴¹ But Russell is right to counter that God’s action at the quantum level is not limited to those instances where quantum events would normally

37 Thomas Tracy holds this view. Robert Russell suggests that God may have controlled all quantum events up until the advent of free-willed beings, who are then given a role in determining these events. See Russell, “Special Providence,” p. 215.

38 Murphy, 340-343.

39 Ibid., 346-348.

40 Murphy, 339-340.

41 Polkinghorne, 27.

have macro-level effects.⁴² The entire universe is built upon the foundations of quantum physics, so this view would give God great leverage to bring about macro-level events by setting into action an enormous series of quantum-level events. Though scientific questions remain as to what types of extraordinary events God could bring about by manipulation of quantum events, it seems conceivable that actions such as healing, affecting the weather, parting the Red Sea, and perhaps even the resurrection could be brought about by this ability to control quantum events.

It is clear that this quantum-level control would give God the requisite control needed to express certain intentions in the evolutionary process. Russell names several ways that quantum-level events can result in mutations that in turn affect phenotypes and have evolutionary results.⁴³ If it were necessary for God to occasionally nudge or direct the evolutionary process to achieve a certain divine intention, God could do this by realizing certain quantum outcomes in a way that would be undetectable and within the natural laws and processes, rather than intervening from outside these processes. Thus, this view of divine intervention allows for a thick view of the *imago Dei* without endangering basic evolutionary theory. Additionally, this view would not threaten to undermine the practice of science, since it assumes that God nearly always brings about quantum events in a consistent and regular way that gives rise to the regularities reflected in scientific laws.

The most significant weakness to this otherwise powerful and elegant theory is its dependence on a contestable view of quantum mechanics that assumes ontological indeterminism. Though this view is held by most scientists, and though it may be impossible to empirically confirm or disconfirm alternative, deterministic views,⁴⁴ the quantum mechanics approach to divine action is still potentially vulnerable to changes or advances in prevailing scientific paradigms. A nonscientific, interventionist view of divine action should not be completely disregarded in favor of this and other non-interventionist views of divine action, since these must be seen as provisional given their dependence on uncertain scientific perspectives.

42 Russell, "Special Providence," 214-215.

43 Ibid., 206-207.

44 Cushing, 101-106.

Conclusion

None of the approaches to divine action examined are ruled out by the criteria used in this paper, but each approach has distinct strengths and weaknesses. Interventionism is compatible with the biblical witness and with a thick view of the *imago Dei* and, though it is not a scientific view, it need not be an anti-scientific view. An interventionist view can be compatible with both the practice of science and its findings. A partially uniformitarian view, which excludes special divine action from pre-human natural history, is certainly compatible with science and need not conflict with the biblical witness. However, its compatibility with a thick view of the *imago Dei* is potentially jeopardized if evolution is as directionless as Stephen Jay Gould and others claim, or if the existence of any life elsewhere in the universe is really as unlikely as Simon Conway Morris claims. Finally, the bottom-up non-interventionist view appears to be compatible with the biblical witness and with a thick view of the *imago Dei*, but rests on an interpretation of quantum mechanics that is currently widely accepted but still contested in the scientific community.

Both the partially uniformitarian and non-interventionist approaches are elegant, powerful suggestions that should continue to be developed. But given that both of these approaches could be significantly weakened by unfavorable resolutions to current scientific debates, it is unfortunate that many theologians of science simply dismiss the interventionist approach, often with poorly argued reasons. If, in the face of future scientific developments, an interventionist view should seem the only way to maintain a meaningful, content-rich view of the *imago Dei*, then perhaps it would not be such a terrible view after all.