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A COMPARATIVE ANALYSIS OF DIVINE ACTION
METHODOLOGIES IN THE WORKS OF ROBERT
JOHN RUSSELL AND ALVIN PLANTINGA

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John Paul Wilkinson
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APPROVAL SHEET

A COMPARATIVE ANALYSIS OF DIVINE ACTION
METHODOLOGIES IN THE WORKS OF ROBERT
JOHN RUSSELL AND ALVIN PLANTINGA

John Paul Wilkinson

Read and Approved by:

Theodore James Cabal (Chair)

Mark Coppenger

Bruce A. Ware

Date _____

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PREFACE

Many people have helped me reach the conclusion of this project. My supervisor, Dr. Ted Cabal, languished with me through the choosing of a topic and offered helpful insights throughout the work. He taught me how to do philosophical research, and I pray that I have represented him well. Dr. Bruce Ware, who did not know I existed until I emailed him “out of the blue” to be my on my committee, displayed his servant's heart by his willingness to engage me on this project. Dr. Mark Coppenger was extremely helpful to me by guiding me through a semester-long independent study built around the philosophy of science and the metaphysics of causation. The majority of this idea was birthed through our many discussions and his assigned reading materials.

My family has been invaluable to me, not only in writing this dissertation, but also in the completion of all of my education. When I decided to enroll in seminary after years of difficult, and expensive, chemical engineering education, they fully supported me. They have been nothing but encouraging ever since. My grandparents have always seen the best in me even when it has not been so obvious to me. I would like to remember, especially, my paternal grandfather, Rev. Truman Wilkinson, because he is the one who introduced me to the Gospel and inspired me to ministry. Though I lost sight of the ministry after his death, I eventually returned to the path onto which he set me. My in-laws, too, have never wavered in their support for and confidence in me.

My wife, Shelly, has been steadfast throughout this entire, slow process. Life has been frustrating sometimes when the future remained unclear, but she soldiered on. Her belief in me and the value she bestows upon me are priceless; I cannot imagine life without her.

I would like to give special thanks to Dr. Robert Russell. In the midst of helping at least a dozen students with dissertations and other projects, he sacrificed what little remaining time he had to be my external reader and offer immensely helpful insights into both his work and that of Alvin Plantinga's. To know that scholars of Dr. Russell's stature care so much for the state of the discipline and the next generation has modeled to me what a teacher ought to be. At the beginning of this dissertation I was inspired by Russell's work, specifically his boldness in proclaiming that science describes precisely what God does and that theology can influence science; at the end, I have been inspired by his character.

Last, though first in priority, thank you to God for having providentially maintained me as I rebelled with all of my strength. Though I am undeserving, the Lord persisted, and I pray that no matter what I do: eat, drink, sleep, or write dissertations, that I do it for the glory of God. Amen.

Paul Wilkinson

Nashville, Tennessee
May 2015

CHAPTER 1

INTRODUCTION

How should one understand and articulate what it means for God to act? More broadly, what sort of thing is immaterial-material causation? This question has become more pressing in modern times due to the successes of the sciences: one must decide whether to take the most agreed upon scientific knowledge as the skeleton onto which God's action is fleshed out, whether to submit the most agreed upon scientific knowledge to the God of sacred text, tradition, and reason, or whether we can legitimately proceed on both fronts simultaneously.¹ Perhaps preceding that decision, one must decide if a scientific enterprise concerned with describing (and sometimes predicting) the behavior of the material world has any overlap with conceptions of an immaterial reality understood to affect change in its material counterpart? Because of the voluminous and high quality writing about modeling God's action and God's metaphysical relationship to science, there seems to be some need for an epistemological analysis of the methods utilized in those attempts. The following is one such attempt to discern what epistemological commitments underlay the various decisions made when constructing a model of divine action.² The overarching question under scrutiny is: how does epistemology affect divine action methodology?

¹By scientific knowledge I mean the consensus understanding of the experts in a particular scientific discipline about what the empirical facts are and the best, to date, interpretation of those empirical facts. For example, in this dissertation I take the Copenhagen interpretation of quantum mechanics to be the majority opinion of experts in the field of quantum theory. Certainly aspects of the minority views also count as scientific knowledge, but I am thinking in broader terms.

²When I use the generic term “divine action,” in this paper, I am referring to special divine action as opposed to general providence.

Why This Study?

The process by which an immaterial God interacts with the material universe has been a topic of debate since the infancy of western philosophy. Even when God is not seen as a personal agent, one still finds discussions about how and in what ways the immaterial transcendent interacts with the material cognizable. Many great thinkers have found it difficult, or even impossible, to conceive of an immaterial reality affecting, communicating with, or participating in the material reality. For that very reason, Aristotle relocated the Platonic Forms from the realm of the transcendent to the *more* tangible forces of perceived nature. Saint Augustine had his emanation theory borrowed from Plotinus, Leibniz had his monads, and Quine believed sets were existing objects.³ Eventually, if one wants to maintain immaterial agency, then one must at a minimum defend its logical consistency, and, at most, posit some coherent mechanism for its implementation.

Is divine action merely an artifact of the past, engendering interest from only the most abstract of disciplines? At first glance, divine action does not seem to appear explicitly in many modern discussions of apologetics and philosophy of religion. Much of the debate centers upon topics such as whether one is rational to believe in God in the face of evil, whether science has superseded God, whether the individual or God chooses seemingly free actions, and whether one deity or worldview should occupy a place of supremacy over others. The possibility of the immaterial interacting with the material is either taken for granted or ignored. However, if one were to take a few steps back from the apparent immediacy of any subset of the above examples, then one would quickly

³I do not mean to suggest that Quine actually proposed a meaningful mechanism or theory of immaterial-material causation. He argued for the existence of such abstract objects as sets and other concepts within mathematics on the basis of their indispensability for the natural sciences. It would seem that these indispensable abstract realities must, at a minimum, engage with the natural sciences. I include him here with Leibniz and Augustine, both of whom had theories of immaterial-material causation, to show the breadth of the issue. Leibniz and Augustine were ardent theistic supernaturalists whereas Quine was a naturalist. Better stated, Quine was an epistemological naturalist who saw no basis from that epistemological stronghold to claim other than metaphysical naturalism, though he seemed open to the idea of supernaturalism if such naturalistic facts presented themselves to warrant its conclusion.

find divine action in active participation. A few scenarios should suffice to show the importance of a coherent, perhaps even plausible, divine action theory.

Impact on Other Issues

Arguments concerning the problem of evil still reserve a revered place within philosophy of religion. Despite a near consensus of the deductive problem of evil's demise and the inductive problem of evil's adherence to analogous premises as the deductive type, one perpetually encounters this argument.⁴ While the argument is often used for its emotional import, many sincere individuals articulate this objection due to the sheer gravity of evil and suffering. Unfortunately, the quantitative nature of the inductive argument hides the true concern, which is *how could a benevolent God do or allow such atrocities?*⁵ Even when Alvin Plantinga's free will defense is accepted, one still shudders at the devastation of evil. The problem is God's role in the evil: is God *doing* the evil, is God *allowing* the evil, or is God incapable of *stopping* the evil?⁶

One's divine action theory will bear upon these questions. If God is moving every particle at all times in just the way God wants them to move, then God seems to be doing the evil. If God does not have full control to supersede or suspend natural laws, then perhaps God only allows evil on the basis of metaphysical necessity. If quantum indeterminacy ontologically holds in the most extreme sense, then God might be unable to stop evil. A decision regarding divine action theory will send ripple effects throughout one's theodicy.

⁴By the deductive problem of evil, I mean the claim that the propositions *God is all powerful*, *God is all good*, and *evil exists* cannot be logically maintained simultaneously. By inductive problem of evil, I mean the shift from logical consistency to arguments that the quality of evil, the quantity of evil, and the gratuity of evil are unlikely with God's omnipotence and God's omnibenevolence.

⁵Maybe the inductive argument from evil is not so much an argument against theism proper, but an argument against the traditional concept of God as the maximally perfect being, which would of course include maximum benevolence.

⁶I frame the question in Epicurean fashion to show the parallel nature of the inductive problem of evil to the deductive problem of evil. While questions of gratuity, quantity, and quality carry emotional weight on the front end, they lack substantial philosophical girth in the rear.

A similar situation arises with respect to free will versus sovereignty debates. If God controls every quanta of energy, then our thoughts are determined solely by divine will, if one assumes that mental states supervene upon physical brain states, since God will trigger divinely preferred neural impulses. If God functions in a passive way regarding natural laws and ontological quantum indeterminacy obtains, then the individual has grounds for *free* acts. The extent to which God engages the material world and the types of actions of which God can enact subliminally sculpt the free will versus sovereignty debate.

The Impetus from Science

In addition to the input that divine action has on other philosophy of religion topics, the advances of the scientific enterprise have almost demanded fresh analysis of divine action theories. In the immediate wake of Sir Isaac Newton, many theists sought to “fit God into” the natural order in some way. Newtonian mechanics was understood as rigid norms never to be traversed or violated. The discussion of a Laplacian interpretation will receive much attention from Plantinga later in this dissertation. As for now, it is enough to recognize that with the rise of the quantum reality as a set of statistical probabilities rather than a fully predetermined outworking, at least epistemologically, of an infinite causal chain, theists saw new openings in which God could act.⁷ Instead of “violating” some natural law, God had space within the natural order to operate causally.

The quantum understanding of the universe coupled with technological advances that allow for a clearer picture of such hidden features as the mechanisms of the human brain and the interaction of subatomic particles has called for new understandings

⁷While Bohmian mechanics has not been the preferred interpretation of quantum mechanics, perhaps even by Bohm, his deterministic equations do yield equal results to those of the indeterministic equations. However, Russell argues that whatever determinism arises from Bohmian mechanics is still far different from determinism arising from classical mechanics. See Robert John Russell, *Cosmology: From Alpha to Omega* (Minneapolis: Fortress Press, 2010), Kindle, locs. 3471-525.

of divine agency. The successes of science have also allowed for a more cross-discipline discussion of how divine action might work. The Divine Action Project is an ideal example of this truth.

The Divine Action Project was the fruit of Pope John Paul II's appeal for interdisciplinary scholarship. Robert John Russell, one of the general editors of the books generated by the conferences, describes the project as follows, "In August, 1993, twenty scholars, with cross-disciplinary expertise in physics, cosmology, biology, philosophy of religion, philosophy of science, philosophical and systematic theology, history of theology, and history of science, met for a week-long conference."⁸ He goes on to explain the reasons for the meetings:

The conference was the second of a series of five such research conferences planned for the decade of the 1990s on theology, philosophy, and the natural sciences. The overarching goal of these conferences is to contribute to constructive theological research as it engages current research in the natural sciences, and to identify and critique the philosophical and theological elements that may be present in ongoing research in the natural sciences.⁹

The material outcome of those conferences was five books on divine action, each with the subtitle, *Scientific Perspectives on Divine Action*. Besides the actual conclusions of the works, the significance of such a project cannot be overstated because the Divine Action Project shows that divine action is a primary joint where a plethora of disciplines, both secular and sacred, meet. Due to both the advancement of science and the diverse nature of disciplines related to the sciences, divine action is a pertinent and worthy topic.

Research Design

Because of the significance of divine action theory and the amount of extant literature regarding actual models, this project will focus on the methodology of deriving

⁸Robert Russell, *Quantum Mechanics: Scientific Perspectives on Divine Action*, vol. 5 (Vatican City State: Vatican Observatory Publications, 2001), i.

⁹Ibid., ii.

a divine action theory. More specifically, this project questions what content should compose a divine action theory and what function a divine action theory should serve. Even more specifically, this project seeks to discover the effect of epistemology on divine action methodology. While it seems at first glance that one's metaphysical commitments determine the valid candidates for a divine action theory, in the actual development of a theory, I will argue that the epistemological commitments could be the impetus for said metaphysical commitments. In that schema, epistemology plays the most significant role in divine action methodology. In other words, it could be the case that metaphysical decisions supervene upon epistemological decisions in divine action methodology.

An ideal study about the effect of epistemology on divine action methodology would accumulate as many divine action theories as possible and then trace the threads of those theories to see what sort of metaphysics and epistemology birth them. Such a project would generate too many pages and incorporate too many thinkers for a doctoral dissertation. This dissertation limits analysis to two thinkers: Robert John Russell and Alvin Plantinga.

Why These Thinkers?

Of all the talented philosophers, scientists, and theologians within the divine action theory debate, on what basis should the comparison of Russell and Plantinga be the sole focus? The only apparent negative in choosing them is that it does introduce a variable into the equation that must be accounted for in the final conclusions of the analysis: one is a philosopher in the fullest sense of the title, the other is a scientist/theologian extraordinaire. A careful line must be tread to be sure that any discovered differences are actually epistemological rather than stemming from disciplinary limits. Nevertheless, with full awareness of such a possibility, that very difference may give rise to some interesting maneuvers throughout their formulations. This point will be explained below in the paragraph on potential corollary findings under

the section “Goals of the Analysis.”

Despite their different paths into the liberal arts disciplines, these two thinkers are an optimal choice not only because they are at the top of their respective fields, but also because of their extensive similarities regarding divine action theory. Both of them argue for special divine action in addition to general divine action. Both of them subscribe to the “bottom-up” approach of special divine action, at least in that “bottom-up” causation will be a necessary piece of the final puzzle. Like most others in that approach, they follow quantum theories as the prime candidates for the locus of divine action. Within quantum theory, both see collapse theories as the most appropriate interpretation with respect to divine action. At the very end, however, they part ways over which collapse theory should be given prominence. A careful analysis of the reasons for that final decision should validate or eliminate epistemology as a potential overriding factor in forming a divine action theory.

They also share many similarities beyond choice of divine action theory that suit the purposes of this project. They both belong to evangelical Christian denominations which adhere to similar beliefs as those described in the traditional creeds of orthodox Christianity, though Russell, as an ordained minister in the Church of Christ/Congregational would be unlikely to subscribe to the *actual* confessions of orthodoxy.¹⁰ Thus, they have a similar metaphysics with respect to the nature of God and, to some extent, the nature of reality. If that relationship can be conclusively shown, then any differences in their epistemologies become prime candidates for their ultimate choice of divine action theory. In other words, if they can be shown to have similar metaphysical stances and similar scientific stances, then epistemology springs forth as the variable most likely causing divergence in the last step of the game.

¹⁰Russell, however, does not limit himself to the understanding of his denomination. He notes that he has found significant resources in liberal aspects of the Protestant Reformation and current Roman Catholic Theology. Robert Russell, e-mail message to author, February 24, 2015.

The bulk of the research for this dissertation comes from primary source material for these two thinkers. Because both thinkers have published works within the recent few years, I have access to their most current, and presumably most mature, conclusions about the nature of divine action. Also because of recent publication, it will become apparent from any differences that arise between their early publications and their late publications, the reasons those changes were made. Those decisions may shed light upon the foundations of decision-making in divine action theory.

Outline

Since the goal of this project is to analyze the effect of epistemology on divine action methodology through a comparative analysis, each thinker's epistemology must be thoroughly expounded. In addition to the presentation of their epistemology, I detail their understanding of God and their philosophy of science. The purpose of the latter two sections is to show the similarity in their views while the epistemology section will show the differences in their views. Those differences are highlighted through an examination of their actual divine action theories. If successful, then it can be inferred, tentatively, that epistemology has a greater effect upon divine action methodology than metaphysics for these thinkers.

Each chapter contains both thinkers' material with Russell's being presented first, followed by Plantinga's. After this introduction come short biographies of each scholar, followed by a presentation of their theology. I focus on God's action in creation *ex nihilo*, God's general sustaining of the universe, God's trinitarian nature, and God's action in the historical resurrection. This chapter, like the three following, is entirely descriptive, though I point out the significance of each view for this research.

After their theologies are presented, I proceed to set forth their varying views of science. I give special emphasis to methodological naturalism, the status of natural law, the ultimate goals of science, the relationship between science and theology, and the

move from classical mechanics to quantum mechanics with emphasis on ontologically indeterministic interpretations of science. A corollary issue worthy of discussion is the demarcation problem: when does science stop and theology begin?

Following the philosophy of science chapter comes the epistemology chapter. The epistemology sections focus on the sources of warrant for theological beliefs and scientific beliefs, which sorts of facts take precedence, and which systems of epistemology are most justified. Of special interest are the constraints each discipline puts on the other.

Next, I present the divine action theories of both thinkers. The emphasis of this chapter is how they arrive at their theories, epistemologically and how their theories relate to science and theology. I spend a few pages analyzing their differing concepts of intervention even though they both choose non-interventionist theories. Their understanding of intervention highlights each scholar's desired emphasis. I utilize the work of John Saunders to critique each divine action theory since he addresses both interpretations of quantum collapse theory, specifically.

Finally, I provide a critical analysis of the preceding material. The purpose of the chapter is to explicitly compare the preceding research descriptions of Russell and Plantinga. By locating their similarities and differences, it should become apparent why they opt for differing quantum mechanical collapse theories. Novel, opinionated comments will be kept to a minimum so that those conclusions presented are the ones most directly connected to the research derived by legitimate inference. The first part of the chapter seeks to show high percentage agreement between Russell and Plantinga's view of God and their philosophy of science. The second section denotes the key epistemological differences that eventually drive their final collapse theory conclusions.

The concluding chapter of the dissertation summarizes the descriptions of both Russell and Plantinga's metaphysics, their epistemologies, and their divine action theories. After the short summary, there is a final explanation of the conclusions and a

measure of the success of the project: can some direct, explicit connection be drawn between epistemology and divine action theory that overrides other inputs to the theory, and has this particular analysis shown the truth of that connection convincingly and effectively?

The Parameters of the Project

A necessary outcome of limiting the project to two thinkers is the rejection of many categories of divine action theory. Thus, the focus centers upon special divine action theory. First, it is assumed that divine action is coherent; all nontheistic critiques will be ignored. Second, general divine action theories such as deism and general theism are not addressed. Third, interventionist theories of divine action are not analyzed. Fourth, while interesting and warranting careful attention in future works, “top-down” causality, “lateral” causality, and “primary/secondary” causality are not be considered.¹¹

The action theories to be analyzed in this dissertation are special divine action theories. These theories argue that God does more than create the universe and sustain the universe. God does things like sending rain, causing thoughts, and communicating to humans.^{12,13,14} Within the category of special divine action, only those theories that are noninterventionist are studied. Noninterventionist theories maintain that God does not suspend the laws of nature or intervene into the natural order of physical laws. To bring about change, God will somehow work within the created order, being limited by established mechanics. Finally, the “bottom-up” causality approach is the one in question. These theories generally appeal to quantum mechanics where God can operate on the

¹¹This divine action typology comes from Robert John Russell's work for the Divine Action Project. See his introduction to *Quantum Mechanics: Scientific Perspectives on Divine Action*, vol. 5 (Vatican City State: Vatican Observatory Publications, 2001), iii-v.

¹²See Gen 2:5, Joel 2:23, and Matt 5:45.

¹³See Exod 9:12 and Rom 11:7-8.

¹⁴See Exod 3:4, Isa 6:8, and Jonah 1:1.

most fundamental, microscopic state of a system to create macro effects which arise through natural processes receiving their genesis in micro effects, themselves obtaining directly from God's, noninterventionist action.^{15,16}

What aspects of metaphysics and epistemology are potential candidates for this analysis? While such metaphysical questions as the nature of heaps, the ontological status of holes, and the potential for reality to actually be an illusion do not suit the purpose of this work. I limit discussion to metaphysical topics that have a direct bearing on divine action. In the course of the metaphysical descriptions, I touch on the nature of God, the metaphysics of science with emphasis on theories of causation, the ontological status of fundamental particles, the ontological status of natural laws, and the relation of the immaterial realm to the material realm.

Epistemology, like metaphysics, has an incredibly broad scope. I limit the analysis of this work to epistemological questions that tie directly to divine action or are closely related to the status of knowledge. The former involves the mechanisms of forming beliefs, how those beliefs become knowledge, the extent to which one can know things about God's actions, the methods of science in discovering truth, and what sorts of things about the immaterial realm can be known. The latter focuses upon what counts as knowledge and whether primacy should be given to propositions deriving from one discipline over another.

Goals of the Analysis

I do not propose to offer *the* single deciding variable of divine action theories. Even if more theories were added to the analysis, it would still be too demanding to offer a definitive input x that yields divine action theory y . The study of divine action is too

¹⁵Russell, *Quantum Mechanics*, v.

¹⁶Robert Russell, e-mail message to the author, February 24, 2015.

complex in itself and too multifaceted with respect to its inter-disciplinary nature to be reduced to one deciding input. The aim of this project is much more subdued than that of a divine action *law*. The goal of the analysis is to decide if in the case of Russell and Plantinga, it can reasonably be believed that epistemology weighs more heavily on their divine action theories than any other component of said theory. If that relationship can be shown, then it will be safe to suggest that epistemology, more than other inputs, influences “bottom-up” causal theories, and perhaps special divine action theories in general.

Some interesting corollaries should arise from the analysis of Russell's and Plantinga's theories. First, it will be interesting to note the moves made by a career philosopher versus the moves made by a career scientist/theologian. It might be the case that they give different weight to particular propositions or facts based upon their discipline and training. Second, a strong critique of metaphysical naturalism will be inherent in both of their works which will be noteworthy, or at least when the application of it is appropriate, will be noteworthy. Third, the extent to which one can *know* about how God works will become clear, at least on Russell and Plantinga's terms, throughout the analysis. In other words, what is a divine action theory capable of telling us and in what ways is a divine action theory useful? Fourth, and of utmost significance, the relationship between scientific assumptions and theological assumptions will be highlighted. Does the one inform the other? Should one be preeminent over the other? Are they compatible in the sense that they are derived entirely separate from one another? All of these points are too tangential to garner substantial space within this project, yet they are worthy enough for brief comments.

Concluding Remarks

I cannot sing highly enough the praises of these two great thinkers. I am indebted to both of them for the insights that they have offered me through their diligent

study and vast experience. Nothing within this work should be understood as an attempt to put Russell and Plantinga in competition with each other. This work does not attempt to present the philosopher versus the scientist. In the end, they do not hold drastically different theories of metaphysics or epistemology, but that truth is precisely what makes this analysis poignant. How could it be that two so closely related philosophical outlooks cause different turns at the last step of the analysis? If all other parts of their systems sync sufficiently, then why do they end up in different theories? It could be as simple as personal preference, but I believe the differences to be more subtle than that. I will argue that the most nuanced features of their epistemology lead to the ultimate divergence in their divine action theories.

CHAPTER 2

BIOGRAPHIES

The biographies below outline the faith organization of each thinker, any other organizations of which each thinker is a part, a brief academic history of each thinker, and his major works.

Robert John Russell

Robert John Russell has a Ph.D. in experimental physics from the University of California, Santa Cruz, and an M.S. in physics from the University of California, Los Angeles. He earned his M.A. in theology and science from the Pacific School of Religion which is a seminary within the Graduate Theological Union association of seminaries. Russell has published numerous works, including *Time in Eternity: Pannenberg, Physics, and Eschatology in Creative Mutual Interaction* (2012) and *Cosmology from Alpha to Omega: Towards the Mutual Creative Interaction of Theology and Science* (2008). In addition to publishing numerous articles in many academic journals, Russell was co-editor for the series of books originating from the Divine Action Project.

Russell founded the Center for Theology and the Natural Sciences (CTNS). Located in Berkeley, California, CTNS is an affiliate of the Graduate Theological Union, CTNS offers seminary and doctorate courses, and CTNS publishes the journal *Theology and Science*. The purpose of CTNS is to be, “Dedicated to research, teaching and public service.”¹ On the scientific side, CTNS focuses on physics, cosmology, evolutionary

¹“About CTNS,” accessed February 10, 2015, <http://ctns.org/about.htm>.

biology, genetics, neuroscience, and various aspects of the environmental sciences and mathematics. From a theological perspective, CTNS, focuses on systematic theology and the continued engagement between the sciences and religion. Through CTNS, Russell has been the principal investigator for numerous projects, including “Science and the Spiritual Quest,” “Science and Religion Course Program,” and “Science and Transcendence: Advanced Research Series.”

Russell is a member of the Society of Ordained Scientists. He has been ordained in the United Church of Christ/Congregational. In addition to directing CTNS, Russell, since 2006, has been the Ian G. Barbour Professor of Theology and Science in Residence for the Graduate Theological Union in Berkeley, California.

Alvin Plantinga

Alvin Plantinga received his B.A. from Calvin College and his Ph.D. from Yale University. Plantinga has held numerous professorships throughout his career, including at Wayne State University, Calvin University, and the University of Notre Dame. Plantinga has also held visiting professorships at Harvard, University of Chicago, University of Michigan, Boston College, Indiana University, UCLA, Syracuse University, and Arizona University. Of his many publications, he is perhaps best known for his *Warrant* series: *Warrant: The Current Debate* (1993), *Warrant and Proper Function* (1993), and *Warranted Christian Belief* (2000). Other notable publications are *Faith and Philosophy* (1964), *The Ontological Argument* (1965), *God and Other Minds* (1967), *The Nature of Necessity* (1974), *Faith and Rationality* (1983), and most recently, *Where the Conflict Really Lies: Science, Religion, and Naturalism* (2011). Plantinga has two autobiographical pieces, the first is entitled, “Intellectual Autobiography,” and can be found in *Alvin Plantinga* (1985).² The second is a spiritual autobiography which can be

²Alvin Plantinga, “Intellectual Autobiography,” ed. James Tomberlin and Peter van Inwagen (Dordrecht: D. Reidel Publishing Co., 1985), 3-97.

accessed through Calvin College.³

Plantinga was the inaugural William Harry Jellema Professor of Philosophy at Calvin College and emeritus John A. O'Brien Professor of Philosophy at the University of Notre Dame. He was the President of the American Philosophical Association, Western Division and President of the Society of Christian Philosophers. He belongs to the Christian Reformed Church in North America.

³Alvin Plantinga, "Spiritual Autobiography," accessed February 10, 2015, http://www.calvin.edu/125th/wolterst/p_bio.pdf.

CHAPTER 3

THEOLOGY

In order to claim that epistemology has the most significant bearing upon the divergence in divine action theory between Robert John Russell and Alvin Plantinga, it must first be shown that they have a similar understanding of God. It would be too demanding to provide a comprehensive systematic theology for both Russell and Plantinga in this work, and, while important generally, issues such as God's knowledge and God's righteousness will not have a major influence on the issue at hand. Instead, if it can be shown that Russell and Plantinga believe in a God who acts in creation, a God who acts in sustaining the universe, a triune God with will and purpose, and a God who acts in the historical resurrection of Jesus of Nazareth, then it can fairly be assumed that no major theological differences drive their different divine action theories.

Theology: Russell

As stated in Russell's biography, he has been ordained into the Church of Christ/Congregational. He does not claim, through them, any of the doctrines or creeds that a general understanding of Christian orthodoxy would claim.¹ And while he surely believes many of those creeds, evidenced by their appearance in his writing, I cannot in good conscious foist such creeds upon him if he does not explicitly claim them. Thus, Russell's understanding of God will not be as systematic as what is presented in Plantinga's idea of God. Even so, what matters to this research is not Russell's view of

¹Russell clarified his acceptance of Christian doctrine, claiming, "As a Christian theologian I affirm the traditional creeds (Apostles, Nicene-Constantinopolitan, etc.), and I draw most heavily on the theologies of Karl Barth, Wolfhart Pannenberg, Ted Peters, Karl Rahner, and Paul Tillich." Robert Russell, e-mail message to author, March 26, 2015.

God comprehensively, rather what will influence this paper is Russell's view of God as it relates to God's action in the material world. While it would be helpful if Russell and Plantinga agreed on all points about God's nature, what needs to be shown for the sake of comparing their epistemologies is that God exists immaterially and that God acts materially. Russell leaves no doubt that he believes in a God who constantly and intimately *acts*. And I begin the examination of his metaphysics of God with his clearest statement of that belief which arises in a response to John F. Haught. Haught understands Russell as claiming that the Christian faith can only be understood as an illusion if objective divine action cannot be shown.² Russell adamantly rejects that conditional statement and forcefully sets forth his understanding of the Christian faith, proclaiming, "Let me set the record straight: this is *not* my view of Christian faith . . . I begin with the claim that the sheer existence of each and every event, creature, or process in nature and history, along with the totality of them . . . the direct, objective (real) and unmediated result of God's action as Creator *ex nihilo*."³ This fact of creation is a prime reason for Russell's belief in objective divine action.

God and the Contingent Universe

What this paper demands is a set of propositions clearly setting forth who

²Haught's full citation is as follows, "In his acronym NIODA (noninterventionist objective divine action) Russell has set forth the theological requirements that (a) divine action must be objectively real, not simply a human construct, otherwise Christian faith has no substance and must be considered illusory." (John F. Haught, "Is Physics Fundamental? Robert John Russell on Divine Action," *Zygon* 45 [2010]: 215.) Haught's concern is not that Russell intends to claim that God's action is illusory if NIODA fails, rather he believes that even in developing the theory of NIODA that Russell has rendered God's action illusory. Haught explains that concern more fully, writing, "My hesitation regarding all of this is that in spite of Russell's endeavor to avoid naturalizing and thereby diminishing divine action, his project may have just such an unwanted effect anyway. I am especially skeptical toward Russell's at least implicit supposition that the quantum domain is the bottom rung or fundamental level of nature. It is this same assumption that leads Steven Weinberg to claim that if God does not show up at the fundamental quantum level of nature, the chances are good that the whole idea of divine action is an illusion." (Ibid., 217) Haught believes that Russell's search for NIODA lands him into atheism. Haught confuses the search for divine action with the warrant for theism. Russell does not utilize an argument from divine action or an argument from science to acquire warrant for belief in God. I include Haught's critique only because of Russell's explicit, direct response to it.

³Robert John Russell, "Cosmology from Alpha to Omega: Response to Reviews," *Zygon* 45 (2010): 241.

Russell thinks God is and what sorts of things God does or could potentially do. Russell, much like Plantinga, understands fully the consequences of necessary existence and contingent existence. That understanding can best be highlighted by contrasting God and the universe; Russell believes that the universe exists contingently whereas God exists necessarily. He believes that

in contemplating nature as cosmic fire one can discover that all of reality is contingent, fragile, consuming, and persisting. Nature is utterly dependent on something which goes beyond it for its very existence At the very heart of science lies a mystery which transcends science, a mystery as to the sheer existence of all that is.⁴

The contingent existence of the universe cries out for a transcendent, necessary cause, and in a Leibnizian-type of Cosmological Argument, Russell claims that God exists as that transcendent cause. He proceeds that “a universe whose sheer existence in the face of nonbeing cries out for an explanation, for a power which can ground it and give it reality. And this truly is God.”⁵ From God as the ground of being, Russell moves quickly to acknowledging God's transcendence, reasoning that “in its [the universe] unbroken contingency the universe speaks of God the transcendent, the eternal source of existence, the ground of the universal mystery of being.”⁶ As the ground of being, God may choose to work within the boundary of the materialistic universe but is not bound by it. The significance of Russell's use of the Cosmological Argument benefits the present analysis not in it being a successful proof of God's existence, rather in its fully exemplifying Russell's firm belief in a God who acts to bring the universe into existence.

Russell broadens the scope of God's action since a God who transcends physical reality without acting in it results in an impersonal and impassible deity. Thus, Russell believes God to be immanent, at least insofar as acts of nature are concerned. In a

⁴Robert John Russell, “Contemplation: A Scientific Context,” *Continuum* 2 (1990): 140.

⁵Ibid.

⁶Ibid., 141.

statement linking God's omnipresence with God's immanence, Russell says that “God's knowledge of the world is not affected by the limitations of the speed of light, since God is immanent in all events.”⁷ Immanence entails a God who acts, consistently and perpetually.

Russell also contrasts transcendence and immanence to capture the fullness of God. He writes, “And so to bring the first two facets together, from the reaches of cosmic fire to the depths of gossamer earth: God is both transcendent and immanent, the divine source beyond and the acting power within each particle and process of nature.”⁸ If God is the acting power within each particle and process of nature, then no event can be fully severed from God's input. These comments show that whether one considers transcendent acts or immanent acts, God is a major part of the process. And Russell believes those incessant acts to be evident in creation, “From a *theological* perspective the laws of nature and the kinds of causal efficacies they represent—ontological forms or immanent natural causality—are due ultimately to God's faithful and trustworthy action in creating the world *ex nihilo*.”⁹ Russell clearly believes in a God who acts in the creation of the universe, and a God who then proceeds to act throughout natural history. Russell's view goes beyond a mere sustaining of the universe as the deist would promote; indeed, God's providence influences the very course of history, including the guarantee of an ultimate, eschatological victory for God's purposes. But pure action is not enough to encompass Russell's conception of God since action can be performed by automatons, robots, or blind forces. Far from a dispassionate, impersonal power source, Russell envisions God as full of will, purpose, and freedom, in other words, God exhibits personhood.

⁷Robert John Russell, “Religion and the Theories of Science: A Response to Barbour,” *Zygon* 31 (1996): 31.

⁸Russell, “Contemplation,” 144.

⁹Robert John Russell, *Cosmology: From Alpha to Omega* (Minneapolis: Fortress Press, 2008), Kindle, loc. 2151.

The Triune God

In addition to being a transcendent and immanent God, Russell believes in a triune God which plays a critical role in his understanding of God as relational and in understanding the regularities of nature. While trinity fits better with ontology as opposed to the metaphysics of causation, triune existence allows for inferences about God's causal nature. If God exists as a trinity, then there exists necessary relationship within the Godhead between the persons of the Trinity. To entities capable of relationship, the attributes of personality and will have often been ascribed. Those properties imply that God would act causally within the economy of the triune relationship. Russell utilizes this trinitarian relationship in a discussion of natural laws, claiming that "in a trinitarian doctrine of God, these natural regularities and the intelligibility of nature are a result of the world being created through the second Person of the Trinity, the λόγος of God (John 1:3; Heb. 1:2). I tend to view the laws of nature in the latter, descriptive sense."¹⁰ The work of creation by God the Father through God the Son by the power of God the Spirit anchors what many perceive as natural laws. These regularities of nature manifest the steadfastness and faithfulness of God.

Trinitarian theology also serves as the answer for what Russell calls the God-world problem. How ought one to understand God's relationship to the universe without making God a part of the universe? Russell concludes that

a trinitarian framework provides the means to overcome the God-world problematic characterized by a false dichotomy between a godless world and a worldless god . . . Instead, Trinitarian thought places God within the world as the divine Spirit, yet allows God to ineffably transcend the world as its unoriginate source, and it combines these in a subtle Christology.¹¹

We see again God's transcendence, but more importantly we see the concept of a trinitarian existence that anchors God's relation to the world. The triune relationship gives

¹⁰Ibid., locs. 2151-61.

¹¹Robert John Russell, "Cosmology: From Alpha to Omega," *Zygon* 29 (1994): 572.

rise to God's relationship with the world and its creatures which serve as the impetus for divine action.

The Historical Resurrection of Jesus

To further utilize the work of God the Father through God the Son, Russell demonstrates the fullness of God's action in his understanding of the historical resurrection of Jesus. Since it would be incoherent for Jesus to resurrect himself, it follows that God the Father raised him from the dead. Russell uses this concept to wrestle with cosmic eschatology, writing that “the Resurrection of Jesus of Nazareth and through it the beginning of God's eschatological transformation of the world into the new creation, must, I believe, be the centerpiece of the conversations for Christians between theology and evolutionary biology.”¹² But evolutionary biology is not the only context for discussions of the resurrection. With respect to God's self-revelation, Russell writes that “for Christians, the supreme instance of this forgiving self-communication is found in the person of Jesus the Christ . . . we stammer the root confession of faith: Jesus died, Jesus rose from the dead, Jesus will come again.”¹³ Such a confession is in line with orthodox Christian theology. Later in the same article, he writes that “what makes monotheism Christian is its commitment to the historicity of the Resurrection of Jesus and the cosmological entailments of the 'scandal of particularity'.”¹⁴ Russell continues, “The historicity of the Resurrection keeps Christianity from a Gnostic, world-denying tendency and opens the door to nature's relation to eschatology.”¹⁵ Because the historical resurrection of Jesus was an event that happened in time, Russell clearly believes that

¹²Robert John Russell, “Five Key Topics on the Frontier of Theology and Science Today,” *Dialog* 46 (2007): 204.

¹³Russell, “Cosmology,” 565.

¹⁴*Ibid.*, 572.

¹⁵*Ibid.*

God acts explicitly within the material universe. Moreover, the resurrection functions as a hinge for relating Christian eschatology and cosmic eschatology which will be developed later in this dissertation.

Conclusion

While the preceding presentation of Russell's theology is anything but comprehensive, the three aspects considered show that Russell believes in an immaterial, transcendent God who acts immanently within the physical universe. First, since the universe is contingent, it stands in need of an explanation for its existence. Russell argues that God, through *ex nihilo* creation best explains the universe's existence. Second, God's trinitarian existence highlights his relational nature which has implications for eschatology and the God-world problem. God's relational nature implies personality and will which are necessary conditions for agency. Third, a robust belief in the historical resurrection of Jesus demonstrates conclusively that Russell believes in a God who acts immanently and specifically within the material universe.

Theology: Plantinga

Plantinga's work has consisted of a steady, sometimes subtle attack on philosophical naturalism. From his doctoral dissertation, *Ethics and Metaphysical Naturalism* (1958), to his most recent work, *Where the Conflict Really Lies* (2010), Plantinga has relentlessly assaulted philosophical naturalism for fifty-three years, bearing much fruit in the process. What follows this introduction is Plantinga's alternative to philosophical naturalism: theism, and Christian theism in particular. The goal is to show *what* Plantinga believes rather than *why* he believes it. I will utilize the creeds that he cites and the attributes inherent in the arguments he uses for God's existence.

I compile Plantinga's view of God from four sources: *Where the Conflict Really Lies*, *Does God have a Nature?*, *Warranted Christian Belief*, and Plantinga's spiritual autobiography. I make references to his work on modality and the Ontological

argument in the section discussing naturalism.

General God Description

In addition to citing the Heidelberg Catechism in *Where the Conflict Really Lies*, Plantinga gives a brief description of who he believes God to be, particularly those aspects of God which influence one to believe that God acts in the universe. He describes God as, “A being who has knowledge; he also has affections . . . he has ends and aims, and acts on the basis of his knowledge to achieve his ends. Furthermore, God is all-powerful, all-knowing, and wholly good.”¹⁶ From these attributes, one may safely infer that Plantinga subscribes to some form of Anselm's perfect being theology. After listing these features of God's nature, Plantinga moves on to the way God works.

Plantinga sets forth three points about God's action in and toward the material universe. First, he writes that “God has created our world . . . Furthermore, he has created it 'out of nothing'.”¹⁷ God exists distinctly from the world which avoids any concept of pantheism or even panentheism. But more than merely creating the universe, Plantinga believes that “God *conserves* the world, sustains it in being. Apart from his sustaining hand, our universe . . . would disappear like a candle flame in a high wind.”¹⁸ If God were to cease sustaining the universe, the universe would cease to exist, which shows God's independence from the universe and that the universe does depend on God. But even more than merely creating and merely sustaining the universe, Plantinga believes that “God so governs the world that whatever happens is to be thought of as 'coming from his fatherly hand'; he either causes or permits whatever does in fact happen; none of it is to be thought of as a result of mere chance.”¹⁹ He understands that relation to causation in

¹⁶Alvin Plantinga, *Where the Conflict Really Lies* (New York: Oxford University Press, 2010), 65.

¹⁷Ibid.

¹⁸Ibid.

¹⁹Ibid.

the two ways that the Heidelberg Catechism sets forth: first, God implants regularity into the world, and second, God sometimes supersedes that regularity to act in different ways. Plantinga writes that “it is also true that God sometimes does things differently; he sometimes deviates from the usual way in which he treats the stuff he has made.”²⁰ Plantinga certainly includes miracles as a different way God acts opposed to the normal way of things, but he also includes Calvin's idea of the internal witness of the Holy Spirit and Aquinas' concept of the internal instigation of the Holy Spirit as extra-regular acts of God.²¹ In sum, God is a person with affections and will who acts generally in creating and sustaining the universe and acts more specifically in, at least, miracles, the witness of the Holy Spirit, and the instigation of the Holy Spirit. The attributes of God listed above must be detailed more fully to understand Plantinga's theology of God's being and God's action.

Divine Attributes

First, in *Does God have a Nature?*, Plantinga discusses God's aseity and sovereignty.²² He defines aseity as God's, “Uncreatedness, self-sufficiency and independence of everything else.”²³ Plantinga defines his sovereignty as, “His control over all things and the dependence of all else on his creative and sustaining activity.”²⁴ These two features of being are fundamental to God's nature because out of them the rest of philosophical theology flows. If God possesses these two attributes, then God should be understood as the creator of all things, “Most Christians claim that God is the

²⁰Ibid., 66.

²¹Ibid.

²²The book was created from Plantinga's 1980 Aquinas Lecture address at Marquette University.

²³Alvin Plantinga, *Does God have a Nature* (Milwaukee: Marquette University Press, 1980), 1-2.

²⁴Ibid., 2.

uncreated creator of all things; all things depend on him, and he depends upon nothing at all.”²⁵ Plantinga certainly considers God to be the beginning of all things which shows that God acts in the creation of the material universe.

Plantinga has not shied away from the Ontological argument. As such, Plantinga subscribes to perfect being theology, writing that “God's greatness has many facets; preeminent among them are his love, justice, mercy, power and knowledge.”²⁶ These attributes are the traditional view God as the maximally perfect being. Less important for this project is how Plantinga defines the nuances of all of these attributes than that he believes in all of these attributes. Later in the same text, Plantinga again refers to God's attributes of omnipotence and omniscience when he is relating them to abstract objects. This quote is worth citing at length because it shows Plantinga's utilization of the metaphysics of modality in addition to his understanding of omnipotence and omniscience:

Which properties are included in God's nature? If, as most of the Christian tradition affirms, he could not have been powerless, or morally imperfect or without knowledge, then he has the complements of those properties essentially; being knowledgeable, morally perfect, and powerful will be part of his nature. But the tradition has typically gone further; God is not only not possibly powerless; he is essentially omnipotent. And not only is he essentially knowledgeable; he is essentially omniscient. That is, he believes no false propositions, and for any true proposition p , God knows that p : and this is so in every world in which he exists.²⁷

Not only in that quote do we learn that Plantinga adheres to traditional, orthodox definitions of omnipotence and omniscience, but we learn what Plantinga thinks about the nature of God's existence: it is essential. He goes on to cite God's essential existence, “But suppose he exists in every world.”²⁸ The accompaniment of a maximally perfect being existing in every possible world is the foundation of Plantinga's formulation of the

²⁵Ibid.

²⁶Ibid., 1.

²⁷Ibid., 141-42.

²⁸Ibid., 142.

Ontological argument and it reveals Plantinga's belief that God exists necessarily.

Confessions of Faith

From his spiritual autobiography, we learn that Plantinga was taught, and adopted, the classical TULIP description of five point Calvinism. He writes about total depravity, specifically, and his understanding of it gives rise to his view of the noetic effects of sin which will play such a crucial role in his epistemology. Plantinga explains that “I remember wondering in particular about total depravity. I do indeed subscribe to that doctrine, which, as I understand it, quite properly points out that for most or all of us, every important area of our lives is distorted and compromised by sin.”²⁹ The significance to this project of that statement is not what it says about humanity, but what it says about God. If people are being justified from God's wrath but are completely depraved, then God must have some active participation in that salvation. Thus, one can safely say that God actively engages individual's spiritual and mental being. While those realms are considered immaterial, the propositions still reveals that God is relational and active. Plantinga then claims that he subscribes to the Belgic Confession and the Heidelberg Confession, which reveal more fully his understanding of God.³⁰

The Belgic Confession. The Belgic Confession is dated to 1561 and was written to articulate a Reformed faith in the time of the Spanish Inquisition. In Article 1, the confession reads, “We all believe in our hearts and confess with our mouths that there

²⁹Alvin Plantinga, “Spiritual Autobiography,” accessed July 19, 2014, http://www.calvin.edu/125th/wolterst/p_bio.pdf.

³⁰Plantinga writes in a footnote that “these five points [TULIP] summarize the declarations of the Synod of Dort (1618-1619); they essentially distinguish one kind of the 17th century Calvinist from another kind (and do not at all obviously represent what John Calvin himself had in mind). A number of the Reformed churches have adopted the Canons of Dort as one of their confessional standards; my own church, the Christian Reformed Church, takes the Belgic Confession and the Heidelberg Catechism as well as the Canons as its standard. The former two can properly be said to embody what is essential to Calvinism, but the latter is really addressed to the 17th century internecine quarrel among Calvinists. Plantinga, “Spiritual Autobiography.”

is a single and simple spiritual being, whom we call God – eternal, incomprehensible, invisible, unchangeable, infinite, almighty; completely wise, just, and good, and the overflowing source of all good.”³¹ As for the Trinity, the confession states, “We believe in one God, who is one single essence, in whom there are three persons, really, truly and eternally distinct according to their incommunicable properties—namely, Father, Son, and Holy Spirit.”³² With regard to God's action of creating the universe and of ongoing action in the universe, the confession states, “We believe that the Father, when it seemed good to him, created heaven and earth and all other creatures from nothing . . . Even now, God also sustains and governs them [creatures other than humans] all, according to his eternal providence and by his infinite power, that they may serve humanity, in order that humanity may serve God.”³³ The confession goes into more detail regarding God's providence, specifically that “we believe that this good God, after creating all things, did not abandon them to chance or fortune but leads and governs them according to his holy will, in such a way that nothing happens in this world without God's orderly arrangement.”³⁴ God does more than simply sustain the universe after its creation, letting it run its course subject to everlasting natural laws; God actively participates in every action of reality, either permissively or directly. Since Plantinga follows this confession, he will seek that divine action model that most intimately integrates God's work and the natural laws.

The Heidelberg Catechism. The Heidelberg catechism explains various statements of faith for the sake of teaching a biblical theology. About the Father, the

³¹“The Belgic Confession,” accessed July 19, 2014, <http://www.crcna.org/welcome/beliefs/confessions/belgic-confession>.

³²Ibid., Article 8.

³³Ibid., Article 12.

³⁴Ibid., Article 13.

catechism teaches that “the eternal Father of our Lord Jesus Christ, who out of nothing created heaven and earth and everything in them, who still upholds and rules them by his eternal counsel and providence.”³⁵ Reiterating the Belgic Confession, the Heidelberg Catechism maintains that God actively engages the material universe in its coming into existence and its continued existence. Concerning God's providence, the catechism goes into detail about the sorts of actions with which God is engaged, “God upholds, as with his hand, heaven and earth and all creatures, and so rules them that leaf and blade, rain and drought, fruitful and lean years, food and drink, health and sickness, prosperity and poverty—all things, in fact, come to us not by chance but by his fatherly hand.”³⁶ From these two confessions of faith, we can be sure that Plantinga is a Trinitarian theist who believes in a God who actively participates in the events of reality, even the mundane events.

Work of the Christian God

In *Warranted Christian Belief* Plantinga spends some time on theology when he extends his Aquinas/Calvin model to the broader corpus of Christian belief. In one sense, whether or not Plantinga and Russell accept the various aspects of the Christian faith in unison is irrelevant to this dissertation since we are concerned with their general metaphysics. In another sense, however, their stances on various Christian beliefs can reveal a great deal about the nature of God's actions because so many aspects of the Christian faith are concerned with what God *has done* or *is doing*. Thus, it is worth relaying Plantinga's *reductio* of the Christian faith with respect to his epistemological model at length:

According to the model . . . we human beings were created in the image of God: we

³⁵“The Heidelberg Catechism,” accessed July 19, 2014, <http://www.crcna.org/welcome/beliefs/confessions/heidelberg-catechism>.

³⁶Ibid.

were created both with appropriate affections and with knowledge of God and his greatness and glory. Because of the greatest calamity to befall the human race, however, we fell into sin, a ruinous condition from which we require rescue and redemption. God proposed and instituted a plan of salvation from sin and renewed relationship with God. Now . . . God needed a way to inform us . . . of the scheme of salvation he has graciously made available. No doubt he could have done this in many ways; in fact he chose to do so by way of a three-tiered cognitive process. First, he arranged for the production of the *Scripture*, the Bible, a library of books or writings each of which has a human author, but each of which is also specially inspired by God in such a way that he himself is its principal author. Thus, the whole library has a single principal author: God himself . . . there is a central theme and focus . . . the gospel, the stunning good news of the way of salvation God has graciously offered. Correlative with Scripture and necessary to its properly serving its purpose is the *second* element of this three-tiered cognitive process: the presence and action of the Holy Spirit promised by Christ himself before his death and resurrection, and invoked and celebrated in the epistles of the apostle Paul. By virtue of the work of the Holy Spirit in the hearts of those to whom faith is given, the ravages of sin . . . are repaired, gradually or suddenly, to a greater or lesser extent. Furthermore, it is by virtue of the activity of the Holy Spirit that Christians come to grasp, believe, accept, endorse, and rejoice in the truth of the great things of the gospel . . . According to John Calvin, the principal work of the Holy Spirit is the production (in the hearts of Christian believers) of the third element of the process, *faith*.³⁷

This passage reveals explicitly the way Plantinga conceives God and God's work. God is first a creator of all things with special emphasis on the creation of humanity. Forming the physical bodies of humans after the universe has existed for some times shows direct action in the material universe. God acts as a personal agent in *planning* and *instituting* a plan of redemption for humanity. God conveys information to humanity in order to reveal to them the nature of salvation, in addition to other facts about reality. God functions as the author of the Bible, *inspiring* its human authors to convey, appropriately and correctly, God's very thoughts. The historical resurrection of Jesus is attested to within the statement which again shows direct action by God in the material universe. The third person of the Trinity acts as well in a particular role to *teach* humans the truths of Scripture and to *convict* humans to repent of their rebellion against God. Finally, the Holy Spirit *regenerates* the fallen individual so that he or she can have faith. Plantinga leaves no doubt that God works, both intimately and perpetually within the material universe.

³⁷Alvin Plantinga, *Warranted Christian Belief* (New York: Oxford University Press, 2000), 243-44.

CHAPTER 4

PHILOSOPHY OF SCIENCE

Not only must it be shown that Robert John Russell and Alvin Plantinga have a similar view of God's nature and God's action, but it must also be shown that they both maintain a similar view of science, what it is and what it does. This chapter sets forth each thinker's broad view of the scientific enterprise by focusing on various features within the scientific disciplines that will affect various aspects of divine action theory. Special attention is paid to the agreement between Russell and Plantinga concerning the significance of the transition from classical mechanics to quantum mechanics, and their disagreement concerning the necessity of methodological naturalism for the proper employment of science.

Philosophy of Science: Russell

A presentation of Russell's view of the goals of science, the proper understanding of natural laws, and his view of quantum mechanics shows that he and Plantinga hold similar beliefs regarding the nature of science. After those concepts are established, a look at Russell's understanding of the scientific method, specifically methodological naturalism is highlighted because he and Plantinga disagree over its necessity. I close the section with a description of Russell's concerns for interventionism.

What Is a Natural Law?

As can be deduced from Russell's belief that the universe is contingent, he will argue that natural laws are also contingent. He will still maintain, however, that even on a contingent understanding of natural laws, God cannot, due to the demand for consistency within the divine will, violate those established, natural processes. Though God could

have created any universe God chose, once that universe exists, God is constrained by the divine choice to work within that universe's conditions. Russell believes natural laws to be the regularities of nature seen in various phenomena. He writes that "by 'laws of nature' we mean the regularities of natural processes as subsumed into scientific theories most often through mathematical formulation."¹ With that definition in place, Russell goes on to expound the proper understanding of it, writing that "first of all, most scholars recognize that the actual laws of nature—if there are such laws—are only partially and provisionally represented by the laws contained in particular scientific theories . . . whether we will ever discover the actual laws is a debatable question."² While knowing about them is an epistemological question, the import here is that they do seem to exist, or at least Russell believes there to be "actual laws." These laws are not the inviolable edicts present in Laplace's conception of Newtonian mechanics, rather they are just how nature works. Russell notes that scientists may not have the *actual* laws properly modeled, but that they are in part represented in the mathematical descriptions of nature.

After explaining that the two most common ways of understanding natural laws are either as Platonic entities or as descriptions of either natural regularities or nature's causal efficacy, Russell writes that "I tend to view the laws of nature in the latter, descriptive sense."³ Instead of existing in the sense of abstract objects, the laws are the perceived order of nature that arises due to consistencies in nature. This view of natural law is common among philosophers of science today precisely because natural laws are generally understood as contingent; the world could have manifested some other "package" of regularities that would exhibit a different set of natural laws. Because of his belief in natural law as a description of regularity in nature, Russell will not have to bear

¹Robert John Russell, *Cosmology: From Alpha to Omega* (Minneapolis: Fortress Press, 2008), Kindle, loc. 2151.

²Ibid.

³Ibid., loc. 2161.

the burden of God “breaking” natural laws in order to perform acts in the material universe. Nevertheless, Russell will still eschew any talk of divine intervention, only he will do so on grounds theodicy and on grounds of God's apparent self-willed contradiction: creating laws only to later break them. Regardless of the implications Russell attaches to his understanding of natural laws, he believes that they are less like unbreakable laws of the universe and more like the necessary consequence of God having created an ordered universe.

From Newtonian to Quantum Mechanics

The development of quantum theory had extreme ramifications for more disciplines than physics; it changed the way that many individuals thought metaphysically about the determinism of natural phenomena and the closed nature of the universe. In highlighting various key aspects of the history of divine action theory, Russell suggests that the establishment of Newtonian mechanics changed the way that many people thought about God's action and God's relationship to the universe. Whereas before Newtonian mechanics, it was possible to consider God constantly working in hidden ways to bring about the divine will, the machine-like understanding of Newtonian mechanics seemed to exclude a God who acts to bring about differences in the course of nature and history.

General providence over all of reality and special providence in particular, spatio-temporal moments were no major issue prior to Newtonian theory. Newtonian mechanics shattered that image with an interpretation of nature as a grand machine. Russell describes the transition clearly, “Newtonian mechanics depicted a causally closed universe with little, if any, room for God's *special* action in specific events—and then only by intervention.”⁴ If the universe is closed from external energy input, and

⁴Ibid., loc. 2058.

presumably, more broadly understood causal inputs, then how is a transcendent God supposed to act meaningfully in the material universe? While Newton maintained a role for God, albeit a somewhat detached role, some interpreted Newtonian mechanics to the extreme of causal closure. Russell writes that “a century later, Pierre Simon Laplace (1749-1827) combined the *determinism* of Newton's equations with *epistemological reductionism* . . . and *metaphysical reductionism* . . . to portray all of nature as a causally closed, impersonal mechanism.”⁵ Russell goes on to argue that this move by Laplace led to widespread acceptance of interventionism, meaning that God must violate the laws of nature in order to act in nature.

Russell then notes the Laplacean attitude in the thought of David Hume and Immanuel Kant, arguing that Kant's move of grounding God in the practical reason rather than in pure reason caused a schism between science and theology. Following the bankruptcy of deism, many theologians relocated theology from the objectivity of the external world to the subjectivity of the individual's personal experience. For those who rejected Darwinianism as a viable mode of God's action, theology seemed to be a meaningless practice; an idea which was displayed most fully by the logical positivists. But with the rise of quantum theory which allows for nature to be interpreted as ontologically causally open, new avenues for modeling God's action appeared.

The indeterministic potential of quantum theory can be traced to the kinds of statistics that model the quantum realm. Russell shows how the very statistics that allow for indeterminacy on the quantum level birth the deterministic statistics of classical mechanics. A brief description of his explanation will serve to show his rejection of Newtonian mechanics as an accurate description of fundamental nature and lead into Russell's thoughts on ontological indeterminism. Russell notes that microscopic properties can be modeled through Fermi-Dirac statistics; the constituents of these

⁵Ibid., locs. 2058-2067.

processes, quarks, leptons, and the composites that they form, are called fermions. Another set of processes, such as the ones that produce the strong and weak electric forces, follow Bose-Einstein statistics. Examples of bosons are photons, gluons, and gravitons. As these processes reach room temperature, these different sets of statistics approach classical statistics which obey the Boltzmannian equation. After noting that Boltzmannian statistics were formulated on the basis of classical Newtonian physics, Russell draws out the connection between the theories:

So if we are interested in ontology and start with Boltzmannian statistics, we are led in opposite directions: to *determinism* if we stay within the framework of the classical world in which it originated, and to *indeterminism* if we move to the quantum world and derive Boltzmannian statistics from FD and BE statistics.⁶

He concludes that the macroscopic determinism modeled in Boltzmannian statistics is the product of the quantum world of Fermi-Dirac and Bose-Einstein statistics that allow for an ontological indeterminism. In other words, the theories of indeterminism are precisely the foundation that leads to classical determinism. Thus, a good case exists that reality is casually indeterministic.⁷

Russell clearly rejects Newtonian mechanics as a true description of nature. He straightforwardly comments that “as a useful theory for practical needs, like engineering or planetary exploration, it [Newtonian mechanics] is excellent. But as a fundamental theory of nature, its explanation of the world is wrong.”⁸ If this reality is not realized, then theology remains semantically trapped as it attempts to relate God's action to

⁶Russell, “Divine Action and Quantum Mechanics,” in *Philosophy and Divine Action* (Boston: Brill, 2009), 358.

⁷Russell makes similar statements elsewhere, writing that “one could even say metaphorically that the classical world is an artifact of the quantum world, or more precisely, that the classical world is an anthropocentric construct, however convincing to everyday experience. Indeed, the ontological hints we get from quantum physics suggest that the world is far different from what it appears to be classically. Far from being composed of ‘billiard balls in motion,’ quantum physics suggests that matter carries an irreducibly holistic and nonlocal or nonseparable character, challenging our traditional metaphysics categories of space, time, matter, and causality.” See Robert John Russell, “Does ‘The God Who Acts’ Really Act? New Approaches to Divine Action in Light of Science,” *Theology Today* 54 (1997): 56

⁸Russell, “Divine Action and Quantum Mechanics,” 363.

science. Russell laments that “it is within this classical view of nature as a closed causal system that the theology of previous centuries has operated—and much of contemporary theology still does!”⁹ But as Russell clearly states, Newtonian mechanics have been superseded as the true description of our universe. He paraphrases Charles Misner to that end, claiming that “as Charles Misner has remarked, the theories that we know are 'proven' are the ones that have been the most clearly falsified!”¹⁰ And Russell himself makes the statement that “classical physics is in principle false.”¹¹ If classical physics is false, then theology can look to quantum theory for explanations of how God acts objectively and meaningfully, insofar as science is concerned, within the material universe.

A final, and crucial, point concerning quantum theory versus classical physics is that Russell argues that there will never be a return to the metaphysical understanding inherent in classical physics. Quantum theory may one day be replaced by something different which might give rise to a different set of presuppositions resulting in a different metaphysics, but it will not be the metaphysical picture painted by classical physics. Russell writes that “most scholars now agree that *any* future theory concerned with the atomic and subatomic realms will have to favor either nonlocal realism or local antirealism. In short, we will never return to the local realist metaphysics of classical physics.”¹² This idea has emboldened theologians to seek a locus for God's action within quantum theory, and a key piece within this new metaphysical framework that greatly influences Russell's thought is chance.

⁹Ibid.

¹⁰Ibid.

¹¹Ibid.

¹²Russell, “Does ‘The God Who Acts’,” 57.

On chance. Since chance plays such a significant role in Russell's divine action theory and since he explains his understanding of chance in the context of ontological indeterminism, chance must be clearly understood to grasp his conception of divine action. Because the quantum understanding of nature can be interpreted as ontologically open, the actual effects that obtain from any quantum event are a product of statistical chance. Russell depicts two ways of understanding chance as, “1) chance evident in a single causal trajectory . . . 2) Chance due to the random juxtaposition of several causal trajectories.”¹³ The former consists of random forces within a single system while the latter consists of events between causally independent trajectories. The thrust here is that on the Laplacean interpretation of Newtonian mechanics, one can predict all future events given sufficient data about preceding events. If the Laplacean picture holds, then the chance is merely epistemic, that is, arising from ignorance.

But in light of quantum theory, such notions of chance can be understood ontologically. Russell writes that “scholars in theology and science have made a powerful case that various fields, including cosmology, thermodynamics, chaos theory, and quantum mechanics, do indeed suggest or point to ontological indeterminism.”¹⁴ The consequence of that proposition's truth would entail that nature is fundamentally indeterministic; chance becomes real for nature's most elementary states and systems. Russell proceeds that

if this surmise is correct, it would mean that the presence of statistics in the mathematics of these fields does not arise from our ignorance of the underlying deterministic forces but from the fact that there are, in reality, no sufficient underlying forces or causes to fully determine particular physical processes, events, or outcomes.¹⁵

Within these *actually* existing potentialities of nature, God has ample room to influence

¹³Russell, *Cosmology*, loc. 2170.

¹⁴*Ibid.*, loc. 2179.

¹⁵*Ibid.*

and even cause events without intervention. Thus, Russell subscribes to nature's ontological indeterminism as a pivotal piece of the divine action puzzle.

Methodological Naturalism

Science seeks to discover facts about the physical nature of the universe by using models, theories, mathematical equations, empirical observation, and empirical testing to produce a mathematical description of how our universe functions. Russell certainly believes that science does produce such truth, but more important than his understanding of what science is, is how science follows strict protocols and assumptions to obtain truth. To begin, we must understand the assumptions that make science possible.

Methodological naturalism in general. The premier assumption of scientists, and perhaps science as well, that guides its inquiries into our universe is methodological naturalism. Methodological naturalism maintains that science must function materially and naturalistically. When discussing Hick's concept of "epistemic distance" as it relates to spirituality and science, Russell writes that those ideas are reconciled, "In the methodological presupposition on which science is based, namely methodological naturalism: scientific theories account for the processes of nature in terms of natural causes and effects. It would violate this methodology to invoke "God" in a scientific theory."¹⁶ A prerequisite for science to proceed is to assume that God does not exist. This point is not to claim that science teaches atheism, rather the claim is that science cannot use God as a scientific explanation. Russell argues that science must remain neutral on the question of God's existence. If ever a theory were to include a reference to the supernatural, then that theory would transcend the realm of science; it would be

¹⁶Robert John Russell, "Natural Sciences," in *The Blackwell Companion to Christian Spirituality*, ed. Arthur Holder (Malden, MA: Wiley-Blackwell, 2011), 327.

philosophy or something of the kind. Russell continues, writing that “now, we have just seen that epistemic distance as a requirement for both moral growth and Christian spiritual discernment entails that the world must be 'as if there were no God.' Thus epistemic distance is *also* the prerequisite of methodological naturalism, and thus, in turn, of natural science.”¹⁷ This idea of epistemic distance, that God must be hidden yet discernible, functions similarly across the disciplines of spirituality and the sciences. Moreover, scientific understandings of the universe would not be possible without this concept; Russell explains that “the 'hiddenness' of God in the world makes possible a scientific understanding of nature, by which we view the world 'as if there were no God'.”¹⁸ Thus, methodological naturalism, as a pragmatic assumption rather than as a metaphysics of reality is necessary for the enactment of science.¹⁹

One critical aspect of the scientific enterprise is its understanding of data. It's accumulation of and application of data for its theories differs from that of religion. Russell believes that science functions as less of a cognitive hybrid than religion. Religion clearly is a hybrid, but science is a hybrid in that theory choice in science, for instance, includes aesthetic and metaphysical elements.²⁰ These aspects of science are heavily subjective. He writes that “religious models serve noncognitive functions which are missing in science, such as eliciting attitudes, personal involvement, and transformation.”²¹ It is not so much the case that science deals with facts while religion does not, rather it is the case that science deals with facts only. Those facts tend to be

¹⁷Ibid.

¹⁸Ibid.

¹⁹It is worth noting, and this idea will be expounded upon in subsequent chapters, that Russell maintains that methodological naturalism does not presuppose or even imply metaphysical naturalism. For Russell, methodological naturalism points to an epistemological method or tool as opposed to an ontological status.

²⁰Robert Russell, e-mail message to the author, March 26, 2015.

²¹Russell, *Cosmology*, loc. 230.

universally agreed upon, though some of the interpretations of the facts diverge. Notice also the objectivity, or at least the perceived objectivity, inherent to science. Since science does not deal with attitudes, personal involvement, and transformation (presumably on the order of worldview), it can to a lesser extent than theology reference subjective factors.

Second, Russell argues that theories take precedence in science whereas models take precedence in religion. Scientific models are precisely those models which can account for the broadest range of theories. Russell suggests that “in science, theories tend to dominate models, whereas in religion models are more influential than theories.”²² This distinction arises, in part, from science's reliance upon analysis of objectively perceptual observations. Since subjectivism arises to a lesser degree in science, it can focus more heavily upon empirical data.

Lastly, Russell maintains that religion does not incorporate fundamental laws or regularities which are the framework for science. He stresses that “religion lacks lower-level laws such as those found in science, and the emergence of consensus seems 'an unrealizable goal'.”²³ Consensus in science comes from agreed upon analysis of the empirical observations available to all. Again, objectivity is certainly the goal of science and at least certain aspects of science are objective, but it remains subjective in many ways.²⁴ Consensus can be had in the sciences, what Plantinga will call Duhemian science, but will not be attainable in religion.

²²Ibid.

²³Ibid.

²⁴Russell notes that the subjective aspects of science include but are not limited to the construction of new theories, the choice between competing theories, insight and imagination in discovering new theories, and conflicts over the interpretation of data. Robert Russell, e-mail message to the author, March 26, 2015.

Methodological naturalism in particular. How then does one know when propositions have moved from the scientific realm to the theological realm? One can tell when one has traversed the realms by checking one's adherence to methodological naturalism. In an article where Russell argues that Intelligent Design should not be taught in public school science classes, he writes that “my own view is that God *does* act within nature and that Darwinian evolution is the result. Note, however, this is a theological claim, not a scientific one.”²⁵ Why is such a claim theological as opposed to scientific? The claim is theological because reference to God is made, that is, the proposition is not a subset of metaphysical naturalism. Russell goes on to claim that “belief in God can *inspire* scientists to pursue specific scientific research proposals, but such research cannot include reference to God and remain within science . . . *It [Intelligent Design] is at most a theological claim in disguise.*”²⁶ Theology can influence scientific research but it can in no way become a part of scientific research. Since God cannot be appealed to as a causal explanation in science, then science, by definition, must exclude God, specifically and supernaturalism, generally.

In another statement elucidating this point, Russell writes concerning science's understanding of scientific predictions that “this assumption [methodological naturalism] is required in the practice of science since scientific theories must be empirically falsifiable, but it is not required in taking science into the theological conversation.”²⁷ Here, a clear distinction is made between science and theology that reverberates throughout Russell's system. He elaborates on the consequence of this idea when he writes that “instead, it is quite possible for theologians to accept a very different philosophical assumption about future predictions of science while accepting what

²⁵Robert John Russell, “Intelligent Design is Not Science and Does Not Qualify to be Taught in Public School Science Classes,” *Theology and Science* 3 (2005): 132.

²⁶Ibid.

²⁷Russell, *Cosmology*, loc. 506.

science tells us about the past history of the universe.”²⁸ As will be seen in the following sections, science past and the fundamental natural sciences will be put epistemic constraints on theology, but not all predictions of science future need necessarily be binding.

A consequence of such a definition of science is that all claims must be testable, or falsifiable to use Popper's terminology. In some places, Russell will argue that theological claims are falsifiable based on their ability to predict and model life's experiences, but he does so only analogically. Because theological claims cannot be tested experimentally to show their falsifiability, they do not constitute science. To be science then, mere falsifiability is not enough; there must be falsifiability within the context of experimentation. Russell reveals this belief when commenting upon the intelligent aliens hypothesis of the beginning of biological life on Earth, writing that “these two claims should be enough to rid us of ID as a *scientific* theory since there is *no way to test them* even if they seemed credible.”^{29,30} On Russell's view, God should not be used as an explanation in science, but theology does incorporate, and go beyond the findings of science.

Russell uses at least one more argument to support the exclusion of God as a natural explanation within science. Russell notes that science must be contingent since it can never fully rule out any philosophical system. This idea goes back to the notion of scientific data standing in need of some interpretation. Russell writes that “for science,

²⁸Ibid.

²⁹Russell, “Intelligent Design is Not Science,” 131.

³⁰The two claims are the consequence of believing that intelligent aliens brought about the origin of life and that they guided evolution. The claims state that “the intelligent aliens knew in advance each step they needed to take to guide the long and detailed biochemical processes if it were to succeed, and (b) they acted in such a sway that they left no trace of having been involved anywhere in the process (no ‘footprints’).” (Ibid.) So, to be fair, Russell may be arguing that the *no trace* hypothesis is untestable as opposed to merely the positing of intelligent beings is untestable. In either case, empirical testing through naturalistic experimentation must be possible on Russell's view of science. Thus, appeals to God are *a priori* excluded in science.

this means that God cannot be an explicit 'part of the equation,' as it were, since this would introduce an entirely necessary element into what should be an entirely contingent argument.”³¹ Thus, the necessary being, God, cannot enter into the development of scientific theories in order to retain nature's utter contingency.

Some may conclude that Russell believes that science takes precedence over theology. However, Russell sees the relationship as much more intertwined than one discipline dictating to another. He understands science and theology to reveal distinct but potentially amalgamated truths about God. He writes that “essentially what science describes without reference to God is precisely what God, working invisibly in, with, and through the processes of nature, is accomplishing.”³² Science, though it must remain neutral on the question of God’s existence and functions, for pragmatic reasons, as if God does not exist, does not reveal truths apart from the divine, rather the very facts science discovers are the acts of God. The problem is that many make the mistake of conflating the two which would render science impotent. Russell writes that “these consequences [from God's special action] would not otherwise have occurred within God's general providence alone, though they can only be recognized as due to God's action through faith.”³³ Therefore, it is not the case that science does not reveal the truth of God, rather it is the case that science must remain ignorant of the fact that revealing the truth of God is precisely what it is doing. But, if God is fully excluded from scientific explanation, then what sort of dialogue is possible for science and theology?

Science and Theology

At the outset, one must realize that Russell believes that science has much to

³¹Russell, “Cosmology,” 560.

³²Russell, *Cosmology*, loc. 3798.

³³*Ibid.*, loc. 3822.

say to theology and that theology can possibly have some input into the sciences, but that they do not begin together nor do they necessarily grow together. They discover their facts and create their theories in isolation first, and then attempt to come together in some mutually beneficial, dynamic way. Russell offers an extended metaphor of the Golden Gate Bridge to make this point:

I was inspired by the Golden Gate Bridge that unites San Francisco with its neighbors to the north. It was built, not from one side to the other, but starting from both sides and meeting in the middle. Each community, scientific and religious, must first find bedrock in its own field of inquiry and according to its own intellectual standards. Each must then raise towers to soar upward into the sky above them, troll cables across the waters between them, and haul these cables to the towers' tops. Finally, bold adventurers from both communities would climb out on the slender cables hanging in space above the churning cold ocean, and while pointing across the gulf that still separates them, drop suspension cables to support an emerging highway below, hoping that in the fullness of time this highway will finally meet at the center and bear fruitful traffic in both directions.³⁴

The initial understanding, the *building of the towers*, represents Russell's understanding of science working on its own terms with its own assumptions answering its own questions and religion doing the same. Only after they have done that work can they then come together to offer meaningful insights to one another.

Russell highlights two primary commonalities between science and religion. First, they make the same sorts of claims through an analogous methodology, and second, they incorporate models to represent their respective understanding. About the first, Russell claims that “both science and religion make cognitive claims about the world using a Hempelian hypothetico-deductive method that incorporates a form of Popperian falsificationism placed within a contextualist and historicist framework complete with metaphysical commitments and criteria of theory assessment.”³⁵ In other words, they both propose theories that are capable of being shown to be false based upon the accepted truth within each system. Elsewhere, Russell writes that “in both fields, paradigms offer

³⁴Ibid., loc. 166.

³⁵Ibid., loc. 230.

an overarching framework of interpretation and include both metaphysical and aesthetic elements. The choice of which data count as relevant reflects the biases of the theory being tested (i.e., “all data are theory-laden”).³⁶ The biases will be grounded in whichever epistemological foundation the discipline utilizes.

Also within analogous methodology is the idea of testing theories. Russell writes that “theories (doctrines) are tested by their fruitfulness in interpreting new kinds of data and in their practical consequences for life.”³⁷ For science, the theory is tested by how well it predicts empirical observations and withstands isolated variable testing. For theology, the practical outworking of theological claims must make legitimate predictions about further understandings of God and living a quality life. In both cases, the claims must match experience.

The last part of methodological similarity comes with the fundamental assessment of the metaphysics of science. Russell holds a critical realist interpretation of science and theology, a view that has close ties to a correspondence theory of truth. Russell believes that “both fields can be given a critical realist interpretation in which knowledge is referential although partial and revisable, and in which both subjective and objective elements are present.”³⁸ Significant in this approach is the concept that just as scientific theories become outdated and replaced with newer theories that better fit the empirical data, so too can theology become outdated and in need of replacement. The idea of revisability on the basis of falsifiability provides a deep connection between Russell's understanding of science and his understanding of theology, and it will be a fundamental difference between Russell's approach to divine action as opposed to Plantinga's approach to divine action. It is worth mentioning here that Russell rejects

³⁶Russell, “Natural Sciences,” 329.

³⁷Ibid., 330.

³⁸Ibid.

much of the metaphysics that supported Barbour's understanding of critical realism. Russell writes that “over the decades, Barbour has increasingly framed his integration of theology and science in terms of the metaphysics of Alfred North Whitehead and Charles Hartshorne . . . I cannot follow Barbour on his own theological commitments.”³⁹ He notes that he can accept various aspects of their thoughts, but he must reject the core doctrines. He instead opts for a hybrid metaphysics, claiming that

to the extent that I have employed a metaphysics, it is a modest, pluralistic, and underdeveloped one that combines these themes with a differentiated monistic view of creation that presupposes genuine emergence both “vertically” in existing natural structures and “horizontally” in the evolutionary history of life in the universe.⁴⁰

Those themes referenced in that statement are relationality, temporality, and God's experience of the world.

The second commonality between science and religion that Russell highlights arises from the use of models in both disciplines. He writes that “imagination plays a key role in the construction of models and theories.”⁴¹ It would seem that Russell has abductive reasoning in mind when he invokes imagination. The models form the structure of the belief system and predict certain features of experience that can be tested. The models are the fruit of the theological method in the way that theories are the outworking of the scientific method. Russell elaborates on the methodological point by summarizing Ian Barbour.⁴² Russell writes that

the disciplines of the sciences and the humanities, particularly theology, involve a pivotal analogy between their respective methods of theory construction and truth testing . . . Like scientific theories, Barbour views theological doctrines as working hypotheses held fallibly . . . constructed through metaphors that refer even if partially . . . and then through models that are sustained sets of metaphors. Doctrines, in turn, are tested in light of the data of theology, now including the

³⁹Russell, *Cosmology*, loc. 271.

⁴⁰Ibid.

⁴¹Russell, “Natural Sciences,” 329-30.

⁴²For more on Barbour's views, Russell suggests Ian G. Barbour, *Myths, Models, and Paradigms: A Comparative Study in Science and Religion* (New York: Harper and Row, 1974).

results of the sciences as well as such traditional sources as scripture, tradition, reason, and experience.⁴³

We can clearly see the methodological parallels already discussed, those ideas of hypothesizing including abduction and falsifiability, but the emphasis here is the idea of models as the culmination of the preceding steps. The models are examined with respect to science in addition to other sources of warrant, particularly experience. But again, one can see the subjectivity of theology arising as varying views of emphasis concerning scripture, tradition, and reason come into play.⁴⁴ Now that the commonalities between science and theology have been set forth, we can examine the fullness of the relationship between them through Russell's concept of Creative Mutual Interaction.

Creative Mutual Interaction

The idea of Creative Mutual Interaction (CMI) arose in large part due to Russell's adoption of Imre Lakatos' concept of a research program. He credits Nancey Murphy's dissertation, published as *Theology in the Age of Scientific Reasoning* as a pivotal work in his acceptance of this understanding. The significance of Lakatos' view is that scientific theories function as a wheel: in the center, there rests some central proposal or idea that is then surrounded by auxiliary hypotheses. Lakatos' novelty arises in that "he then delineated a set of criteria by which we can decide rationally whether a given scientific research program is progressive compared to its competitors. The key criterion is a research program's ability to predict 'novel facts' which are later corroborated."⁴⁵ The independent criteria for deciding the viability of a research plan provides another link between theology and science. What Murphy added for Russell was a modified definition

⁴³Robert John Russell, *Time in Eternity: Pannenberg, Physics, and Eschatology in Creative Mutual Interaction* (Notre Dame, IN: University of Notre Dame Press, 2012), 72.

⁴⁴Russell does believe that theology has some objective aspects, such as biblical/higher criticism. (Robert Russell, e-mail message to the author, March 26, 2015). In the discipline of biblical/higher criticism one takes the Bible on par with any secular, historical work. In that way, one seeks to offer an objective analysis of the Bible.

⁴⁵Russell, *Cosmology*, loc. 398.

of novelty that could be applied to theology. That modification was to define a novel fact as one that is not utilized in the construction of the core theory and is some time later documented, that is, after the proposal of the core theory. Russell relies heavily upon this modified definition, claiming that “with this methodology it would be possible to decide between competing theological research programs using criteria which transcend the programs themselves.”⁴⁶ This understanding of research programs supplies a necessary foundation for Russell's CMI.

Another aspect of Lakatos' thought that Russell has used to formulate CMI is the notion of metaphor. Philip Clayton has provided the framework for Russell's understanding of metaphor by identifying “explanation” as a transversal feature of science and theology. Russell explains that “in the natural sciences, where one interprets physical data, the truth of an explanation is pivotal. In the social sciences, however, where one interprets both physical data and the experience of actor-subjects ... explanation means 'understanding'.”⁴⁷ With this transition for explanation in the natural sciences to the social sciences in hand, Russell can now transplant that idea into theology. He explains that “theological explanations are subject to validation through intersubjective testability by the religious community. According to Clayton, the key is Lakatos' requirement that a previously specified set of criteria is held by the community by which competing explanatory hypotheses can be assessed.”⁴⁸ While this aspect of the development of CMI is more of an epistemological issue, that is, how to choose one belief amongst competing beliefs, I include it here because CMI is the core of how Russell relates science to theology. That relationship makes the most sense with respect to Russell's view of science as objectively fundamental, and his adoption of this

⁴⁶Ibid.

⁴⁷Ibid.

⁴⁸Ibid., loc. 407.

description will offer great insight into his ultimate choice of divine action theory. To which community's standards will Russell appeal when choosing among equally valid, and empirically equivalent theories of quantum mechanics?

Russell describes his concept of CMI as a synthesis of Arthur Peacocke's theory of epistemic emergence and Ian Barbour's methodological analogy between science and theology. Those two systems combine to form a dynamic framework that allows substantive dialogue between science and theology. Russell identifies eight paths that can be taken between the two disciplines: five flow from science to theology and three flow from theology to science.⁴⁹ The five science to theology pathways will be described first followed by the three theology to science pathways.

From Science to Theology

The pathways from science to theology are descriptions of how the data of science might be utilized by theology. Russell focuses upon theories in physics for reasons which will become clear in his understanding of epistemic reductionism.⁵⁰ The theories of physics will supply data directly or indirectly that theology can assimilate into its doctrines and models.

Path 1. Russell writes that “theories in physics can act directly as data that places constraints on theology. So, for example, a theological theory about divine action

⁴⁹Note that these paths concern the research programs of science and theology. As it has already been shown, these disciplines derive their theories/doctrines independently of each other initially. What is in view here is the metaphorical bridge, symbolized by the Golden Gate Bridge, that identifies common threads or inputs from one discipline to the other.

⁵⁰For an elementary understanding at this juncture, Russell believes that the various disciplines, from science to theology, form a hierarchy of epistemology as it relates to emergence. He wants to maintain that the disciplines studying more complex phenomena, the humanities, cannot be reduced to the disciplines that study the simplest phenomena, the natural sciences. Physics is at the bottom of this hierarchy while theology is at the top. The thrust of ‘simple’ in this context has to do with the study of the most fundamental aspects of reality, e.g., the fundamental particles. From there the hierarchy progresses to the more complex study of nuclei and atoms in Chemistry, then to the study of biological life in Biology, etc.

should not violate special relativity.”⁵¹ This pathway is representative of Russell's entire research program which argues that theology *must* take the input of science seriously; theology *must* incorporate the truths of science into its understanding. Thus, theology remains constrained by the natural sciences.

Path 2. The second pathway concerns science's recurring inability to explain its own findings on purely naturalistic terms. Russell describes pathway 2 by claiming that “theories can act directly as data either to be 'explained' by theology or as the basis for a theological constructive argument. Thus $t = 0$ in standard big bang cosmology was often explained theologically via *creatio ex nihilo*.”⁵² The significance of this statement is that theories are always underdetermined. When one considers Russell's understanding of the universe as contingent, one can see how many scientific data require interpretations that lay beyond science's boundaries.

Path 3. This path results in various philosophical interpretations of scientific data serving as evidence for theological claims. The idea is that the, “Theories in physics, after philosophical analysis, can act indirectly as data for theology. For example, an indeterministic interpretation of quantum mechanics can function within philosophical theology as making intelligible the idea of non-interventionist objective divine action.”⁵³ This pathway indicates that science can supply data to theology for understanding already existing theological understandings. From this end, the theological claim lacks enough evidence for itself so that science can indirectly supply what is needed. The reason the data indirectly supports theology is because it is more of an *available interpretation* of the data that assists theology as opposed to the data itself.

⁵¹Russell, *Time in Eternity*, 74.

⁵²Ibid.

⁵³Ibid.

Path 4. The fourth pathway speaks to an integration of theology and science into a broader, comprehensive philosophy. Russell believes that “theories in physics can also act indirectly as the data for theology when they are incorporated into a fully articulated philosophy of nature (e.g., that of Alfred North Whitehead).”⁵⁴ The emphasis here is on how theology can utilize the data that science offers to expound upon or better understand its own doctrines by their inclusion in a general metaphysics.

Path 5. The last pathway highlights a general inspiring feature of science for theology. Russell proposes that “theories in physics can function heuristically in the theological context of discovery, by providing conceptual or aesthetic inspiration, etc. So biological evolution may inspire a sense of God's immanence in nature.”⁵⁵ This pathway, more than the others, tangentially references the idea of general revelation. I say tangentially because I do not think that Russell wants to claim, here, that the theory proves God in some way, rather the theory functions as a token of stimulation and insight.

From Theology to Science

Path 1. Russell writes that “it is now abundantly clear that theological ideas based in the doctrine of creation *ex nihilo* provided some of the philosophical assumptions such as contingency and rationality that underlay and fed into the birth of scientific methodology.”⁵⁶ Russell relies upon the idea that a certain understanding of reality must be in place before one thinks that he or she would be able to describe that reality mathematically or scientifically. Theology can provide the necessary and sufficient assumptions for the scientific enterprise to launch.

⁵⁴Ibid.

⁵⁵Ibid.

⁵⁶Ibid.

Path 2. The second path from theology to science is the reverse of path 5 from science to theology. Just as scientific theories can offer inspiration to theological research, so too can theological doctrines offer inspiration to scientific research. Russell suggests that “theological theories can act as sources of inspiration in the scientific 'context to discovery,' that is, in the construction of new scientific theories. An interesting example is the subtle influence of atheism on Hoyle's search for a 'steady state' cosmology.”⁵⁷ Something outside of the scientific, naturalistic box serves as the driving influence for a particular scientific research program.

Path 3. This final path serves less as a driving force and more as a compatible truth to which one's science should relate. The theological doctrine does not bind the scientific theory, but indicates to someone with a firm enough belief in said doctrine, what truths the science should reveal, or better stated, which scientific theory is most likely correct among all competitors.⁵⁸ Russell describes the situation as, “Theological theories can lead to 'selection rules' within the criteria of theory choice in physics. For example, if one considers a theological theory as true, then one can delineate what conditions must obtain within physics for the possibility of its being true.”⁵⁹ On the one hand, this path could imply that a theological belief might cast the deciding vote for a particular theory if multiple, valid scientific theories are available. On the other hand, it could simply imply that a strongly held theological belief can influence a scientist's choice to study some particular theory. Russell hints at this latter idea a few pages later when he writes that “finally we can move along path 8 and suggest the construction of new scientific research programs whose motivation stems, in part, from theological

⁵⁷Ibid., 74-75.

⁵⁸Robert Russell, e-mail message to author, March 26, 2015.

⁵⁹Russell, *Time in Eternity*, 75.

interests.”⁶⁰ Thus, it would seem that Russell believes that theological interests can influence research programs as opposed to theological beliefs being a deciding factor in choosing whether to believe in some particular scientific theory.⁶¹

Interventionism

Interventionism, while a major disagreement between Russell and Plantinga, will not have much bearing upon this project. The reason that interventionism will not play a critical role in this dissertation is that Plantinga chooses a non-interventionist divine action path by interpreting quantum theory as ontologically indeterministic. Nevertheless, it would be disingenuous to not mention, albeit briefly, an issue so important to Russell. Moreover, perhaps the disagreement on this point between Russell and Plantinga shows Russell's passion for integrating science and theology whereas Plantinga seems less concerned on that front. Russell's project can be seen as one attempting to find a way forward regarding intellectual progression such that science and theology will both have positive inputs to the human knowledge base. Much of what Russell has said about Laplace, and what Plantinga will say about Laplace, revealed the logical outworking of divine interventionism. From the non-theistic side, the idea is that if a scientific explanation is exhaustive of some cause, that is, if the necessary and sufficient conditions for some phenomenon are clearly articulated by science and

⁶⁰Ibid., 83.

⁶¹But Russell's view may be even more subtle than that. Russell does let a theological belief influence his idea of cosmology. He writes, “We could say that the ‘freeze’ or ‘fry’ predictions for the cosmological future might have applied had God *not* acted at Easter and if God were *not* to continue to act to bring forth the ongoing eschatological transformation. But because God *did* act at Easter to raise Jesus from the dead, and because God promises to complete this action in the now-and-coming eschatological New Creation, the ‘freeze’ or ‘fry’ predictions based on science will *not* come to pass.” (Ibid., 78). But a few points must be highlighted here. First, the scientific constraints upon theological eschatology do not become void, rather the interpretations of the current scientific data are simply incorrect. Theology then points out that the science has not been completed yet. Second, the historical resurrection has often been classified as natural theology and evidentialist apologetics. Thus, the historical method is applied to the resurrection event as it would be applied to any event in history. In short, such a study of the resurrection is scientific so that it is not a purely theological claim that is binding upon scientific cosmology, but a science-theology hybrid belief that influences the predictions of eschatological cosmology.

supplied by the natural universe, then God has no role in the process. From the theistic side, if God intervenes randomly, at least from a human perspective, within nature, then the science-theology dialogue would come to a halt because there would be no clear demarcation for intervention. That very scenario seemed to appear with regard to God-of-the-gaps theology so that the demarcation became any epistemic gap within the scientific enterprise. The result was, and will continue to be if interventionism is not properly qualified, the ceasing of scientific experimentation and hypothesis. Rather than some superficial claim of theology as science-stopper, the claim is that God's intervention cannot be scientifically investigated because intervention, by definition, is the overriding, superseding, or violating of the scientific picture of the universe. Russell contrasts his noninterventionist, objective divine action to interventionism, writing that "this account of divine action does not rely on a gap in our current scientific knowledge but on the positive content of that knowledge."⁶² In that way, science and theology can have meaningful input into each other's sphere of study. To claim intervention would be to exclude science except in that science can merely recognize the contravening of nature's normal way of things. Russell concludes that understanding special providence in terms of intervention, "Threatens to undercut the conversation with science and minimize their credibility in a scientifically informed culture."⁶³ However, the interplay of science and theology is not Russell's only objection to interventionism.

Russell also has theological qualms with divine interventionism. He believes that God's consistency is in question since God would be breaking the very laws that God established. Christianity demands a God who acts consistently and rationally, though we may not possess enough information to understand that rationality. He describes this situation as putting general providence and special providence into competition with each

⁶²Russell, *Cosmology*, loc. 3821.

⁶³*Ibid.*, loc. 3790.

other.⁶⁴ But perhaps more than divine consistency, Russell is concerned that a viable theodicy becomes nearly impossible on interventionism. He writes that “both liberal and conservative options must still face the question of theodicy: What do we say about the pain, disease, suffering, and death which pervade the long history of life on earth?”⁶⁵ If God can intervene into history at will, then why does God not intervene more consistently to stop evils that do not seem to bring about faith or any other recognizable good? While this claim contains traces of the classical Epicurean or Humean problem of evil, it is more nuanced than that. Russell's concern is with the arbitrariness of action that would present itself for a God who claims repeatedly in Scripture to be opposed to the perishing of any and to take no pleasure in death. Russell believes that such a view demeans the God of the Bible.

Conclusion

Russell holds a critical realist view of nature. He believes that science does discover truths about the universe, truths that, as we will see in the epistemology chapter, must be taken seriously for the theologian in his or her search for God. But any truths, either scientific or theological, that one believes remain susceptible to defeat if those truths are falsified.⁶⁶ Every belief about the universe and God must be held tentatively, contingent upon future experimentation.

Science and theology have a dynamic relationship. While each discipline must discover isolated truths within its own sphere, as theories and models progress possibilities for interaction arise. Russell models that interaction by what he calls

⁶⁴Ibid.

⁶⁵Ibid.

⁶⁶Russell says that “I do not support a strict and wooden falsificationism (à la Popper) since Lakatos argues . . . that any scientific theory, even when challenged severely by anomalies in the data, can still rise up again by using new auxiliary hypotheses and doing so in a progressive way.” Robert Russell, e-mail message to author, March 26, 2015.

Creative Mutual Interaction. The data within the scientific enterprise can directly or indirectly supply constraints, inspiration, or evidence concerning theological belief. Theological theories, understood as doctrines, can provide inspiration, philosophical grounding, or selection guidelines amongst competing theories for scientific research. Presumably more than one of these possibilities can obtain.

With Russell's metaphysics in place, we can move to his concept of epistemology. To transition to that section, Russell's closing remarks about the eight pathways of CMI are worth quoting at length:

The *asymmetry* in the interaction between theology and science should now be quite apparent: theological theories do not act as data for science, placing constraints on which theories can be constructed in the way that scientific theories do for theology. This, again, reflects the prior assumption of epistemological emergence, namely that the natural sciences are structured in an epistemic hierarchy of constraints and irreducibility, and that this hierarchy then extends to the neurosciences and cognitive sciences, the social sciences, the psychological sciences, etc., and finally to the humanities including art and music, economics, jurisprudence, political science, and so on, and , finally, theology. It also safeguards science from any normative claims by theology or the other humanities.⁶⁷

That assumption of epistemological emergence grounds Russell's epistemology and will be the focus of the following section. It will also have a significant influence upon his choice of divine action theory.

Philosophy of Science: Plantinga

On first glance at some of Plantinga's work, one might be tempted to conclude that he holds a low view of science, particularly the use of science in the service of faith. Some of his work about the relationship between Reformed Epistemology and Natural Theology paint a dark portrait, at least initially, for the usefulness of natural theology. He describes Calvin, a primary figure in Plantinga's epistemology, as concluding that “the Christian doesn't *need* natural theology, either as the source of his confidence or to justify his belief. Furthermore, the Christian *ought* not to believe on the basis of argument; if he

⁶⁷Russell, *Time in Eternity*, 75.

does, his faith is likely to be unstable and wavering.”^{68,69} But like most of Plantinga's work, he operates at a deeper level than the philosophical outcomes, instead focusing on the philosophical presuppositions that give rise to those outcomes. Thus, he quickly proceeds to critique Classical Foundationalism as the true culprit of the Reformer's disdain. Plantinga reserves a role for natural theology on the noetic fringes of faith:

And even if such arguments are not needed for theistic belief to have warrant (even if they are not the sole source for warrant for theistic belief), it doesn't follow that they cannot play the role of *increasing* warrant and *significantly* increasing warrant . . . Perhaps my belief in God, while accepted in the basic way, isn't firm and unwavering . . . Then perhaps good theistic arguments could play the role of confirming and strengthening my belief in God, and in that way they might increase the degree of warrant belief in God has for me. Indeed, such arguments might increase the degree of warrant of that belief in such a way as to nudge it over the boundary separating knowledge from mere true belief; they might in some cases therefore serve something like the Thomistic project of transforming belief into knowledge.^{70,71}

Far from excluding natural theology from the noetic structure of a theist, Plantinga suggests that such arguments can play a vital role in increasing the degree of warrant with which theism is held. Since natural theology is grounded in the sciences, Plantinga reveals that he maintains a high view of and use for science in the service of faith.

⁶⁸Alvin Plantinga, “The Reformed Objection to Natural Theology,” *Proceedings of the American Catholic Philosophical Association* 54 (1980): 53.

⁶⁹Elsewhere in the same article, Plantinga is more explicit about his concurrence with some of Calvin's thinking. Planting argues that “a weak foundationalist could go on to say that *other* properly basic beliefs can't be known, if taken as basic, but only rationally believed; and he might think of the existence of God as a case in point. Calvin will have none of this; as he sees it, one needs no arguments to know that God exists. Among the central contentions of these Reformed thinkers, therefore, are the claims that belief in God is properly basic, and the view that one who takes belief in God as basic can also *know* that God exists. Now I enthusiastically concur with these contentions of Reformed epistemology.” *Ibid.*, 58.

⁷⁰Alvin Plantinga, “The Prospects for Natural Theology,” *Philosophical Perspectives* 5 (1991): 311-12.

⁷¹For this view to be meaningful, Plantinga must also maintain that there exist valid, if not sound, arguments for God's existence. And Plantinga does believe that such arguments are available, “Finally, I said above that natural theology may play these roles *if there are any good theistic arguments*. Are there? I think so; in fact I think there are *many* good theistic arguments. There are good arguments from the nature of sets, of propositions, of numbers, of properties, of counterfactual propositions. There are good arguments from the nature of knowledge, from the nature of proper function, from the confluence of proper function with reliability, from simplicity and from induction. There are good moral arguments; good arguments from the nature of evil; from play, enjoyment, love, nostalgia; and perhaps from colors and flavors.” *Ibid.*, 312.

Plantinga, as will be seen fully in his epistemology description, holds science in the highest regards. He takes God to be properly basic, or at least argues that God could be rationally taken as properly basic, and he maintains that modern scientific conceptions of reality are warranted. Consider his veneration of science as a pinnacle of human achievement:

We can therefore say a good bit by way of description of this human activity [science]; and it is an activity of impressive worth and value. It is of enormous practical worth, resulting in lengthened lifespans, relief from illness, increased comfort, and a better quality of life for many. (It has also given us the means to destroy ourselves and our environment.) But its benefits are by no means merely practical; modern science has also enabled us to learn much about ourselves and the world which God has created; it is hard to even conceive what intellectual life was like prior to the rise of science. In addition, parts of science – theoretical physics, for example – have austere splendid beauty and power; they represent magnificently impressive intellectual accomplishment; they resemble great poetry and great music; perhaps the most impressive intellectual accomplishment of humankind is, say, theoretical physics from Newton to the present.⁷²

On Plantinga's view, then, science has much to tell humanity about both itself and the material universe. If God is acting in this universe in a natural way, then modern scientific understandings ought to provide the means by which God does so.

The Scientific Enterprise

Plantinga wrestles with the purposes and goals of science throughout much of his writing. He revolts against an idea he understands as an unwarranted remnant of Enlightenment philosophy:

According to an idea widely popular since the Enlightenment, science (at least when properly pursued) is a cool, reasoned, wholly dispassionate attempt to figure out the truth about ourselves and the world, entirely independent of ideology, or moral convictions, or religious or theological commitments.⁷³

Plantinga rejects any notion that science proper can be completely removed from

⁷²Alvin Plantinga, "Methodological Naturalism? Part 2: Philosophical Analysis," *Origins and Design* (1997): 25, accessed August 11, 2014, https://www.calvin.edu/academic/philosophy/virtual_library/articles/plantinga_alvin/methodological_naturalism_part_2.pdf.

⁷³Alvin Plantinga, "Methodological Naturalism?" *Origins and Design* 18 (1997): 18, accessed August 11, 2014, http://www.calvin.edu/academic/philosophy/virtual_library/articles/plantinga/methodological_naturalism_part_1.pdf.

worldview considerations. He furthers that point, claiming that “it would be excessively naïve to think that contemporary science is religiously and theologically neutral. Perhaps *parts* of science are like that. The size and shape of the earth and its distance from the sun, the periodic table of the elements, the proof of the Pythagorean theorem.”⁷⁴ We learn many key points from these brief statements. First, Plantinga admits that parts of science, potentially vast parts if they could ever be identified, are such that their sole purpose is to supply information about the material universe. In Plantinga's worldview, this information is simply a description of God's ways, but the point remains that science does see *facts* about the universe. Second, many parts of science cannot be severed from religious or theological concerns so that those concerns will have some bearing on the science at hand. As such, Plantinga sees science more broadly connected with various disciplines than some would admit. Finally, it is worth noting that on this view of science's ultimate goal as description of the material universe, it cannot *prove* the non-existence of God. Thus, Plantinga will find no conflicts, at least no major conflicts, between science and faith.

Newtonian Mechanics

The clearest statements of Plantinga's most mature thoughts on the metaphysics of science come in his sections “The Old Picture” and “The New Picture” in *Where the Conflict Really Lies*. These sections are, at their core, a defense of God's intervention into the universe and how that intervention may be integrated with two broad, scientific views of the nature of reality. The synthesis of Plantinga's views of science with his concept of special divine action will be presented later in this work. For now, we want to understand how Plantinga understands the universe through the lenses of classical mechanics and quantum mechanics.

⁷⁴Ibid.

Plantinga follows the tradition in claiming that Newtonian mechanics resulted in a machine-like understanding of the universe: “This picture represents the world ... as a vast machine evolving or operating according to fixed laws: the laws of classical physics.”⁷⁵ In this description of Newtonian mechanics, one can still maintain the belief that God conserves and sustains the universe. These physical laws provide the needed regularity for daily living and proper functioning. Plantinga quickly adds a qualification against a common misunderstanding of Newtonian mechanics, claiming that “according to Newton and classical mechanics, natural laws describe how the world works *when, or provided that the world is a closed (isolated) system, subject to no outside causal influence.*”⁷⁶ Thus, God can still act in a special way on a Newtonian understanding by simply interpreting Newtonian mechanics as an open system.

A secondary, but closely related concept is that “it is no 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 claim isn't physics, but a theological or metaphysical add-on.”⁷⁷ Two points are worth highlighting in that statement. First, Plantinga hints that the scope of the so-called *hard sciences* remains limited to descriptions of nature rather than interpretations of nature. To begin interpreting descriptions of nature or to infer some metaphysical truth from a description of nature moves one from the realm of doing science alone to the realm of doing theology or metaphysics. Second, the idea that the universe is a closed system, which would render it inaccessible to supernatural influence is just one of those metaphysical claims in which science has gone too far afield in positing.

Plantinga applies an analytical approach to the common conception of natural

⁷⁵Alvin Plantinga, *Where the Conflict Really Lies* (New York: Oxford University Press, 2011), 76.

⁷⁶*Ibid.*, 76.

⁷⁷*Ibid.*, 78.

law. He paraphrases a definition given by John Mackie which assumes that natural laws are the regularities of nature until some *outside of the universe force* acts upon the universe. Thus, a natural law is a description of how the universe functions when the universe is causally closed. He goes on to show that on such a definition of natural laws, determinism is necessarily false. He deduces a contradiction in the system by illustrating that determinism implies that the conjunction of the natural laws with a certain state of the universe at a particular time will necessarily produce a specific state of the universe some time later which was entailed by the initial conditions. Now, Plantinga assumes determinism to be true and deduces the situation that “*necessarily, if a specific past state of the universe and the conjunction of the consequents of all natural laws obtains, then the actual future will obtain and necessarily, if a specific past state of the universe and the universe is not causally closed, then the actual future will obtain.*”⁷⁸ But the second position of the conjunct is clearly false. Plantinga concludes that “clearly there is a possible world that (i) shares its past with the actual world, (ii) is not causally closed ... and (iii) does not share its future with the actual world. Therefore determinism ... is false.”^{79,80} Plantinga further concludes that if non-contingent propositions are either necessarily true or necessarily false, then determinism is necessarily false. Thus, Plantinga rejects determinism on the classical Newtonian conception of the universe

⁷⁸Ibid., 82.

⁷⁹Ibid.

⁸⁰Plantinga’s argument is as follows: Let “L” be the conjunction of natural laws, let S(t) be the state of the universe at time t, let “U” be the universe is causally closed, let “PAST” be a specific past state of the universe, let “P” be the conjunction of the consequents of all the laws, and let “F” be the future. The assumption is determinism:

- (1) $(U \Rightarrow P) \& \text{PAST}$
- (2) $(2) \Box((U \Rightarrow P) \& \text{PAST}) \Rightarrow F$
- (3) $(3) \Box(((\neg U \vee P) \& \text{PAST}) \Rightarrow F)$
- (4) $(4) \Box((\text{PAST} \& P) \Rightarrow F) \& ((\text{PAST} \& \neg U) \Rightarrow F)$

Ibid., 92.

which can be seen in his closing statement that “what we've seen so far is that classical science doesn't entail either determinism or that the universe is in fact causally closed.”⁸¹

Laplace's addition. The reason for modern conceptions of Newtonian mechanics as necessarily deterministic and causally closed is because of a metaphysical addition most conspicuously typified by the mathematician Laplace. Laplace's famous quote is as follows:

We ought then to regard the present state of the universe as the effect of its previous state and as the cause of the one which is to follow. Given for one instant a mind which could comprehend all the forces by which nature is animated and the respective situation of the beings that compose it—a mind sufficiently vast to subject these data to analysis—it would embrace in the same formula the movements of the greatest bodies of the universe and those of the lightest atom; for it, nothing would be uncertain and the future, as past, would be present to its eyes.⁸²

Laplace clearly subscribed to an understanding of Newtonian mechanics that incorporated both determinism and causal closure. His view entailed that, given enough information concerning some state of the universe in the finite past, then, based on the regularities of natural laws functioning within the machine-like view of the universe, one could predict accurately the future state of the universe. Plantinga rejects Laplace's understanding of Newtonian mechanics because it is *an addition to* the propositions entailed by the system itself. He explains that the proposition of causal closure is a question beyond the capability of the system itself, “That the universe is indeed closed, once more, is not testified to by classical science nor a consequence of it.”⁸³ In sum, Laplace, and those who follow in his footsteps, add metaphysical assumptions to Newton's description of the universe that are unwarranted and necessarily, in the case of determinism, false.⁸⁴

⁸¹Ibid., 82.

⁸²Pierre-Simon Laplace, *A Philosophical Essay on Probabilities*, trans. F. W. Truscott and E. L. Emory (New York: Dover, 1951), 4.

⁸³Plantinga, *Where the Conflict Really Lies*, 84.

⁸⁴One think that Plantinga does not discuss, which perhaps he should, is the determinism

Quantum Mechanics

Plantinga would agree that classical Newtonian mechanics still applies to the physical universe on a macro scale when considering velocities far less than the speed of light. Nevertheless, he does maintain that quantum mechanics has supplanted Newtonian mechanics as the most fundamentally correct understanding of the universe. He writes that “as everyone knows . . . the old Laplacean (and Newtonian) scientific picture has been superseded—by two large-scale, indeed stunning revisions. First, there is relativity theory, both special and general; second, and crucial for our purposes, there is quantum mechanics.”⁸⁵ While Plantinga's purpose is to analyze whether quantum mechanics offers any conflict with divine action, we will use his description of quantum theory to inform our understanding of his view of the universe.

First, Plantinga does note that Newtonian mechanics, understood as the best description of the universe is outdated. He writes with respect to some theologians in the early and mid-1900's embracing of the Newtonian view of the universe that “there is a further irony: the classical science they so eagerly meant to accommodate was well out of date at the time they were eagerly accommodating it.”⁸⁶ Whether or not Newtonian mechanics is still used for some purpose does not negate the fact that its primacy as the most basic description of the universe has been superseded by quantum theory.

Plantinga focuses on the indeterministic character of quantum mechanics as beneficial to divine action theory. Instead of one outcome necessarily following in a closed system from some previous state of the universe, quantum mechanics entails that many outcomes are possible based on the probability distribution of the state of the

suggested by the mathematics modeling Newtonian mechanics. He claims that Newtonian can still be given an open, or indeterministic, interpretation but the mathematics modeling Newtonian mechanics is deterministic. Russell made this point when discussing the inherent statistical modeling of quantum theory versus the static modeling of Newtonian mechanics.

⁸⁵Plantinga, *Where the Conflict Really Lies*, 91.

⁸⁶Ibid.

system. Plantinga writes:

The Schrödinger equation for a system S —a system of particles, for example—associates a wavefunction with S ; in essence, for any future time t , the wavefunction assigns a complex number to each of the many configurations possible for S at t . This wavefunction is used (via “Born's Rule”) to assign a certain probability to each possible configuration c for S at t : the probability of finding S in c at t .⁸⁷

Plantinga believes that any of the probabilities associated with the state of the system are viable candidates for the outcome of the system, depending upon how the wave function collapses. He concludes that “the point, here, is that (in contrast with classical mechanics) we don't get a prediction of a unique configuration for the system at t , but only a distribution of probabilities across many possible outcomes.”⁸⁸ Plantinga indicates that since no prior state of the universe can necessitate some later effect, then the universe can be understood as ontologically indeterministic.

Methodological Naturalism

Plantinga does not believe that science entails naturalism. He writes that “and how is science supposed to support naturalism? Neither quantum mechanics nor general relativity has any connection with naturalism ... and the same goes for evolution.”⁸⁹ His point, of course, is that not only does science not demand naturalism, but that some aspects of science such as evolution have a deep conflict with naturalism.

A closely related objection to an integrated view of science and religion drives the point further. Plantinga paraphrases John Worrall's distinction between religious and scientific belief, writing that “according to Worrall, there is a profound contrast between what we might call the *epistemic styles* of religion and science. The scientist, says Worrall, holds her beliefs tentatively, dispassionately, only on the basis of evidence, and

⁸⁷Ibid., 92.

⁸⁸Ibid.

⁸⁹Ibid., 121.

is always looking for a better hypothesis, one that is better supported by the evidence.”⁹⁰ The religious believer does not function with the dispassionate aura of the scientist, rather the religious believer, “Typically holds his beliefs dogmatically: he is unwilling to consider the evidence and often holds his beliefs with a degree of firmness out of proportion to their support by the evidence; he is unwilling to look for a better hypothesis.”⁹¹ The consequence of Worrall's claim is that the scientist is objective and in accord with the empirical evidence while the religious adherent is subjective and ignorant of or opposed to the empirical evidence. Plantinga opens his critique of Worrall by using a discussion between Niels Bohr and Erwin Schrödinger, made known by Werner Heisenberg, where the two scientists display the utmost of passion within the context of a scientific discussion.⁹² He argues that just as in the case of determinism and causal closure being metaphysical additions to classical Newtonian mechanics, so too is the proposition that all our beliefs ought to be formed in a scientific way an epistemological addition to science. Plantinga asks us to take Worrall's distinction for granted and then argues that “that difference indicates a science/religion conflict only if *science* tells us that beliefs in all the areas of our epistemic life ought to be formed and held in the same way as scientific beliefs typically are. But of course that isn't a scientific claim at all; it is rather a normative epistemological claim, and a quixotic one at that.”⁹³ He goes on to cite what are generally thought to be properly basic beliefs as those not formed in a scientific way, beliefs such as elementary mathematical and logical beliefs, perceptive beliefs, the

⁹⁰Ibid., 122.

⁹¹Ibid.

⁹²The description from Heisenberg is as follows: “Bohr, who was otherwise most considerate and amiable in his dealings with people, now appeared to me almost as an unrelenting fanatic, who was not prepared to make a single concession to his discussion partner ... It will hardly be possible to convey the intensity of passion with which the discussions were concluded on both sides, or the deep-rooted convictions which one could perceive equally with Bohr and with Schrödinger in every spoken sentence.” Werner Heisenberg, *Physics and Beyond* (New York: Harper and Row, 1971), 73-76.

⁹³Plantinga, *Where the Conflict Really Lies*, 123.

denial of solipsism, that the past exists, that one's memory is true, that the external world exists, etc. What undergirds this all too common notion of the incompatibility between supernaturalism and science? Plantinga believes that methodological naturalism is the culprit.

Plantinga analyzes methodological naturalism by first stating that methodological naturalism does not seek to determine what *is* or *is not* to be considered ontologically existent. In other words, methodological naturalism is an epistemological concept rather than an ontological concept. Plantinga describes methodological naturalism as, “A proposed condition or constraint on proper science, or the proper practice of science, not a statement about the nature of the universe.”⁹⁴ He goes on to claim that “the idea is that in science we should proceed as if the supernatural is not given: in science, we can't properly appeal to God's creative activity, but we also can't appeal to angels or demons.”⁹⁵ Methodological naturalism is the idea that artificially constrains science to descriptions of the material universe, necessarily entailing that only the material world can be considered.

Some of the characteristics of methodological naturalism are that it requires data sets or data models that are derived from empirical evidence. Next, the theory proposed to explain the data will be external to the data but will not suppose any supernatural causes. Lastly, the evidence base of any scientific inquiry will include math, logic, relevant current science, common sense beliefs and propositions, and guidelines for proper scientific procedure.⁹⁶ If that is what methodological naturalism *is*, then why does Plantinga think that many scientists believe that they must presuppose it?

Plantinga gives three reasons often assumed for methodological naturalism

⁹⁴Ibid., 168.

⁹⁵Ibid., 170.

⁹⁶Ibid., 171.

with only Duhemian science garnering any warrant. First, some claim that any proper definition of science inherently requires methodological naturalism. He cites Michael Ruse as claiming that methodological naturalism is true by definition.⁹⁷ Plantinga finds three difficulties with maintaining that methodological naturalism is true by definition: the demarcation problem, the properties of science, and appeals to definition seem weak. The demarcation problem is the task of identifying the necessary and sufficient conditions required to distinguish science from various other human activities. Plantinga maintains that the task has failed and retains no hope for its ever succeeding:

This effort [demarcation] has apparently failed; but if in fact there *were* a definition of the sort Ruse is appealing to, then presumably there would be available a set of necessary and sufficient conditions for something's being science. Ruse doesn't address the many and (I think) successful arguments for the conclusion that there is no such set of necessary and sufficient conditions, let alone such a definition of the term 'science'.⁹⁸

Ruse functions as if the debate has been settled when the debate rests only because the search has thus far failed. Instead of Ruse appealing to some profound definition necessary for science's existence, he is really appealing to ignorance.

Second, the three properties of science that Ruse cites: repeatability, being merely natural, and being governed by natural law, seem to exclude many disciplines currently considered to be science. Plantinga cites Andrei Linde with respect to Big Bang Cosmology to show that it would have to be excluded on Ruse's notion of scientific properties, “According to Linde, the Big Bang is unique and therefore, presumably, unrepeatable—at any rate, it *might* turn out to be unrepeatable.”⁹⁹ Thus, one would

⁹⁷Plantinga cites Ruse's explanation of Scientific Creationism, “Furthermore, even if Scientific Creationism were totally successful in making its case as science, it would not yield a *scientific* explanation of origins. Rather, at most, it could prove that science shows that there can be no scientific explanation of origins. The Creationists believe that the world started miraculously. But miracles lie outside of science, which by definition deals only with the natural, the repeatable, that which is governed by law.” Plantinga, “Methodological Naturalism? Part 2,” 4.

⁹⁸Ibid., 2.

⁹⁹Ibid.

apparently have to reject Big Bang Cosmology as science because it is unrepeatable. But repeatability is not the only condition Plantinga considers faulty; he also questions the locution “governed by natural law.” The problem is that there exists no consensus amongst scientists and philosophers of science on what a natural law is or what “governed by natural law” might mean. Plantinga notes that Ban van Frassen argues that natural laws do not exist.¹⁰⁰ He goes on to argue that regularities are not laws and that in either case, this one or Ban van Frassen's, one would have to conclude that science does not exist if Ruse's definition is true. Lastly, Plantinga does not think that appeals to definition can settle a debate about methodological naturalism's necessity as science's driving principle. He writes that

one thinks this would work only if the original query were really a verbal question—a question like: *Is the English word 'science' properly applicable to a hypothesis that makes reference to God?* But that wasn't the question. The question is instead: *Could a hypothesis that makes reference to God be part of science?* That question can't be answered just by citing a definition.¹⁰¹

Thus, Plantinga believes that no good arguments exist that show that methodological naturalism must be true by definition. But what about for the sake of functional integrity; does that argument lend warrant to methodological naturalism?

The idea of functional integrity has more to do with theology proper than with science, but the intersection of the two will benefit our analysis of Plantinga's science/faith integration. If God creates a universe of regularity, then directly acting in that world would seem to contradict, at least *de jure* contradict, God's perfect will and perfect creation. Why would God create physical regularities just to supersede them? First, he argues that whether or not God directly acts now, God must have directly acted at some point in the past, the time before there were any instruments for proctoring indirect causality. If so, then why limit God to just that action? Second, as Plantinga has

¹⁰⁰Ibid.

¹⁰¹Ibid., 3.

argued elsewhere, there exists no obvious reason why God must be excluded from scientific accounts. Plantinga offers an example from a possible psychological explanation: “Consider the truth that human beings have been created in the image of God, but have also fallen into sin. This dual truth might turn out to be very useful in giving psychological explanations of various phenomena.”¹⁰² We are simply not in an epistemic position, at least not from within the realm of science itself, to proclaim that explanations appealing to God are forbidden. Finally, some suggest that God is simply distinct from the created realm, that is, God is not a component of it, so that God cannot act in it. Plantinga points to God's direct conservation of reality as a necessary truth for even that view. Why then should one arbitrarily stop at direct conservation in consideration of God's actions?

Even though Plantinga critiques these views as if they were truly authentic, he believes that something else underlies these sorts of appeals to methodological naturalism. Plantinga believes that God-of-the-gaps arguments are the hidden fear of such thinkers, writing that “I suggest that there is a different and unspoken reason for this obeisance to methodological naturalism: *fear and loathing of God-of-the-gaps theology*.”¹⁰³ He describes this sort of theology as essentially positing God's action whenever an epistemic gap enters in the scientific description of the universe.¹⁰⁴ Plantinga readily rejects God-of-the-gaps theology as weak and damaging to the God revealed in the Bible, but he does not believe that utilizing God in scientific explanations

¹⁰²Plantinga, “Methodological Naturalism? Part 2,” 6.

¹⁰³Ibid., 7.

¹⁰⁴Plantinga's full explanation of God-of-the-gaps theology is as follows: “First, the world is a vast machine that is almost entirely self-sufficient; divine activity in nature is limited to those phenomena for which there is no scientific, i.e., mechanical and naturalistic explanation. Second, the existence of God is a kind of large-scale hypothesis postulated to explain what can't be explained otherwise, i.e., naturalistically. Third, there is the apologetic emphasis: the best or one of the best reasons for believing that there is such a person as God is the fact that there are phenomena that natural science cannot (so far) explain naturalistically.” Ibid., 4.

is a form of God-of-the-gaps theology. In his exposition of what serious theism thinks, we see a full integration of Plantinga's metaphysics and epistemology. He believes in the God described in the confessions above, but his epistemological understanding of God's existence and Scripture's authority as properly basic allow him to utilize God a scientific explanation. He writes metaphysically that

first and most important, according to serious theism, God is constantly, immediately, intimately and directly active in his creation: he constantly upholds it in existence and providentially governs it. Literally nothing happens without his upholding hand. Second, natural laws are not in any way independent of God, and are perhaps best thought of as regularities in the ways in which he treats the stuff he has made, or perhaps as counterfactuals of divine freedom.¹⁰⁵

He then writes epistemologically that

first, the thought that there is such a person as God is not, according to Christian theism, a hypothesis postulated to *explain* something or other, nor is the main reason for believing that there is such a person as God the fact that there are phenomena that elude the best efforts of current science. Rather, our knowledge of God comes by way of *general* revelation, which involves something like Aquinas's general knowledge of God or Calvin's *sensus divinitatis*, and also (and more importantly) by way of God's *special* revelation, in the Scriptures and through the church, of his plan for dealing with our fall into sin.¹⁰⁶

Most importantly, neither of these claims, the claim concerning who God is and the claims about how we know God, are precluded by science. Therefore, if Plantinga's concept of God's being and his concept of humans coming to know God hold, then there exists no reason, theologically, why God should not be understood as an interventionist God.

Plantinga then analyzes two stronger arguments for methodological naturalism: Duhemian Science (named for Pierre Duhem) and potential science stoppers. The former will be of import for this research.¹⁰⁷ Duhemian science seeks to remove metaphysical

¹⁰⁵Ibid., 8.

¹⁰⁶Ibid..

¹⁰⁷To explain science stoppers, Plantinga suggests that the creature has been made in some sense to learn about God through the universe God created. He then writes, "But there will be little advance along this front if, in answer to the question, 'Why does so and so work the way it does?' or 'What is the explanation of so and so?' we regularly and often reply 'Because God did it that way' or 'Because it pleased God that it should be like that'." There are several *different* ways in which Christianity might enter into the

assumptions from pursuits of science. Better stated, it seeks to remove non-universally agreed upon metaphysical assumptions from physical scientific disciplines in order to universalize the work of scientists. Plantinga concurs with the thrust of the idea but struggles to see how to draw the boundary lines for “universally agreed upon.” He writes about the Duhemian argument for the universality of science that

it is pragmatic, not principal: it is a good thing to do science together; we should therefore maximize the possibility of cooperation and cooperative inquiry wherever possible; therefore we should not propose, in science, theories essentially involving beliefs that are not common to us all.¹⁰⁸

The obvious problem with this view is that much of what we consider science would not meet this standard. Plantinga notes that hypotheses about God would be precluded, but so would hypotheses about metaphysical naturalism, cognitive science, and some aspects of evolutionary theory.

Plantinga does not see these constraints as a serious problem because they simply denote two modes of science: Duhemian science on the one hand, and what Plantinga calls Augustinian science on the other. Augustinian science would be science that *does* incorporate metaphysical assumptions into the evidence base. He notes that scientists like Herbert Simon think it important to begin with metaphysical naturalism and that a Cartesian and Aristotelian may want to explain phenomena in terms of an unobserved reality. He wonders about theists who want to use all they know about theism as a legitimate evidence base for their scientific explorations. Plantinga concludes that

it is important, to be sure, to see that science of this sort isn't *Duhemian* science and

texture of science: (1) stating and employing hypotheses according to which God does things directly, of course, but also (2) stating and employing hypotheses according to which he does something indirectly; further, there is (3) evaluating theories with respect to background information that includes Christian theism; still further, there is (4) employing such propositions as *human beings have been created in God's image*, either directly or as background, and (5) doing the same for such doctrines as original sin, which don't involve any direct mention of God at all, and (6) deciding what needs explanation by way referring to that same background.” (Ibid., 15-16). Thus, the argument that appeals to God would stunt or halt the advances of science would apply only to scenario (1). For that reason, the fear of appeals to God in science being science stoppers should not be a significant consideration when analyzing methodological naturalism.

¹⁰⁸Ibid., 12.

doesn't have the claim to universal assent enjoyed by the latter; but of course that is nothing against it. According to the fuller Duhemian picture, then, we would all work together on Duhemian science; but each of the groups involved—naturalists and theists, for example, but perhaps others as well—could then go on to incorporate Duhemian science into a fuller context that includes the metaphysical or religious principles specified to that group. Call this broader science 'Augustinian science'. Of course the motivation for doing this will vary enormously from area to area. Physics and chemistry and overwhelmingly Duhemian (of course the same might not be true for *philosophy* of physics); here perhaps Augustinian science would be for the most part otiose. The same goes for biological sciences. On the other hand, there are also non-Duhemian elements in the neighborhood, such as those declarations of certainty and the claims that evolutionary biology shows that human and other forms of life must be seen as a result of chance (and hence can't be thought of as designed). In the human sciences, however, vast stretches are clearly non-Duhemian; it is in these areas that Augustinian science would be most relevant and important.¹⁰⁹

The benefit of this stratification of science is that it reserves a place in science for the employment of metaphysical and religious assumptions within the evidence base without denying that certain assumptions are necessarily present in any case. Perhaps one would not appeal to those propositions when doing Duhemian science, but those propositions would be valid when doing non-Duhemian science. Secondly, engagement in Duhemian science does not involve analyzing whether the metaphysical assumptions not in use during its practice are true or false. Duhemian science would have little to say about the truth of theism, for example. Plantinga's final analysis of methodological naturalism is that “methodological naturalism, however, though widely accepted and indeed exalted, has little to be said for it ... the arguments for it seem weak indeed. We should therefore reject it, taken in its full generality. Perhaps we should join others in Duhemian science; but we should also pursue our own Augustinian science.”¹¹⁰ We now turn to a fuller description of what exactly Plantinga means by Augustinian science.

Augustinian Science

Plantinga promotes Augustinian science because, “Fundamentally, ... much of

¹⁰⁹Plantinga, “Methodological Naturalism? Part 2,” 14.

¹¹⁰Ibid., 17.

what goes on in the sciences is quite unsatisfactory, seriously flawed from the perspective of Christian theism. There are many examples, especially from psychology, sociology, sociobiology, political science, and other areas of the human sciences.”¹¹¹ Augustine’s “City of God” and “City of Man” represent, for Plantinga, a contest between theism, naturalism, and creative anti-realism. Since science is not neutral with respect to these claims, it means that Christians ought not accept all scientific statements as valid. Indeed, if the view proposed contradicts Christian theism, then the Christian theist ought to reject the view. Plantinga writes concerning the Christian community that it, “First, ... needs cultural criticism ... which is a matter of coming to a clear vision of the ways in which metaphysical naturalism ingresses into science. And second, the Christian community ought to think about the subject matter of the various sciences ... from an explicitly theistic or Christian point of view.”¹¹² One primary critique against this view is that it denies observation and consideration of the empirical evidence. Plantinga sees that critique as a gross misunderstanding of his claim since he argues that “the way to try to understand, from a theistic perspective, how God created plants and animals and human beings is to take account of all that you know: what you know by faith, what you know as a Christian, as well as what you know in other ways.”¹¹³ Thus, perceptual knowledge which is valid and grounded in Christian theism would be an eminently warranted way of producing scientific belief.

The significant feature to glean from Plantinga's philosophy of science is that science should not be held independently of one's other beliefs, particularly one's metaphysical beliefs. Surely he believes such a truth because nothing within the definitions of science necessitate denying one's metaphysical assumptions, broadly. But

¹¹¹Alvin Plantinga, “Science: Augustinian or Duhemian?” *Faith and Philosophy* 13 (1996): 369.

¹¹²Ibid.

¹¹³Ibid.

also within realm of possibility is the idea that the Christian ought not to give up what he or she knows to be true when considering scientific theories, evidence, and laws. What the Christian knows to be true is God's existence and the authority of the Bible. But why should metaphysical knowledge about God carry more weight for Plantinga than the seemingly clear evidence of the senses, or at least what scientists believe to be the clear evidence of the senses? Why should the Christian reject what scientists say on the basis of their expert opinion of the evidence if it contradicts one's Christian faith? What is Plantinga's basis for thinking that we can know anything about God at all?

He believes that questions of knowledge center upon a proper notion of warrant; warrant being that thing that when coupled with true belief results in knowledge. One of the fundamental mechanisms in warrant is having a proper design plan. Thus, Plantinga grounds his trust of the design plan which gives sufficient warrant in the very nature of God, who seeks for creatures to apprehend the Creator:

From a theistic point of view, human beings, like cathedrals and Boeing 747s, have been designed; we might say that they are divine artifacts. According to Jewish, Moslem, and Christian ways of looking at the matter, furthermore, God has created us human beings "in his own image"; in certain crucial and important respects, we resemble him. God is an actor, a creator, one who chooses certain ends and takes action to accomplish them. He is therefore a *practical* being. But God is also, crucially, an *intellectual* or *intellecting* being. He apprehends concepts, believes truths, has knowledge. In setting out to create human beings in his image, then, God set out to create *rational* creatures: creatures with reason or *ratio*; creatures that reflect his capacity to grasp concepts, entertain propositions, hold beliefs, envisage ends, and act to accomplish them. Furthermore, he proposed to create creatures who reflect his ability to hold *true* beliefs. He therefore created us with that astonishingly subtle and articulate battery of cognitive faculties and powers discussed in the previous chapters. From this perspective it is easy enough to say what it is for our faculties to be working properly; they are working properly when they are working in the way they were intended to work by the being who designed and created both them and us.¹¹⁴

But what grounds the whole enterprise of warrant and knowledge? Why is Plantinga *not* reasoning in a circle? To answer those questions we must understand Plantinga's

¹¹⁴Alvin Plantinga, *Warrant and Proper Function* (New York: Oxford University Press, 1993), 197.

emphasis on the necessity of proper function for warrant production.

Interventionism

Before proceeding, I must untangle some confusion that I created in the introduction to this dissertation. When I claimed that both Russell and Plantinga opt for non-interventionist divine action theories, I was using the paradigm offered by Russell which classifies any quantum theory of divine action as non-interventionist. Plantinga, however, has no problem with the idea of intervention, critiquing the very Divine Action Project of which Russell played a major part. Intervention, though Plantinga thinks the term nebulous in this context, conveys the idea of God acting directly in the universe as opposed to utilizing, exclusively, secondary causes. Plantinga's issues with intervention are that it remains extremely difficult to define "intervention" in any helpful way and that it remains immanently difficult to comprehend what "intervene" would even mean on a quantum mechanical model of the universe. I will present Plantinga's thoughts on intervention so as to represent his view most fully, but I will continue to operate on the Russell classification system of divine action.

Evil and intervention. Plantinga wonders whether anyone who talks of intervention by a divine influence knows exactly what they are tentative to claim. He settles on three issues affecting those rejecting divine intervention, at least those within the Divine Action Project. He cites the problem of evil, the problem of free will, and the problem of divine consistency. The problem of evil, in the context of divine intervention, arises because God sometimes intervenes to stop evil and sometimes does not intervene to stop evil. Should not an omnibenevolent deity who is also omnipotent and omniscience intervene to stop all evil? Plantinga quickly relocates the problem because, "Ellis speaks of the 'problem of allowing miraculous intervention.' But of course that isn't actually a

problem for us (or anyone else); it isn't up to us whether or not to allow miraculous intervention. God will intervene if and when he sees fit.”¹¹⁵ Very much like Plantinga's defense against the logical problem of evil, he claims that we are simply in no epistemological state to judge when or *that* God should act. God may very well have reasons beyond our comprehension to abstain from intervention in some cases of evil and not others.

Plantinga thinks that Ellis means something more like, “We can't *sensibly suppose* that God intervenes unless we have 'some kind of rock-solid criterion of choice underlying such decisions to act in a miraculous manner'—i.e., unless we have rock-solid criterion saying when God would intervene and when he wouldn't.”¹¹⁶ He continues his contention about our epistemological status towards God's choice to intervene by claiming that “God will intervene (if that's the right word) when he has a good reason for doing so; but why suppose we human beings would be in a position to know when he does and when he doesn't have a good reason?”¹¹⁷ His point, simply, is that not knowing when and why God might intervene does not entail holding the proposition that God never intervenes or that intervention in light of evil is a problem for the theist. Seeking a rock-solid criterion is beyond human capabilities and irrelevant to the question of whether it is reasonable to think that God intervenes.¹¹⁸

¹¹⁵Alvin Plantinga, “What is ‘Intervention?’” *Theology and Science* 6 (2008): 385.

¹¹⁶Ibid.

¹¹⁷Ibid.

¹¹⁸Plantinga's approach here can certainly answer any logical problem with intervention and evil from an analytic approach, but his argument does not ease any tension that arises from the gratuity, the quantity, and the quality of the evil that God chooses to allow. Plantinga's swift defense of any logical problems seriously threatens to turn dialogue into monologue regarding any subsidiary issues. The same critique will hold for Plantinga's special divine action theory. By choosing a quantum collapse theory that does not enjoy much support in the scientific community and his failure to seriously consider the scientific issues that accompany that theory runs the risk of alienating the scientific community from Plantinga's approach.

Intervention and free will. The second concern that Plantinga seeks to ameliorate is one that suggests that if God were to interfere with the material universe, then our free will would not be ensured. Much like the critique of evil and intervention, Plantinga does not agree that *knowing*, or at least believing, that God sometimes intervenes directly in the universe entails a loss of free will. He argues that what is needed for free will is, “That there be enough regularity for us to know or sensibly conjecture, at least for the most part with reasonably high probability, what will happen if we freely choose to take a given action.”¹¹⁹ After a brief thought exercise with Ric the climber deciding whether to go for the next hold and maintain his position, he asks us to consider what Ric should do when he does reach the top of the climb. Plantinga offers the following dilemma: “The fastest way down would be to jump; he's not tempted, though because he knows that a 150-foot fall would very likely kill or injure him. Now suppose he also believes that God occasionally intervenes, causing someone who takes such a fall to survive unhurt; that still won't tempt him to jump.”¹²⁰ Belief that God sometimes intervenes in the material universe does not entail that individuals cannot make free decisions.

Intervention and divine consistency. The final objection to intervention considered by Plantinga is that by suspending natural laws, overriding natural laws, or violating natural laws, God's nature becomes inconsistent, if not contradictory. Why would God create regularities and then violate them? Plantinga thinks that some who think this way, even though they embrace quantum theory, still adhere to the Laplacean picture of the universe. After stating that these individuals are aware of quantum mechanics, he writes, “Nevertheless, they still seem to display a list in the Laplacean

¹¹⁹Plantinga, “What is ‘Intervention?’” 386

¹²⁰Ibid.

direction: Clayton speaks of God's 'breaking' natural laws, and Saunders ... speaks of 'overriding' the laws of nature by performing miracles."¹²¹ The problem with these views, Plantinga argues, is that whatever miracle is in question will be a legitimate outcome of the set of statistical probabilities inherent in the state function. Even if the probability is very small, if it is possible, then how could God be "breaking" some natural law?

An arbitrary God? Plantinga then moves on the deeper reason for the objection: theological inconsistency in God's nature. Plantinga suggests that the problem is really a sort of arbitrariness that would arise within God's nature if God were to violate pre-established natural regularities. Much like the other two objections here considered, Plantinga does not believe the conclusion follows from the premise. Plantinga notes that "there would be arbitrariness and inconsistency only if there were no special reason for taking action contrary to the usual regularities; but of course God might very well have such reasons. This is obvious for the case of raising Jesus from the dead."¹²² Again, we may never know the reasons for God's acting in certain ways, outside of the general theme of manifesting glory, but we can still rationally maintain that God's direct intervention into nature contrary to the "normal" flow of things does not raise incontrovertible theological problems. Plantinga concludes that

many seem to think of God as like a classical artist, one who prizes economy, restraint, discipline. But perhaps God is more like a romantic artist; perhaps he revels in glorious variety, riotous creativity, overflowing fecundity, uproarious activity. Why else would he create a million species of beetles? Perhaps he is also very much a hands-on God, entering history regularly and often, time and time again, in order to lead, guide, persuade and redeem his people, bless them with the 'Internal Witness of the Holy Spirit' (Calvin) or 'The Internal Instigation of the Holy Spirit' (Aquinas) and confer upon them the gift of faith. None of this so much as begins to compromise his greatness and majesty, his august and unsurpassable character.¹²³

¹²¹Ibid., 387.

¹²²Ibid., 388.

¹²³Ibid.

Plantinga, obviously, finds no irregularity between divine intervention and God's nature, nor does he consider there to be any inconsistency between divine intervention and science.

CHAPTER 5

EPISTEMOLOGY

Each thinkers' epistemology is presented as it related most directly the sciences. Robert John Russell's epistemology lends itself to such a description because his research project is to have theology and science engage one another. Alvin Plantinga writes on epistemology more broadly, offering numerous critiques of varying systems and developing his own theory of warrant. Those ideas must be established before I can sufficiently apply Plantinga's epistemology to the sciences through his analysis of memory belief, testimonial belief, perceptual belief, induction, and epistemic probability. Thus, Plantinga's epistemology will require more pages than Russell's, though I am convinced that the depth of each description is equivalent.

Epistemology: Russell

Russell's epistemology can be understood from two vantage points. First, he believes that the warrant for theological beliefs is not derived from scientific truths. He does believe that there exists evidence for theological belief, but that the evidence valid for theological warrant is not scientific evidence.¹ Thus, on the one hand, Russell finds that theological beliefs, generally, are warranted. On the other hand, he goes on to argue that those theological beliefs, though warranted independently from the sciences are nevertheless constrained by the sciences. Russell borrows an epistemological hierarchy of

¹Russell elaborates on those sources of warrant, saying, "I use the Wesleyan quadrilateral: the sources are first, scripture, then tradition, then reason and experience. So scientific evidence does count, but as a subset of reason in general. For example, scientific reason excludes *telos*, but it doesn't mean that there is not purpose in nature, just that science can't detect it." Robert Russell, e-mail message to author, February 24, 2015.

disciplines based on the complexity of phenomena that they study from Arthur Peacocke and Ian Barbour. This hierarchy will be a key factor, more than Russell's understanding of warrant, in his choice of divine action theory.

Russell believes that theological beliefs are formed on the basis of evidences other than scientific evidence; thus, he rejects epistemological naturalism, or scientism as a foundational theory of truth.² Nevertheless, as seen in the previous chapter, Russell does believe that science must proceed under the banner of epistemological naturalism, or better stated, epistemological emergence which rejects the material reductionism of epistemological naturalism. Russell argues that theological beliefs within Christianity derive their warrant from foundations that “include the living encounter with God through worship, scripture, tradition and reason.”³ He goes on to suggest that these theological foundations, as well as those in science, are constantly in flux, but that theological beliefs are basic for the Christian. Another statement that shows Russell's belief in more sources of warrant than just science is when he claims that “my proposal is also not meant as an argument that God acts, which I *assume*—for theological (not scientific) reasons.”⁴ For Russell, the belief for that God acts is derived from sources outside of science, grounded in some distinct set of theological beliefs that are basic.

Russell further bolsters the claim that theological beliefs receive their warrant from sources other than science when he warns against what his theory of non-interventionist objective divine action (NIODA) *is* and *isn't* supposed to accomplish. He

²As indicated in the previous chapter, Russell does believe that epistemological naturalism, which is operational in methodological naturalism, is necessary for the progression and method of science. Such an epistemology must be assumed for something to be considered science on Russell's definition of science. However, this scientific assumption should not be read into reality as a whole; it is limited to science. Russell is not a metaphysical naturalist, nor is he an epistemological naturalist concerning beliefs outside of science's purview.

³Robert John Russell, “Cosmology from Alpha to Omega: Response to Reviews,” *Zygon* 45 (2010): 248.

⁴Robert John Russell, “Does ‘The God Who Acts’ Really Act? New Approaches to Divine Action in Light of Science,” *Theology Today* 54 (1997): 59.

explains that NIODA, “Does *not* 'explain how God acts' or even constitute an argument *that* God acts. Instead it assumes that warrants for the belief in divine action come from extended theological arguments whose sources lie elsewhere (including scripture, tradition, experience and reason).”⁵ Russell appeals here to what has been called the Wesleyan quadrilateral. Because of theological warrant being, in part, independent of science, some of Russell's theological beliefs will be properly basic for him. As we shall see momentarily, aspects of the sciences will nevertheless put constraints upon what is theologically valid.

Critical Realism

Russell subscribes to a correspondence theory of truth which is an aspect of the epistemological and methodological theory called Critical Realism which rests on a general correspondence theory.⁶ However, as one actually pursues beliefs, various epistemological methods may become necessary. He utilizes Barbour's understanding of Critical Realism in organizing his own thoughts. He describes the view as follows:

Like classical realism, the meaning of truth in critical realism is correspondence with reality (that is, reference) and the key criterion of truth is agreement of theory with data. But we often have only indirect evidence for our theories; moreover, networks of theories are tested together. Thus internal coherence and scope also serve as criteria of truth, as stressed by rationalists and philosophical idealists. Even this is insufficient when competing theories are equally coherent and comprehensive; hence fruitfulness serves as a fourth criterion of truth, as pragmatists, instrumentalists, and linguistic analysts stress. Thus intelligibility and explanatory power, not just observableness or predictive success, is a guide to the real.⁷

Russell does not intend to imply an epistemological ranking of competing theories, but

⁵Robert John Russell, “Divine Action and Quantum Mechanics: A Fresh Assessment,” in *philosophy, Science and Divine Action*, ed. F. LeRon Shults, Nancey Murphy, and Robert John Russell (Boston: Brill, 2009), 355.

⁶Again, even though Russell employs a kind of critical realist epistemology, he rejects the full metaphysical underpinnings of this view, at least insofar as Barbour followed the metaphysics of Alfred North Whitehead.

⁷Robert John Russell, *Cosmology: From Alpha to Omega* (Minneapolis: Fortress Press, 2008), Kindle, loc. 529.

what does manifest is a sort of logical prioritizing or a logical sequencing of various theories. If the empiricist can fully account for everything based on perception and induction (and perhaps deduction and abduction), then empiricism is enough. But when the perceptual data is insufficient, then rationalists with coherence theories and their kin must come to the empiricist's aid. When both empiricism and rationalism fail to fully account for the data, then pragmatism and its allies must supply their tests for truth. For Russell, the “real” is multifaceted and perhaps a single epistemological theory cannot possess the full truth.

Epistemic Reductionism

The most important aspect of Russell's epistemology as it relates to divine action theory is his rejection of epistemic reductionism in favor of epistemic emergence. He notes how crucial this understanding has been to his work, claiming that “epistemic holism has been the assumption behind my search for preconditions and prefigurations in biological evolution, physics, and cosmology for what emerges as fully articulated in humankind and which is described theologically in terms of the *imago dei* and sin.”⁸ The idea is that there exists a hierarchy of epistemic levels such that the lower levels apply constraints upon the upper levels while the upper levels possess unique properties that cannot be reduced completely to any lower level. Russell builds the system such that the disciplines studying the most complex phenomena are at the top of the hierarchy while those disciplines studying the most elementary phenomena are at the bottom of the hierarchy. Russell describes the system from bottom to top, writing that “the network starts with physics at the bottom level and works upwards through chemistry, biology, neurophysiology, psychology, linguistics, economics, to the arts, ethics, and theology.”⁹

⁸Ibid., loc. 263.

⁹Robert John Russell, “Natural Sciences,” in *The Blackwell Companion to Christian Spirituality*, ed. Arthur Holder (Malden, MA: Wiley-Blackwell, 2011), 330.

The humanities are located in the uppermost realms of the hierarchy as studying complex phenomena such as human interaction whereas physics and chemistry are located at the lowest levels, studying elementary particles and atoms.¹⁰ The consequences of this system will have far-reaching ramifications for Russell's divine action theory since his theory must accord with what the sciences reveal as truth for those lower level disciplines.

First we must account for what Russell means by epistemic emergence. Generally, emergence carries with it the idea that the whole exhibits some properties that are not present within the properties of the parts alone. For instance, water has the property of *wetness*, but neither hydrogen nor oxygen is considered to possess that property. Only when hydrogen and oxygen come together to form water will the property of *wetness* emerge. Russell's view is analogous to that example and he believes that it entails two claims: “1) Against reductionism the disciplines of the sciences and the humanities, including theology, can be placed in a series of epistemic levels that reflect the increasing complexity of the phenomena they study ... 2) Against a 'two worlds' approach it is argued that the lower-level disciplines place crucial restraints on the higher-level ones.”¹¹ Each of these positions will bear directly upon Russell's divine action theory.

The first claim means that the complexity of the concepts and referents of study within theology are irreducible to lower level simplicity. The thrust of “simplicity” and “complex” in this context has primarily to do with the metaphysical idea of composites. Something that is simple does not have composition while complexity arises as the number of parts increases. Thus, certain properties emerge as complexity develops

¹⁰This view does not maintain that physics applies *only* to the most fundamental aspects of reality. Indeed, physics applies to the universe as a whole.

¹¹Robert John Russell, *Time in Eternity: Pannenberg, Physics, and Eschatology in Creative Mutual Interaction* (Notre Dame, IN: University of Notre Dame Press, 2012), 71.

that are not properties of the constituents themselves.

The second claim binds the upper epistemic levels to not contradict the truths expounded on the lower levels. Russell explains that “for example, while physics, as the bottom level, places constraints on biology, the processes, properties, and laws of biology cannot be reduced without remainder to those of physics.”¹² So while the lower levels cannot fully explain the upper levels within themselves, they do establish a foundation with which the upper levels must agree. Russell writes elsewhere that “biology cannot contradict physics; instead, it presupposes physics, but it cannot be reduced to physics.”¹³ Such a claim has a drastic effect upon theology. Russell believes that “theology must take seriously and be affected by all the knowledge of the other disciplines, including the natural sciences, even while it deals with realities, such as divine grace and the *imago Dei*, that cannot be reduced to and explained away by these other disciplines.”¹⁴ Russell's warrant for these theological claims come from sources external to science, but these claims will be affected by the knowledge accumulated within the sciences.

This idea of scientific constraint cannot be understated because it will arise as a key difference between Russell and Plantinga in their divine action methodologies. Note, however, that this claim does not necessarily apply to the predictions of science, comprehensively. As shown above with respect to Russell's eschatological cosmology, theology, located at the highest epistemic level, does have an extraordinary input into cosmology. Russell argued that because the historical resurrection of Jesus is true, cosmology's predictions of a “freeze” or “fry” ending to our universe are necessarily false. So, even though theology influences a lower level with respect to scientific prediction, it would not do so with respect to fundamental, present descriptions.

¹²Ibid.

¹³Russell, “Natural Sciences,” 330.

¹⁴Ibid.

Moreover, it seems that an understanding of what the current scientific data present is in question rather than the data itself. In other words, when the historical resurrection is included in the evidence base, the predictions necessarily change. Note also that he does have evidence for his case, historical evidence, which is not purely theological. He writes, "I believe we have 'evidence' for this new act in the bodily resurrection of Jesus. In short we could say that the freeze-or-fry predictions for the cosmological future might have applied had God not acted in Easter and if God were not to continue to act to bring forth the ongoing eschatological transformation of the universe."¹⁵ Thus, scientific evidence, insofar as historical evidence can be considered scientific, does support the claim. The problem then is that the current cosmological predictions do not take account of this extra piece of data.

The question of precedence arises: do theological or scientific claims take precedence? At least in the case of predictive cosmology, as apparent in the previous paragraph, Russell rejects the current scientific predictions on the basis of his belief in the historical resurrection of Jesus and the New Testament claim of a future bodily resurrection into eternal life. Yet, Russell often makes claims like the following concerning non-interventionism, "If science claims that there is no complete set of natural causes for a quantum event, then we can argue that the addition of divine causality brings these events to completion without violating these laws or without being equivalent to a natural or secondary cause."¹⁶ Elsewhere, Russell says that "theology must incorporate science into its teaching."¹⁷ Thus, it would seem as if science has to set the boundaries for what theological propositions can claim whenever the two may

¹⁵Robert John Russell, "Cosmology," 249-50.

¹⁶Robert John Russell, "Religion and the Theories of Science: A Response to Barbour," *Zygon* 31 (1996): 38.

¹⁷Robert John Russell, "Evolution and Christian Faith: A Response to Cardinal Cristoph Schönborn," *America*, February 20, 2006, 13.

interact. When the two disciplines conflict regarding core data, the science demands a reinterpretation of the theology. This approach is evident when Russell claims that theology may need revision in light of science:

Our response presupposes a methodological commitment at the deepest levels of our research. We take theology as it engages with secular inquiry to be hypothetical in character, concerned to discover whether central commitments held by faith are in fact intelligible, consistent, and coherent with such inquiry.¹⁸

Thus, there will be times when scientific fact demands a revision of closely held theological beliefs. With that proposition in mind, it must be clearly stated that Russell holds many beliefs that he will not revise.¹⁹ The point of the section has been to show that Russell takes the findings of science seriously when doing his theology so that some aspects of theology may need revision in light of scientific fact. What will become clear throughout the remainder of this dissertation is that the set of those revisable beliefs for Russell is larger than Plantinga seems to allow.

Conclusion

In conclusion, Russell believes that theological beliefs possess extra-scientific warrant, that more than one epistemological theory may be needed to discern truth, and that the intellectual disciplines should be understood in terms of an epistemological hierarchy. The third point has a dramatic effect upon how one perceives theology and science since theology is located at the top of the hierarchy. The findings of the natural sciences at the lowest levels of the hierarchy put certain constraints upon beliefs in the higher epistemological levels. Thus, theology can derive its own beliefs, but those beliefs must be consistent with the agreed upon findings of the natural sciences. Theology may be able to influence research programs and future predictions derived from scientific

¹⁸Russell, "Does 'The God Who Acts'," 58.

¹⁹Russell comments that "if one is discussing something absolutely central to theology . . . we might claim that, for these cases, the sciences as we know them are inadequate to describe them. This I believe holds specifically in the case of the bodily Resurrection of Jesus and the coming eschatological New Creation." Robert Russell, e-mail message to the author, March 25, 2015.

understanding, but it cannot contradict the scientific truths at lower epistemological levels. While this approach certainly makes it possible for science and theology to progress together in an integrated way, it also means that if there exists scientific consensus for some theory, then that theory will carry tremendous weight within Russell's epistemology and it will be legitimate grounds for revising, or at least reinterpreting, some aspects of one's theology. Finally, by way of clarification, it is not the case that science determines theology for Russell. Indeed, Russell more than many of those in the field of divine action lets theology drive science.²⁰ The nuance significant for this dissertation is that Russell believes in a compatibility between the natural sciences and theology since the natural sciences describe the way that God goes about engaging the universe. Russell uses the image of the "eyes of faith" from the "biblical theology" of the 1950's to understand the ontological difference between special acts of God.²¹ The eyes of faith rather than the edicts of science reveal the objective, ontological difference in God's action. Thus, incorporating the findings of science into theology is simply a part of the comprehensive theological enterprise. Plantinga remains less concerned with coherence between science and theology in that the science will be correct insofar as it coheres with theological truth.

Epistemology: Plantinga

The bulk of the following description will originate from Plantinga's *Warrant* trilogy, particularly *Warrant and Proper Function*. Plantinga must be understood in context and as a whole. If one were to read certain works of Plantinga, one might think

²⁰Ian Barbour writes, "Russell agrees with many previous writers that science should influence the theological interpretation of nature and the reformulation of traditional religious beliefs in the light of established scientific theories. But he is one of the few authors who also hold that theology can legitimately influence several aspects of science: underlying philosophical assumptions about nature, the selection of problems to investigate, creative ideas for the construction of new theories, and perhaps even the choice among competing theories that are equally compatible with available data." Ian Barbour, foreword to *Cosmology: From Alpha to Omega*, by Robert John Russell, locs. 49-55.

²¹Russell, *Cosmology*, loc. 2548.

that he opposes the scientific enterprise. As was seen in his philosophy of science, he holds no sympathy for metaphysical naturalism, eschewing many of its so-called necessary doctrines, methodological naturalism in particular. One might think that the trend would continue when Plantinga turns his focus to epistemology. On the contrary, he has great admiration, respect, and a sense of wonder about the advances of modern science. What he rejects is that epistemological naturalism, sometimes called scientism in contemporary literature and understood as evidentialism (or positivism) in previous decades, should be extrapolated to represent the entirety of the set of rational beliefs. He holds science in high regard, but argues that limiting one's self to epistemological naturalism would result in the rejection of many beliefs which the majority of people maintain as rational and obvious. Thus, we must understand his project not as one seeking to destroy foundationalism as the correct epistemology, rather we should understand him as one seeking to restore the *proper* foundations of knowledge.

Plantinga's Epistemological Project

Plantinga characterizes his epistemological system as *naturalized epistemology*, seeking to incorporate the best that the sciences have to offer without giving up a legitimate basis for beliefs that the majority of people throughout history would consider incorrigible. What he desires, then, is to find a system that will properly account for the successes of science while allowing for verisimilitude regarding commonsense, perhaps privileged, beliefs. In order to accomplish that task, Plantinga needed to determine what knowledge actually is, or at least get an idea of what it is about knowledge that could incorporate both empiricist and rationalist beliefs. His conclusion was that he needed to develop a robust theory of warrant.²²

²²The focus here is on Plantinga's project as it relates to divine action theory. Much of his project can be properly described as answering all *de jure* objections to the Christian faith which would leave only *de facto* objections to the Christian faith, many of which he finds wanting. While that work has been a stalwart in my life and truly emboldened my faith, it does not fit the focus of this project since I am not seeking to defend the legitimacy of divine action proper. I am seeking to see what impact one's

Plantinga opens the first chapter of *Warrant: The Current Debate* by writing, “My topic is warrant: that, whatever precisely it is, which together with truth makes the difference between knowledge and mere true belief.”²³ Post Gettier, the epistemological landscape has sought to limit “lucky guesses” within one's epistemic web while continuing to utilize the fundamental concept of knowledge as “justified true belief.” Plantinga identifies a proper theory of warrant as the key piece in transforming mere justified true belief into knowledge. Much of his project has been to distinguish those foundational systems that can restrain the “lucky guesses” while maximizing the rationality with which one holds some belief. The resulting theory is as follows: “a belief has warrant, for a person, if it is produced by her cognitive faculties functioning properly in a congenial epistemic environment according to a design plan successfully aimed at the production of true or verisimilitudinous belief.”²⁴ So long as the system is in place: proper function, conducive epistemic environment, and design plan aimed at truth production, then one can enjoy a high enough degree of warrant to call one's true beliefs, knowledge.

Plantinga defends his theory of warrant on two fronts: first he shows the lack of explanatory scope in the prevailing epistemological systems, and second, he shows how his theory of warrant best accounts for widely agreed upon beliefs often considered to be knowledge. Aspects of both defenses are relevant for this study. As for the first, Plantinga's critique of classical Chisholmian internalism, his critique of coherentism, and his critique of evidentialism will possess direct ties to Plantinga's theory of divine action. I will highlight the various features in those sections that most closely tie to the nature of

epistemology has on one's final decision for the most appropriate divine action theory.

²³Alvin Plantinga, *Warrant: The Current Debate* (New York: Oxford University Press, 1993), 3.

²⁴Alvin Plantinga, *Warrant and Proper Function* (New York: Oxford University Press, 1993), 237.

science. From the second phase of Plantinga's defense of his theory of warrant, his analyses of memory, testimony, perception, induction, and epistemic probability will be useful in connecting his epistemology to his divine action theory.²⁵

Prevailing Systems and Science

I am focusing on classical Chisholmian internalism, evidentialism, and coherentism while foregoing all of the other systems Plantinga critiques because these three views make-up the multifaceted understanding of warrant as it relates to the sciences, which, in turn, will have the most bearing upon the use of quantum mechanics as modeling God's activity in the world. I will take the systems in the order: Chisholmian internalism, evidentialism, and then coherentism, because that order best simulates the nature of scientific investigation. First, one has particular duties or obligations to fulfill that will produce some amount of justification for a scientific theory: Chisholmian internalism.²⁶ Second, on the basis of evidence, both newly discovered evidence and existing evidence from previously accepted theories, one generates even more justification for a scientific theory: evidentialism. Finally, if one's theory is compatible with previously accepted truths, then one generates yet more justification for a scientific theory: coherentism. With some sufficient ratio of the justification from those three processes, a scientist may be able to claim warrant for some theory.

Chisholmian Internalism

First, by way of definition, it helps to know what Plantinga has in mind when he uses the term *internalism* in a general sense. He suggests that “the basic internalist

²⁵Plantinga's work on *a priori* knowledge may influence his divine action theory, but since much of a divine action theory is relating observed physical phenomena to concepts of God, we are most interested in his thoughts on *a posteriori* knowledge: his work on perception and induction.

²⁶The duties to which one adheres to with respect to the scientific method grant that one warrant for proposing a particular scientific theory. The theory would still not be warranted for the rest of the scientific community without further experimentation and review. Furthermore, the theory would not count as knowledge, at least on Plantinga's system, until it was shown that the belief was true.

idea, of course, is that what determines whether a belief is warranted for a person are factors or states in some sense internal to that person.²⁷ As opposed to seeking justification outside of one's own mind, one confers justification upon some belief by processes internal to the *knower*. The subject has a sort of privileged or special access to his or her own warrant. Countering the internalist view is the externalist view in which a belief receives warrant by, “*Being produced by a reliable belief-producing mechanism, or standing in a causal chain appropriately involving the subject of belief, or standing in probabilistic relation R to certain other relevant propositions.*”²⁸ Instead of some internal access available only to the subject, some *process* within the subject generates the true belief. The scientist has duties that must be met in order to conclude that some scientific theory is valid. Those duties are outlined in the scientific method, which ought to itself be understood as more akin to an external mechanism. But the scientist remains deontologically bound to justify his or her belief as it relates to the empirical evidence produced through the scientific method.

Internalist motifs. Plantinga begins his book *Warrant: The Current Debate* with a brief history of the epistemological conclusions drawn by Renee Descartes and John Locke. He summarizes their views through three motifs. Each of these motifs has some tie to classical Chisholmian internalism though I will cover only the first and second motifs here.²⁹

The first internalist motif puts the onus on the individual to justify one's own

²⁷Plantinga, *Warrant*, 5.

²⁸*Ibid.*, 6.

²⁹Plantinga describes the third motif as follows: “The justification-making property will have to attach to such states as my believing thus and so, my being appeared to in such and such a fashion, my aiming at a given state of affairs, my trying to do something or other, and the like” (*Ibid.*, 23). He defines that *justification-making property* as, “I cannot (if I suffer from no cognitive deficiency) nonculpably but mistakenly believe that a belief is justified or has the justification-making property” (*Ibid.*, 22). The point is that one has special access to just that thinking which makes a belief justified. This motif, less so than the others, influences one's view of scientific conclusions.

beliefs. It undergirds the deontological nature of classical internalism. Plantinga writes, “Epistemic justification (that is, subjective epistemic justification, being such that I am not blameworthy) is entirely up to me and within my power.”³⁰ Thus, justification is completely controlled by the individual. Such a claim does not mean that the beliefs produced will necessarily be true or even that they have a remote possibility of being true, rather such a claim secures justification for whatever the belief might be insofar as the individual has dispensed appropriate effort. When it comes to the question of which scientific theories one should adopt, one can see from this motif that strict adherence to the scientific method will be necessary to avoid culpability. The second motif will further that point.

The full deontological nature of classical internalism manifests in the second motif, which states that “for a large, important, and basic class of objective epistemic duties, objective and subjective duty coincide; what you objectively ought to do matches that which is such that if you don't do it, you are guilty and blameworthy.”³¹ In order to point the subjective justification generated by the first internalist motif at objectively justified beliefs, one has to fulfill certain duties and obligations. As stated, those duties and obligations are described in the accepted scientific method. Again, the beliefs are not necessarily true, but they are justified in the sense that they are seen as safe to be accepted as true.

How then does classical Chisholmian internalism relate to classical internalism? Plantinga proposes that the deontological nature of justification provides the connective tissue between the two emphases, “Reasonability, as Chisholm explains it, is a *normative* concept; more precisely it is *deontological*: it pertains to requirement, duty, or

³⁰Ibid., 19.

³¹Ibid., 20.

obligation.”³² One has a set of obligations that one must meet in order rationally to claim that some belief is justified. But it does not matter, for Plantinga, what those obligations may be because the problem with seeking warrant on the basis of duty is that it inevitably fails. Rather than being a question of which duties are best, the question is whether justification itself can yield warrant. Plantinga summarizes the problem well, writing that “what the classical Chisholm officially says is that warrant is a matter of a proposition’s being so related to a person that he can better fulfill his duty ... by accepting the proposition in question than by, for example, withholding it. But if this is what warrant is, then in a wide variety of cases ... Chisholm’s principles yield wholly wrong results.”^{33,34} Thus, he concludes that “no degree of dutifulness, no amount of living up to one’s obligations and satisfying one’s responsibilities—in a word, no degree of justification—can be sufficient for warrant.”³⁵ If justification alone is insufficient for warrant and if justification is dependent upon certain duties or obligations, then certain duties or obligations alone are insufficient for warrant. Because of this inconsistency, Chisholm later moves to what Plantinga calls post-classical Chisholmian internalism where warrant comes not from duties seeking truth or error, but from duties seeking reasonability or unreasonability.³⁶

Deontology and the scientific method. We must relate this notion of duties and obligations to the scientific method as it influences inquiries into God’s actions in the

³²Plantinga, *Warrant*, 32.

³³*Ibid.*, 43.

³⁴Plantinga analyzes the epistemic status of self-presenting beliefs and perceptive beliefs on Classical Chisholmian Internalism to show that there exists some incongruence between what the classical Chisholm states officially and how he works out his epistemic principles. In short, Plantinga argues that if warrant is what the classical Chisholm argues, officially, then all of his epistemic principles are false. *Ibid.*, 36-43.

³⁵*Ibid.*, 43.

³⁶*Ibid.*, 49.

material realm. A simple understanding of the scientific method is modeled by the hypothetico-deductive model: abduce some hypothesis about a problem or question, deduce predictions from that hypothesis that can be tested or falsified, and then inductively through experimentation attempt to disprove those predictions. If the predictions do not fail, then the theory can be adopted into one's basic noetic structure, and if the predictions fail, then one abduces some other hypothesis to better explain the phenomenon. Within each of those steps, there are rigorous protocols, generally defined within the discipline, about what counts as a valid result. On the basis of the classical Chisholm, one would be justified in some theory so long as one fulfilled those duties designated by the related discipline; this justification in turn, derived from the abduction and induction of empirical evidence, will result in warrant for some theory.

Plantinga does not want to reject the scientific method, rather he wants to relegate it to the realm of physical descriptions of material cause and effect. When one asks about the mechanism by which God physically acts, one introduces, in addition to scientific method protocols, other beliefs that could potentially be more basic than the duties and obligations demanded by the scientific method. As such, Plantinga will be willing to reject some scientific consensus derived from the scientific method if it conflicts with some more properly basic belief that also coheres, loosely, with the scientific method.

On a more philosophical level, Plantinga shows that perceptual knowledge cannot be appropriately accounted for on the schema of the classical Chisholm.³⁷ Science is predicated upon the warrant attained by perceptual knowledge. If that knowledge is

³⁷Plantinga's shortest example reads: "Suppose I form the belief all horses are white and form it in some epistemically culpable fashion. . . . Later I hear a horse whinny and form the belief that I am being appeared to in that fashion by a thing that is white. Then I am not properly fulfilling my duty forming the belief in question. Still, I satisfy the antecedent of P5a: I perceptually take there to be something that is white, and the proposition that I do so, we may suppose, is neither confirmed nor disconfirmed by the conjunction of propositions beyond reasonable doubt for me, so that it is epistemically in the clear for me." Ibid., 42.

obtained through the scientific method, resting upon its duties and justification alone, then one can never achieve warrant. Thus, one should never be confident in his or her perceptual knowledge. I do not mean to imply that one's perceptual knowledge is false; it would be incredible, which is the point of one of Plantinga's thought exercises, to deny the way in which one is *being appeared to*. The point here is that on an internalist view of deontological justification, and by extension beliefs produced solely on the basis of duties inherent to the scientific method, one cannot achieve any worthwhile amount of warrant for perceptual beliefs, whether they be true beliefs or not. In short, no set of rules is enough to provide warrant for a belief if the one following the rules is not functioning properly. In other words, one must be functioning properly according to some design plan aimed at truth production operating in a congenial epistemic environment in order to even know the rules and duties that one ought to follow.

Evidentialism

Perhaps no other view that Plantinga discusses can be more directly connected to the nature of scientific knowledge than evidentialism; it seems almost inherent to the scientific enterprise. Sometimes Plantinga's critiques of evidentialism are taken to mean that he does not have a high view of empirical evidence in the activity of truth-making which is then extrapolated to some notion of Plantinga completely rejecting foundationalism. His thoughts are more subtle than that; as stated, Plantinga wants to see proper foundations restored, to see evidentialism brought under an appropriate authority, and to see evidentialism applied to its proper ends.

This idea can be most clearly seen by tying the shortcomings of classical Chisholmian internalism to its potential use of inappropriate evidence. Plantinga argues that one can be doing his or her epistemic best in seeking to come to the truth of a matter, but may do so by accepting some belief on the basis of evidence wholly unrelated to the belief. He imagines that some malfunction in an individual's truth-producing mechanism

may result in that individual performing all necessary epistemic duties to maximal perfection while still coming to unwarranted beliefs on the basis of unrelated evidence.³⁸ If so, then appropriate evidence, in addition to whatever justification one receives through epistemic duties or epistemic obligations, will be necessary for warrant. He concludes that “clearly *warrant* requires that the ground in question really *be* evidence of one sort or another; but I can be *deontologically* justified, and *completely* justified, in believing on the basis of a ground that is in fact no evidence at all.”³⁹ The presumption then, is that where the evidence of the appropriate kind is gathered, and with all other aspects of Plantinga's epistemological model functioning properly, then one *would* have warrant. Evidence plays a pivotal role in the bolstering of warrant for Plantinga.

Evidentialism for warrant. Plantinga explicitly claims a prominent role for evidence in his epistemology, “The classical foundationalist insists that Perceptual beliefs, when properly formed, are formed on the basis of *evidence*. The Reidian can concur; but he adds that the evidence need not be *propositional* evidence.”⁴⁰ Even in qualifying that the evidence can be other than propositional evidence, Plantinga notes the necessity *of* evidence for warrant, at least for perceptual beliefs. But if there exists evidence of sorts other than propositional evidence, then how should one understand evidence's relation to warrant?⁴¹

Plantinga analyzes evidence as understood in the case of what he calls the 'AFC' view (based on the thought of William Alston, Richard Feldman, and Earl Conee).

³⁸His precise scenario is as follows: “Perhaps (by virtue of demon, tumor, or Alpha Centaurian) I believe that Feike can swim on the basis of the 'ground' that nine out of ten Frisians cannot swim and Feike is a Frisian; and perhaps I am maximally dutiful in the entire situation and have been all my life.” Plantinga, *Warrant*, 46.

³⁹*Ibid.*

⁴⁰Plantinga, *Warrant and Proper Function*, 185.

⁴¹Other types of evidence could include evidence on the basis of which or evidence in response to which (which Plantinga understands as evidence of the sort: *being appeared to*); testimonial evidence, evidence of the senses, etc. *Ibid.*, 185-86.

He defines the AFC view on their terms as: “Doxastic attitude *D* toward proposition *p* is epistemically justified for *S* at *t* if and only if having *D* toward *p* fits the evidence *S* has at *t*.”⁴² Notice that the “fit” portion of the evidence overcomes the failures of internalism. While this definition is strong, it is only strong for certain classes of evidence. Plantinga argues that this view of warrant works well for beliefs based on propositional evidence, testimonial evidence, and perceptual evidence, but fails to appropriately model many other sorts of beliefs that possess warrant due to their being taken in a basic way.

Memory belief does not gain warrant on the basis of evidence; Plantinga imagines that “you ask me whether I have ever visited the Great Barrier Reef; I reply that I have, and tell you about the giant clams . . . I saw while snorkeling there. I clearly remember visiting the reef; but what is my *evidence*? What plays the role here of propositional or testimonial evidence (or being appropriately appeared to)?”⁴³ His answer: nothing, or at least nothing like propositional evidence. He suggests that the images flashing through one's mind of the experience in question are more like a decoration which is evidentially irrelevant to the warrant associated with the memory belief. Whether one wants to claim a different phenomenology of memory or not, it will be difficult to present any sort of evidence which grounds memory analogous to propositional evidence, testimonial evidence, and perceptual evidence.

Likewise for *a priori* beliefs, one does not have a common notion of evidence supporting them. Plantinga pictures that “you consider or entertain an instance of *modus ponens*; there is a bit of imagery: perhaps you catch a fleeting glimpse of a sentence There is a sort of scrappy and indistinct, partial and vague image . . . of a sentence expressing the proposition, but surely this image is not *evidence*.”⁴⁴ Plantinga is not

⁴²Richard Feldman and Earl Conee, “Evidentialism,” *Philosophical Studies* 48 (1985): 15, cited in Plantinga, *Warrant and Proper Function*, 186.

⁴³Plantinga, *Warrant and Proper Function*, 188.

⁴⁴*Ibid.*, 188-89.

claiming that *no* evidence accompanies *a priori* beliefs, rather he is suggesting that whatever functions like evidence for *a priori* beliefs is radically different from perceptual, testimonial, and propositional evidence. Thus, the AFC view remains insufficient for generating warrant in the case of a large class of beliefs generally taken as enjoying high warrant.

Plantinga argues that proper function according to an appropriate design plan must be present in addition to the evidence: “In the case of memory and *a priori* belief, then, there is evidence all right—impulsional evidence—but no amount of this sort of evidence is sufficient for warrant: there must also be proper function. Obviously this also holds for perception, testimony, and the rest.”⁴⁵ As “evidence” of this statement, he imagines a scenario in which some perceptual equipment is malfunctioning which would preclude any warrant for a belief acquired in such a state. If someone who was in such a state were to achieve true belief, then it would be nothing more than mere justified true belief or a lucky guess. It could not count as knowledge because the belief would be unwarranted. Plantinga agrees with the evidentialist claim that evidence is needed for warrant but believes that the evidence alone is not enough:

The evidentialist is right: where there is warrant, there is evidence. Having this evidence, however, or having this evidence and forming belief on the basis of it, is not sufficient for warrant: proper function is also required. And given proper function, we also have evidence ... by the design plan; and that will be the evidence that confers warrant.⁴⁶

Clearly Plantinga maintains a high view of evidence that must be connected, necessarily, to warrant. But Plantinga believes that the evidence must be the sort that finds its genesis in proper function operating in accordance with an appropriate design plan, whatever sort of evidence the evidence may be. Much like the deontological nature of internalism, evidentialism on its own cannot suffice for warrant.

⁴⁵Ibid., 193.

⁴⁶Ibid.

Scientific evidence and warrant. In what ways does Plantinga's critique of evidentialism apply to the function of evidence in the scientific enterprise? Scientific evidence can be understood most broadly as evidence accumulated perceptually (empirical observations) and analyzed inductively within the parameters of the scientific method. What we want to know is how that sort of evidence becomes the basis for the warrant of some scientific theory? Plantinga would argue that it can only become warrant for some scientific theory if the individual gathering, systematizing, analyzing, and applying the evidence is functioning properly according to some appropriate design plan. Since Plantinga argues that evidence alone cannot be enough to generate warrant, then scientific evidence, however understood, cannot yield warrant for a scientific theory.

In one sense, this claim is wholly uncontroversial. Philosophers of science like Thomas Kuhn and Michael Polanyi, in addition to the general postmodernist critique of a culturally influenced scientific method, alerted the modernist West long ago of the shortcomings of logical positivism, the internal incoherence of scientism, and the theory-laden nature of the human condition. The significance of Plantinga's evidential claim comes not in its novelty but in its influence. What it means is that much more goes into determining whether some scientific theory has warrant than whether there is evidence for the theory. For Plantinga, that something more will be his view of God, more specifically, the view of God that is properly basic for someone functioning properly in an epistemically conducive environment according to a design plan successfully aimed at discovering truth. A scientific theory, for Plantinga, will enjoy more warrant if it fits the empirical evidence *and* fits his metaphysical conception of God. For those individuals who see scientific evidence as functioning in a vacuum of, metaphysical considerations will be of little concern.

On more of a foundationalist note, when one considers a scientific theory, more than mere scientific evidence facilitates its acceptance or rejection. In addition to cultural concerns, *a priori* beliefs will play some role since the theory must be logical,

memory beliefs will play some role since the theory will be assumed to *fit* with one's understanding of the universe as it stood yesterday, and testimonial beliefs will play a role since much of science is built on the work of previous generations. More than the theory being compatible with such beliefs, the very scientific evidence produced inductively will necessarily depend upon these sorts of beliefs. While testimonial beliefs can operate successfully on the AFC view, *a priori beliefs* and memory beliefs cannot. Therefore, scientific evidence is built upon beliefs more basic than itself, receiving warrant only insofar as its supporting beliefs possess warrant.

Coherentism

Coherence supplies another layer of justification to a scientific theory. Much in the way beliefs build on Plantinga's model from properly basic to basic to accepted on the basis of some more basic belief, a scientific theory should receive warrant if it coheres with other accepted scientific theories, more basic than itself, that have warrant. Obviously coherence is not the final say on warrant; simply consider the rise of quantum physics in the 20th century. Newtonian mechanics works wonders on a macroscopic level at subluminal speeds, but its rigid mechanisms breakdown when such barriers are breached. In a Kuhnian sense, for certain spheres of inquiry, the old paradigm had to be done away with. But we are discussing warrant here, that is, what rational individuals should count as knowledge. Certainly there will exist many warranted beliefs that are false, yet all true beliefs should be warranted, given proper evidence bases; and while all false beliefs are incoherent, presumably all true beliefs will cohere, eventually. And for our study, we want to know not whose theory of divine action is true (though it would be nice to know if either is true), rather we are investigating whether the divergence in divine action theory at the last moment reflects most heavily upon each thinkers' epistemology. Thus, we must know what Plantinga thinks about coherence in order to relate it to his choice of preferred scientific theory; ultimately, with which properly basic

beliefs will Plantinga be most interested in having his divine action theory cohere, those of science or those of theology?

Coherence and warrant. Plantinga goes through great pains to present the most charitable description of coherentism that can be presented. He wants to show that coherentism is a subset of foundationalism which maintains that coherence is the only source of warrant. The non-coherentist foundationist errs by thinking that the coherentist grounds warrant on the basis of warrant transfer. Plantinga first sets the foundationalist agenda by highlighting foundationalism's rejection of circular reasoning. He then goes on to show that the premier foundationalist claim against coherentism is that the hallmark of coherentism is circular reasoning. But Plantinga thinks that the foundationist misses the essence of the coherentist claim which is that beliefs are properly basic precisely because they cohere rather than that they circularly yield evidence (or warrant) for one another. The coherentist does not believe some proposition *A* on the basis of proposition *B* which is dependent upon proposition *A*. Instead, Plantinga asserts that

he [the coherentist] should not be seen as endorsing circular reasoning or making an implausible remark about the properties of the basis relation; he isn't really claiming that the *basis relation* is a source of warrant. Nor does he hold that the basis relation in a rational noetic structure can sometimes be circular. His suggestion, instead, is that coherence is the sole source of warrant. *He is instead pointing to a condition under which a belief is properly basic*—a condition under which a belief acquires warrant without being accepted on the evidential basis of other beliefs.⁴⁷

Thus, a belief gains warrant for the coherentist when that belief coheres with the basic set of beliefs in the coherentist's noetic structure.

Plantinga distinguishes between the pure coherentist and the impure (or mixed) coherentist. The pure coherentist is one who sees warrant as solely rising from coherence; warrant transmission is completely rejected. He notes that “deduction, induction, and abduction may indeed figure, in one way or another, as elements in the coherence

⁴⁷Plantinga, *Warrant*, 78.

relation, but warrant does not get transmitted by the basic relation from one proposition to another.”⁴⁸ The impure (or mixed) coherentist retains the idea that warrant transfer does occur. Coherence may still be the dominant source of warrant, but other aspects of warrant-producing mechanisms can be employed to transfer warrant from one belief to another. Plantinga concludes that because of impure coherentism, “The view that coherence alone is the source of warrant is compatible with the view that warrant is sometimes transmitted.”⁴⁹ The scientist would most likely fall into this impure (mixed) coherentism camp.

Even though coherentism can be a source of warrant, one should reject coherentism as the sole source of warrant. Plantinga does so on three levels: first, coherentism is a *doxastic* theory, second, coherentism is insufficient for warrant, and third, coherentism is unnecessary for warrant. Plantinga references Pollock for classifying coherentism as a *doxastic* theory. Beliefs in such a system get warrant only on the basis of its relations to other beliefs. Thus, one could accept any belief with the same amount of warrant regardless of differing circumstances so long as some singular belief is connected between them. That claim is tantamount to rejecting all other warrant-producing inputs.⁵⁰ Such a state of affairs would run upon contradiction quickly.

A more interesting discussion is that coherentism is neither sufficient nor necessary for warrant. Regarding sufficiency, Plantinga recounts four scenarios in which coherentism is obviously insufficient for warrant, though many more could be created. I offer the shortest scenario here:

Oliver Sacks recounts the case of the Lost Mariner, who suffered from Korsakov's syndrome, a profound and permanent devastation of memory caused by alcoholic destruction of the mammillary bodies of the brain. He completely forgot a thirty-

⁴⁸Ibid., 79.

⁴⁹Ibid.

⁵⁰Ibid., 80.

year stretch of his life, believing that he was 19 years old when in fact he was 49; he believed it was 1945 when in fact it was 1975. His beliefs (we may stipulate) were coherent; but many of them, due to this devastating pathology, had little or no warrant.⁵¹

The point, like all of Plantinga's thought exercises in the *Warrant* series, is to show that proper function in addition to the view in consideration, coherentism in this case, is needed for some belief to gain warrant.⁵²

Coherentism fares no better on the question of necessity. To demonstrate this flaw, Plantinga asks us to consider someone who has learned something false; the false belief is believed to be true by this individual. Then, in the course of life, this individual becomes aware of the actual truth. Since the person was taught falsely, but believed it as true, the actual true belief now faced will be incoherent with the rest of the person's noetic structure.⁵³ But surely a true belief received by *being appeared to thusly* or some *a priori* belief would be more basic for this individual than the learned false belief? As such, coherence is unnecessary for warrant.

A final discourse will serve well to highlight Plantinga's admiration for experience as evidence while also pointing to a flaw in coherentism. To this point, I have

⁵¹Oliver Sacks, *The Man Who Mistook His Wife for a Hat* (New York: Harper and Row, 1985), 23ff., cited in Plantinga, *Warrant*, 81.

⁵²My favorite scenario against coherentism is the following: "Timothy is a young artist from Firth, Nebraska, with an intense (indeed, pathologically inordinate) admiration of Picasso. Waiting at a supermarket checkout, he idly picks up a copy of the *National Enquirer*, reading therein that Picasso, contrary to what most of us have always thought, was really an alien from outer space. As a result of his overwhelming and diseased veneration of Picasso, Timothy forms the belief that he, too, is really an alien from outer space, having been deserted by his Alpha Centaurian parents on an exploratory field trip to Nebraska. The rest of his beliefs fall into a coherent pattern with this one. His belief that he is an alien from outer space, however, clearly has little or no warrant for him—and even if it happens, by some enormous coincidence, that in fact he is an alien, he certainly doesn't know that he is." See Plantinga, *Warrant*, 81.

⁵³The clearest example that Plantinga offers is as follows: "You are an eminent but idiosyncratic Oxford epistemologist; I am an unduly impressionable undergraduate. You offer me a battery of complex and subtly powerful arguments for the conclusion that no one is ever appeared to redly. I am unable to withstand the force of your argumentation and am utterly convinced. The next day I am walking along High Street, reflecting on the significance of what you have proved to me, when suddenly a great large double-deck red bus runs up on the sidewalk just behind me. I turn around in terror, see the bus, and am (violently) appeared to redly; since I have been reflecting about these matters, I notice (that is, believe) that I am thus appeared to. Unless my noetic structure undergoes instant metamorphosis (and we can stipulate that it does not), my belief that I am appeared to redly will be incoherent with my noetic structure; nevertheless it will have a considerable degree of warrant." *Ibid.*, 83.

only considered coherentism in terms of beliefs cohering with one another. Some coherentists attempt to make a move from beliefs-only coherence to experience-as-well coherence. If such a move succeeds, then perhaps a coherentist could overcome Plantinga's indictment of it as a *doxastic* system. Plantinga cites F. H. Bradley as making such a move but suggests that it inevitably conflates belief and experience. He writes concerning Bradley's view that "there is no real distinction between my *being* appeared to thus and so and my *judging* that I am appeared to thus and so; my being appeared to thus and so *is* my believing thus and so. But this seems clearly wrong."⁵⁴ One could properly say that the experiences, on Bradley's view, supervene upon the beliefs. Plantinga continues:

At *t* I see a large London bus bearing down on me as I try to cross the street; I form rather hasty and panic-stricken beliefs about the bus, but none about how I am appeared to. At *t + n*, after a quick sprint to the opposite side, I can perhaps remember how I was appeared to and, if of a sufficiently reflective turn of mind, may form beliefs about how I was then appeared to. But at *t*, when I am being thus appeared to, I need form no beliefs about it at all.⁵⁵

Plantinga's point is that there must remain some distinction between experiences and beliefs. Something other than the simple coherence of beliefs must be considered in order to receive warrant. That *other thing* in this scenario is the experience of the bus.

Coherence and science. A scientific theory is stronger, presumably, when it coheres with the noetic structure of the scientific catalog. Plantinga would not debate such a point, evident in his claiming that "a perceptual belief that doesn't fit with the rest of what I believe may be quite properly rejected."⁵⁶ So while coherence is not the only source, or even a sufficient feature, or even a necessary feature, of warrant, coherence is something that can bolster warrant. It can function as a reason to reject some belief as

⁵⁴Plantinga, *Warrant and Proper Function*, 181.

⁵⁵Ibid.

⁵⁶Plantinga, *Warrant*, 83.

unwarranted. Therefore, Plantinga sees no controversy when some scientists reject certain theories because they do not cohere with more basically accepted scientific theories or principles. What Plantinga rejects is that it should be considered a shortcoming of one's rationality if one accepts some theory that is incoherent with scientific consensus, but, for that individual, coheres with beliefs even more basic to him or her, beliefs that are even properly basic. Plantinga will make that very move when deciding which collapse theory to endorse, and he will justify that move because coherence, particularly with scientific conclusions, is neither sufficient nor necessary for warrant.

By way of brief summary, we have seen that Plantinga rejects three key aspects of the scientific enterprise as sufficient and necessary, either in themselves or in any combination, for warrant. He argued that no amount of duty fulfillment, no amount of evidence, and no amount of coherence can generate warrant. Each of these features plays a critical role in warrant, and will be present in varying degrees in warranted beliefs, but they each need some more fundamental support than themselves and each other; Plantinga believes that such support is found in proper function. What then is proper function? What is a design plan? How do either of those concepts get one to warranted beliefs? To answer those questions, we turn now to Plantinga's theory of warrant.

Plantinga on Warrant

It will be best to begin this section in the way the introduction of Plantinga's project ended, "A belief has warrant, for a person, if it is produced by her cognitive faculties functioning properly in a congenial epistemic environment according to a design plan successfully aimed at the production of true or verisimilitudinous belief."⁵⁷ By briefly expounding upon each feature of this definition, it will become obvious how

⁵⁷Plantinga, *Warrant and Proper Function*, 237.

Plantinga's understanding of warrant influences his conception of divine action. Also, having a firm understanding of the theory will aid in comprehension of how Plantinga applies this theory to beliefs related to his divine action methodology: memory, testimony, perception, induction, and epistemic probability.

Proper function. Plantinga recognizes that all epistemological failures have at least one thing in common: they cannot account for cognitive malfunction. For each epistemological theory that he investigates in *Warrant: The Current Debate*, he shows how scenarios are available that meet all the theory's criteria without yielding warranted belief, each failing to do so on the basis of cognitive malfunction. Such an exercise points to the reality that an epistemology is only as good as the epistemic, cognitive equipment that discovers warrant. Plantinga writes that

Chisholm's dutiful epistemic agent who, whenever he is appeared to redly, always believes that nothing is appearing redly to him, Pollock's cognizer who by virtue of malfunction has the wrong epistemic norms, the Coherent but Inflexible Climber, Dretske's epistemic agent whose belief that Spot emits ultraviolet radiation has been caused by the fact that Spot does indeed emit such radiation, Goldman's victim of the epistemically serendipitous lesion: all are such that their beliefs lack warrant for them.⁵⁸

All of these systems fail precisely because they do not account for the proper function of the individual's epistemic equipment.

What, then, is proper function? Proper function is simply the situation where ones cognitive equipment functions appropriately or does what it is supposed to do: “A belief has warrant for me only if the relevant parts of my noetic equipment—the parts involved in its formation and sustenance—are functioning properly.”⁵⁹ Plantinga does most of his explanation of proper function by highlighting different conceptions of it in different disciplines. It is a difficult concept to define abstractly, yet the concept itself is

⁵⁸Ibid., 4.

⁵⁹Ibid., 6.

pervasive in all disciplines. He discusses various medical conditions for which medicine or treatment are needed to put things back into working order, he notes broken bird wings as not allowing a bird to fly, he cites Fred Dretske's discussion about biological discovery of function as opposed to assigning of function, he cites David Baltimore's comments about how malfunctioning genes can cause biological disorders, and he notes how many scientists (biologists, psychologists, sociologists, and economists, to name a few) utilize proper function as they attempt to model work, purpose, and reactions to stimuli of humans and animals.⁶⁰ Whether or not a rigid definition can be given to proper function outside of a specific context, the notion is one that the majority of individuals recognize and utilize. But proper function must be understood as “proper” with respect to some plan.

Design plan. Plantinga correctly argues that proper function is not enough to yield warrant. One can concoct many cases in which one's cognitive equipment functions properly but there exists no warrant for the belief in question. One of Plantinga's suggestions will do to set the agenda: “William James's climber in the Alps, faced with a life or death situation, believed more strongly than the evidence warrants that he could leap the crevasse.”⁶¹ In this case, the climber's cognitive equipment is functioning properly, but the belief generated by that equipment is unwarranted. Proper function alone cannot account for wishful thinking or undue optimism because such scenarios produce false beliefs. Therefore, proper function is only as good as its design plan. By design plan, Plantinga means, “Something like a set of specifications for a well-formed, properly functioning human being—an extraordinarily complicated and highly articulated set of specifications.”⁶² These specifications are to be thought of as a blueprint for how

⁶⁰Ibid., 5-6.

⁶¹Plantinga, *Warrant and Proper Function*, 11.

⁶²Ibid., 14.

the truth-producing cognitive equipment of rational creatures ought to function, which Plantinga compares to specifications for automobiles. He considers both experience and the ability to form beliefs on the basis of other beliefs as crucial components of the design plan. Such an understanding of the broad components of a design plan will suffice for this work since divine action theory is the only belief in question.⁶³ But even with a design plan in hand and proper functioning cognitive equipment, one still lacks sufficient elements for warranted belief.

Congenial epistemic environment. Concerning a congenial epistemic environment, Plantinga has in mind a sort of harmony such that proper function according to some design plan must be in sync with whatever environment they are structured *for*. If they find themselves in some environment that doesn't match the design plan and for which proper function is out of phase, then one cannot achieve warrant. Plantinga offers a quick example and a longer example, both of which are edifying. As for the quick example, he writes that “your automobile might be in perfect working order, despite the fact that it will not run well at the top of Pike's Peak, or under water, or on the moon.”⁶⁴ For the longer example, Plantinga asks us to imagine that

you have just had your annual cognitive checkup at MIT; you pass with flying colors and are in splendid epistemic condition. Suddenly and without your knowledge you are transported to an environment wholly different from earth; you awake on a planet revolving around Alpha Centauri. There conditions are quite different; elephants, we may suppose, are invisible to human beings, but emit a sort of radiation unknown on earth, a sort of radiation that causes human beings to form the belief that a trumpet is sounding nearby. An Alpha Centaurian elephant wanders by; you are subjected to the radiation, and form the belief that a trumpet is sounding nearby. There is nothing wrong with your cognitive faculties; they are working quite properly; still, this belief has little by way of warrant for you.⁶⁵

From this thought exercise, we can readily see that proper function and design plan, on

⁶³Ibid., 21-47.

⁶⁴Ibid., 7.

⁶⁵Ibid., 6-7.

their own, are insufficient for warrant.

Plantinga shines the brightest light on the need for a congenial epistemic environment through an analysis of the Gettier examples. After discussing the original Gettier problem and some modified versions, Plantinga sets the stage for highlighting the shortcomings of proper function and appropriate design plan alone.⁶⁶ In all of the cases that he discusses, Plantinga shows that the majority opinion is that the individual did not possess warrant.⁶⁷ Why not? Plantinga's answer is that the epistemic environment was ignored, and that thought is worth quoting at length:

The basic idea is simple enough: a true belief is formed in these cases, all right, but not as a result of the proper function of the cognitive modules governed by the relevant parts of the design plan. The faculties involved are functioning properly, but there is still no warrant; and the reason has to do with the local cognitive environment in which the belief is formed. Consider the first example, the original *Smith owns a Ford or Brown is in Barcelona* example. Our design plan leads us to believe what we are told by others; there is what Thomas Reid calls “the Principle of Credulity,” a belief-forming process whereby for the most part we believe what our fellows tell us. Of course credulity is modified by experience; we learn to believe some people under some circumstances and disbelieve others under others. Still, credulity is part of our design plan. But it does not work well when our fellows lie to us or deceive us in some other manner, as in the case of Smith who lies about the Ford, or the Wisconsinites, who set out to deceive the city-slicker tourists.⁶⁸

Whatever design plan is active for guiding proper function, it has been designed to work in certain environments and not others. When the design plan is “out of place” one cannot attain warrant, even in the case of true beliefs. Proper function and an appropriate design

⁶⁶Plantinga presents the original Gettier problem as follows: “Smith comes into your office bragging about his new Ford, shows you the bill of sale and the title, takes you for a ride in it, and in general supplies you with a great deal of evidence for the proposition that he owns a Ford. Naturally enough you believe the proposition Smith owns a Ford. Acting on the maxim that it never hurts to believe an extra truth or two, you infer from the proposition its disjunction with Brown is in Barcelona (Brown is an acquaintance of yours about whose whereabouts you have no information). As luck would have it, Smith is lying (he does not own a Ford) but Brown, by happy coincidence, is indeed in Barcelona. So your belief Smith owns a Ford or Brown is in Barcelona is indeed both true and justified; but surely you can't properly be said to know it.” Plantinga, *Warrant and Proper Function*, 32.

⁶⁷Plantinga presents the modified Gettier problem by way of Carl Ginet. It proceeds as follows: “You are driving through southern Wisconsin, near Waupun. In an effort to make themselves look more prosperous, the inhabitants have erected a large number of fake barns or barn facades—three for every real barn. From the road, these facades are indistinguishable from real barns. You are unaware of this innocent deception; looking at what is in fact a real barn you form the belief now that's a fine barn! Again, the belief is true; you are justified in holding it; but it seems to many that it does not constitute knowledge.” *Ibid.*, 33.

⁶⁸*Ibid.*, 33-34.

plan must be operating in an environment conducive to their success, yet, those three components are still insufficient for producing warrant.

Aimed at truth. Plantinga appeals to the reliabilist model of truth production for the final piece of his warrant puzzle. The potential problem is that the design plan might be a bad one: one's cognitive equipment may be functioning properly in an epistemic environment conducive to that function, but the design plan be so terrible that no beliefs are ever warranted. Thus, all of the preceding features of Plantinga's epistemology must attach to the qualification: *aimed at producing truth*. Plantinga elaborates on the need for truth production, writing:

What must we add? That the design plan is a *good* one—more exactly, that the design governing the production of the belief in question is a good one; still more exactly, that the objective probability of a belief's being true, given that it is produced by cognitive faculties functioning in accord with the relevant module of the design plan, is high. Even more exactly, the module of the design plan governing its production must be such that it is objectively highly probable that a belief produced by cognitive faculties functioning properly according to that module (in a congenial environment) will be true or verisimilitudinous.⁶⁹

So long as truth production is the end goal of the design plan of the proper functioning cognitive equipment in an epistemically congenial environment, then one has strong grounds for claiming warranted beliefs. Now that the theory is in place, we can explore Plantinga's application of his theory to those properly basic beliefs that might influence his divine action theory most heavily.

Plantinga's Epistemology Applied

Plantinga applies his theory of warrant to a number of beliefs that the majority of people take as properly basic, with many of those belief-types being necessary presuppositions for the scientific enterprise to ensue. Of the properly basic belief-types that Plantinga discusses, those relating to this research are: memory beliefs, testimonial

⁶⁹Ibid., 17.

beliefs, perceptual beliefs, inductive beliefs, and epistemic probability. Each of these kinds of beliefs will influence Plantinga's conception of scientific truth because if there are beliefs more basic than those acquired by means of science, then scientific conclusions will not claim priority. Thus, whatever scientific truths Plantinga accepts will have to be compatible with some set of non-scientific, properly basic beliefs. Which collapse theory interpretation of quantum mechanics that Plantinga chooses will not only have to be built upon the scientific application of these belief-types, but it will also have to be built upon those beliefs more basic than the collapse theory itself and more basic than science proper. For Plantinga, that reality will mean rejecting a scientific consensus for the sake of something he takes to be more sure, the nature of God.

By highlighting these properly basic beliefs, I intend to show only that scientific conclusions, since they will be based upon these ideas, are not at the center of Plantinga's noetic structure, and that since belief in God is properly basic for Plantinga, that it does rest at the center of his noetic structure. I do not intend, however, to belabor a thorough description of Plantinga's analysis of these properly basic beliefs. In a sense, why Plantinga believes that these belief-types are properly basic is less important than *that* he believes it. Whether his reasons are justified or not will not influence the fact that these beliefs do, in fact, affect his approach to the sciences. Thus, I briefly mention some of the reasons for Plantinga's positions, focusing instead upon the effects of Plantinga's understanding of these properly basic beliefs on his scientific perspective. Each of the following basic beliefs are readily accounted for on Plantinga's theory of warrant whereas they would need to be rejected in many other systems and on epistemological naturalism broadened to non-scientific beliefs.

Memory. A scientific understanding of the universe cannot be realized in a vacuum. Many presuppositions must accompany the seemingly objective observations needed to progress *scientifically*. One of those presuppositions, or properly basic beliefs,

is that we can trust our memory beliefs. More than simply trusting what one wrote in his or her lab notebook on the previous day, memory beliefs play a critical role in the successes of science. First, however, what does Plantinga mean by memory?

He notes several features of what commonly passes as memory. The characteristics he lists are sensuous imagery, a sense of pastness, an aboutness with respect to the subject of the memory, something like a recognition that is indeed a memory, and the sense of the enduring self, or *I*, having the memory.⁷⁰ All of these notions integrate to form our memories but are not limited to propositional memory alone. Plantinga describes other sorts of memory, such as, memory of how to do something or memories of emotions and feelings.⁷¹ These sorts of memory beliefs do not require propositional justification for their warrant.

How then will Plantinga's description of memory relate to the fundamentals of scientific truth? Consider Plantinga's suggestion that our concept of the enduring self is so closely related to memory. In an analogous way, we take our understanding of the past, itself, to be just as enduring. The scientist must assume a uniform sort of nature about the past in order to make predictions about the future or to build upon previous discoveries about the universe. But how is that understanding of the past warranted? Plantinga agrees with Bertrand Russell that our commonsense perceptions may be deceived on this account:

Bertrand Russell is right: it surely is possible, in the broadly logical sense, that the world should have popped into existence five minutes ago, complete with all its apparent traces of the past—all its dusty books, decaying buildings, mature oaks, crumbling mountains, and apparent memories. This is possible; more, it is compatible with my present experience's being as in fact it is.⁷²

He then goes on to show that there are no arguments available based on perceptual

⁷⁰Plantinga, *Warrant and Proper Function*, 60.

⁷¹*Ibid.*

⁷²*Ibid.*, 62.

evidence of the present that can justify one's belief in an actual, greater than 5 minute past. His point is that if there exists no way to ground memory beliefs on other beliefs about present phenomena, then memory beliefs must be formed as basic. If memory beliefs are formed in a basic way, then they may have more impact on one's perception, better understood as interpretation of perception, of the present than present perception will have on one's memories. As such, Plantinga allows memory beliefs, beliefs about the testimony of the Holy Spirit in his life, for instance, guide his interpretation of present phenomena. For that reason, Plantinga will utilize his memories of God's nature, in addition to his present understanding of God, to guide which quantum collapse interpretation to select in order to best model God's action in the universe.

Testimony. Plantinga follows Reid's concept of testimony as credulity, highlighting various features of Reid's thoughts.⁷³ Plantinga notes that the dependence of the entire intellectual program relies heavily upon testimony. He sees that dependence as pervasive throughout all disciplines, claiming that “it is testimony and learning from others that makes possible intellectual achievement and culture; testimony is the very foundation of civilization.”⁷⁴ He then focuses on the progression of science arising from the European Enlightenment, writing that

the Enlightenment looked down its rationalistic nose at testimony and tradition, comparing them invidiously with science; but, without learning by testimony,

⁷³Plantinga quotes Reid at length: “The wise author of nature hath planted in the human mind a propensity to rely upon human testimony before we an give a reason for doing so. This, indeed, puts our judgment almost entirely in the power of those who are about us in the first period of life; but this is necessary both to our preservation and to our improvement. If children were so framed as to pay no regard to testimony or authority, they must, in the literal sense, perish for lack of knowledge. I believed by instinct whatever they [my “parents and tutors”] told me, long before I had the idea of a lie, or a thought of the possibility of their deceiving me. Afterwards, upon reflection, I found they had acted like fair and honest people, who wished me well. I found that, if I had not believed what they told me, before I could give a reason for my belief, I had to this day been little better than a changeling. And although this natural credulity hath sometimes occasioned my being imposed upon by deceivers, yet it hath been of infinite advantage to me upon the whole; therefore, I consider it as another good gift of Nature.” Thomas Reid, “Essay on the Intellectual Powers of Man,” in *Thomas Reid's Inquiry and Essays*, ed. R. Beanblossom and K. Lehrer (Indianapolis: Hackett, 1983), 281-82, cited in Plantinga, *Warrant*, 77.

⁷⁴Ibid.

clearly, science would be impossible. Newton stood on the shoulders of giants; indeed, every scientist must stand on the testimonial shoulders of others.⁷⁵

To require testimony for intellectual progression is no slight, rather it is normal. What Plantinga does here is to bring the perceived objectivity of science upon observations alone back to the morass of all other disciplines that more clearly depend upon testimony.⁷⁶

Testimony is rightly understood as a basic belief. Plantinga believes that “Reid is surely right in thinking that the beliefs we form by way of credulity or testimony are typically held in the basic way, not by way of inductive or abductive evidence from other things I believe.”⁷⁷ The significance of this point has major implications for this project because the testimony to which Plantinga attaches the most warrant will take precedence over other sorts of testimony. Thus, if he trusts most fully in the Bible and the inner testimony of the Holy Spirit, then beliefs will be formed upon the basis of *that* testimony. Religious testimony will more greatly influence other beliefs since they are an extension of what he takes to be properly basic as opposed to scientific testimony somehow altering his religious convictions.

Lastly, it must be understood that while Plantinga rigorously defends the

⁷⁵Ibid.

⁷⁶The most obvious reply to Plantinga’s suggestion here is to say that scientific testimony can always be independently verified which separates it from other types of testimony. Plantinga uses Freud as his archetype for this objection, “Sigmund Freud, that Enlightenment figure born out of due time, offers an account of *religious belief* that, oddly enough, includes testimony as a special case . . . He immediately goes on to contradict this account of ‘religious ideas’ by claiming that what distinguishes religious ideas from testimony is what you learn by way of testimony you can always check or verify for yourself, thus finding out whether what you were told is true . . . Can I really discover, in a way independent of testimony, that in the fifth century B.C. there was a war between the Athenians and Spartans? Can I discover in this way that Plato was a philosopher? OR that the woman I take to be my mother really was? OR that I was given the name I think I was?” (Ibid., 78). The objection will not hold because it over limits the class of testimony to very few propositions. But one wonders if Plantinga’s response is successful against the lowest rungs of Russell’s epistemic hierarchy, or whatever may eventually appear as the bottom rung of the hierarchy? While the interpretation of the scientific results may demand some subjective input, it would seem that the results themselves are rather objective. In that way, those results would seem to have more warrant, or maybe more claim to being considered knowledge, than much testimonial evidence. Some other argument would be needed to free certain theological claims from being constrained by the fundamental sciences.

⁷⁷Ibid., 79.

nature of testimony as evidence, he quickly notes that it is obviously not always the best evidence. As for the former, he writes that “if I get enough and strong enough testimonial evidence for a given fact—for example, that there was such a thing as the American Civil War, or that London, England, is larger than London, Ontario—the belief in question may have enough warrant to constitute knowledge.”⁷⁸ As for the latter, concerning the quality of testimony, Plantinga concludes that “testimonial evidence is indeed evidence; it is not always the evidence of choice.”⁷⁹ What he has in mind is that non-testimonial evidence of the sort that one sees something for oneself is cognitively more warranted than testimony. Thus, he conjectures that “I learn by way of testimony that first-order logic is complete, or that the continuum hypothesis is independent of ordinary set theory; I may thus come to know these things. I do even better, however, if I come to see these truths for myself.”⁸⁰ Plantinga then uses the example of getting testimony from an eyewitness versus getting evidence from someone whom the eyewitness has told about some event to show a sort of dwindling warrant. His point is not to belittle testimony, but to put testimony in its proper place as a basic sort of evidence.⁸¹

The point of discussing testimony was twofold. First, Plantinga's view of testimony as basic, as necessary for intellectual progression, and as equivalent (in some

⁷⁸Plantinga, *Warrant*, 82.

⁷⁹*Ibid.*, 88.

⁸⁰*Ibid.*, 87.

⁸¹Some tension in my current thesis about epistemology having a greater influence than metaphysics on divine action theory arises from the claim about religious testimony. Plantinga obviously gives as much weight to the testimony of the Bible and the inner witness of the Holy Spirit as he does to any other sort of testimony. For that reason, he will opt for the collapse theory of quantum mechanics that fits best with that testimony as opposed to following scientific consensus and tradition. But why does he give sacred testimony so much weight? The answer is because of his metaphysical beliefs about God's nature and God's work. The Bible can be trusted because its self-authentication nature is grounded in the faithfulness of the Father and the supervision of the Holy Spirit. And these truths might be the sort that one sees for himself or herself which is *better* than possessing such belief on the basis of testimony alone. However, the reason that Plantinga's metaphysical beliefs about God's nature and God's work bear such great influence for him is because, on his epistemological system, they are taken as properly basic. Thus, it is not so much the case that this metaphysics alone influences his choice, but that his metaphysics *taken as properly basic* influences his choice. And in that way, epistemology rests as the foundational justification of Plantinga's divine action theory.

sense) across disciplines, serves to show that scientific testimony is not the only, perhaps not even the most significant, sort of testimony that Plantinga considers when deriving a divine action theory. Second, if certain testimony is understood as properly basic for Plantinga, then that testimony will take precedence when filling out the rest of his noetic structure.

Perception. Perception, while being one of the most obvious sorts of beliefs, has many nuances that make it terribly difficult to articulate. In one sense, all perceptual beliefs must be understood as properly basic, or having warrant, so long as they come in the form: *it seems to me that I am being appeared to thusly*. Of course, coupled with that *being appeared to thusly* must be proper functioning epistemic equipment, for example, if the belief is to attain the status of knowledge.

A major question that arises for perceptual beliefs is whether they are formed basically or formed on the basis of other propositions. Plantinga believes that the solution lies somewhere in the middle of those two extremes. He concludes a hybrid basicity for them, writing that “perhaps the thing to say is that such judgments as *That tree is at least 100 feet* are partially basic; they aren't formed *solely* on the evidential basis of other beliefs, but are formed partly on the basis of present perception and partly on the basis of beliefs about what trees at least 100 feet tall look like.”⁸² Since Plantinga maintains that perceptual beliefs should be considered basic but that they are not fully formed that way, he must discuss how they are, in fact, formed. He writes that “my perceptual beliefs are not ordinarily formed on the basis of *propositions about* my experience; nonetheless they are formed on the basis of my experience.”⁸³ The evidence for such perceptual beliefs formed through experience is the evidence of the senses, assuming that the subject is

⁸²Plantinga, *Warrant*, 101.

⁸³*Ibid.*, 98.

functioning properly. But that sort of evidence alone is not enough to grant warrant on a perceptual belief; the individual must form the belief according to the design plan. The design plan is what gives one warranted belief that one is being appeared to in a certain way.

Plantinga's view of the quantum mechanics situation is that it seems to be knowledge, that is, a properly functioning individual operating according to a design plan aimed at producing truth in an environment congenial to truth will be warranted in adopting the principles of quantum mechanics. But, does such warrant also obtain for interpretations of the equations of quantum mechanics? For Plantinga, those interpretations would seem not to possess warrant. The significance we reap from this discussion is that the perceptual fact of quantum mechanical observations can be taken in a basic way but that the varying interpretations of quantum mechanical observations should not be taken in the basic way. Thus, Plantinga is free to incorporate other of his basic beliefs when interpreting the observations of quantum theory, particularly his basic beliefs about who God is and how God operates in the material universe.

Induction. Plantinga gives a brilliant defense of induction by grounding it in his theory of warrant. He discusses induction through two problems: the old riddle of induction and the new riddle of induction.⁸⁴ The old riddle of induction is the classic “Problem of Induction,” as articulated by Hume. Plantinga eventually narrows Hume's problem to, “Hume assumes without argument that if you don't have a deductively valid argument for the conclusion in question from propositions that indubitably report your own immediate experience, then that conclusion has no warrant for you and you have no reason to believe it.”⁸⁵ Plantinga simply does not see the problem that Hume sees. He

⁸⁴The nomenclature of the “Old Riddle of Induction” and the “New Riddle of Induction” comes from Nelson Goodman.

⁸⁵Plantinga, *Warrant and Proper Function*, 127.

argues that there is no apparent reason why one needs an argument to trust one's beliefs formed on the basis of induction. Even if such beliefs did not constitute knowledge, surely they would possess warrant. After showing that Hume's problem does not even obtain on a deontological justificatory basis, he shows that his current theory of warrant certainly thwarts the old riddle of induction because warrant is independent of deduction from indubitable propositions.

The new riddle of induction was propounded by Nelson Goodman. By using his example of “grue,” Goodman shows that induction suffers from a lack of basis for projection. Plantinga defines a projection as the inferring of properties from one sort of object or state of affairs to another, presumably at a later time.⁸⁶ Plantinga disagrees with Goodman's ultimate conclusions about the proper ground for such projections, concluding that his theory of proper function is what should ground such projections. Thus, the solution to the old riddle of induction is also the solution to the new riddle of induction. Plantinga writes that “both Goodman and Hume are wrong ... What makes it right to form belief in that inductive manner is just the fact that that is how a properly functioning human being forms beliefs; and what makes projectable properties projectable is just the fact that properly functioning human beings project them.”⁸⁷

Inductive beliefs possess great warrant for Plantinga which is why he holds scientific truth in such high regard. However, the very reason that inductive beliefs (or at least the inductive process) can be considered properly basic is the same reason a great many other beliefs can be considered properly basic. Inductive truths themselves, and those bearers of inductive truth, will not be considered more foundational for Plantinga than his view of God. Thus, inductive truths are to fit with his view of God rather than radically alter his view of God. If one inductive theory fits better with his view of God

⁸⁶For a full discussion of the new riddle of induction, see *Ibid.*, 128-135.

⁸⁷*Ibid.*, 136.

than some other inductive theory, then the former will hold more warrant than the latter.

Epistemic probability. Plantinga devotes two chapters in *Warrant and Proper Function* to epistemic probability. While the entirety of those chapters is both interesting and fruitful, an in-depth discussion of that content will take this project too far afield. What is significant to this thesis is how epistemic probability relates to warrant concerning scientific beliefs. Plantinga writes, “Recall first the connection between epistemic probability and warrant: where *A* is epistemically probable on *B*, *A* can acquire warrant for *S* by way of *S*'s believing *B* on the basis of *A*.”⁸⁸ Clearly then, when it comes to choosing an appropriate interpretation of quantum mechanics to function as a model of divine action, Plantinga will find the most appropriate interpretation to be the one that best fits with his theory of God. In other words, the theory that Plantinga eventually settles upon will be the one most epistemically probable given his view of God, which will, in this case, go against majority opinion.

Epistemic probability is a function of one's noetic structure. As information and beliefs accumulate, epistemic probability will vary. For that reason, it is no surprise that if the scientific community adopts a Copenhagen interpretation under the premises of methodological naturalism, then Plantinga might differ in opinion since he does not ignore any of his noetic structure when analyzing quantum theory. Thus, belief in the supernatural and belief in God are still active for Plantinga as he seeks to choose a particular divine action theory.

Conclusion

The purpose of this section has been to show Plantinga's understanding of warrant might influence his divine action theory. Because his epistemology is foundationalist, those beliefs further along the epistemic chain will receive their warrant

⁸⁸Ibid., 165.

only insofar as the basic beliefs upon which they are built have warrant. Another way to put it would be that belief becomes increasingly dependent upon prior beliefs as one moves outward on one's noetic structure. Each of the basic beliefs discussed has warrant because of the four-part epistemological theory of Plantinga. Since Plantinga's properly basic beliefs about God are of the same type as the basic beliefs that constitute the sciences, these theological properly basic beliefs will possess substantial influence when choosing scientific theories. Since Plantinga does not give inductive scientific knowledge priority over beliefs about God, and since it does not appear that he considers the interpretations of quantum theory to possess the same warrant as quantum theory itself, he will choose the quantum collapse theory that fits with his theological testimony. The most epistemically probable collapse theory in Plantinga's mind will be the one that accounts for the maximum number of his properly basic beliefs, including his concept of God, as well as rationally syncing with the rest of his noetic structure.

CHAPTER 6

SPECIAL DIVINE ACTION THEORY

This chapter articulates the special divine action theory of both Robert John Russell and Alvin Plantinga. Of singular importance is to demonstrate the moves that each thinker makes in order to arrive at quantum collapse theory as the premier locus of special divine action theory. If such a fact is demonstrated successfully, then it will become readily apparent how each thinkers' epistemology influences their final decision: Russell to the Copenhagen interpretation and Plantinga to the Ghirardi-Rimini-Weber theory.

Special Divine Action Theory: Russell

Russell maintains that God does not, by choice, intervene into nature by transgressing established regularities that God has already set in place, and that God's action must be objective as opposed to mere personal experience or subjective interpretation of ordinary events. Thus was born what he calls non-interventionist objective divine action (NIODA). A major percentage of his writing has discussed NIODA which he sees as most adequately located within quantum mechanics. This section describes NIODA theory, highlights the different perspectives of causal explanation, describes why quantum theory is the most promising NIODA candidate (QM-NIODA), presents Russell's defense of problems for QM-NIODA, and concludes with an example of his system at work in evolutionary theory.

NIODA

NIODA became a viable prospect with respect to the natural sciences only

after the Laplacean interpretation of Newtonian mechanics was abandoned. Once chance came to be understood as independent of prior conditions, a legitimate case for ontological indeterminism as fundamental to nature could be made. If the universe is ontologically open, then God can affect natural events without intervening, superseding, suspending, or violating natural processes. If some event occurs such that it remains underdetermined by preceding natural states, then God can be the culminating cause without introducing divine intervention.

Russell sets out a number of conditions necessary for NIODA to obtain. As stated previously, Russell views natural laws as descriptive rather than prescriptive. He is careful to claim, however, that he does not want to reject normativity completely. To hold the position that the regularities of nature cannot be applied to all classes of phenomena threatens to sever any dialogue science might have with theology.¹

Second, the universe must be ontologically indeterministic. Russell defines this idea with the claim that “there may not always be an efficient physical cause for every effect.”² The interpretation, which transitions to the realm of metaphysics, only holds if it can incorporate the best available, agreed upon scientific theories and scientific laws.

Third, Russell wants to maintain a distinction between subjective acts of God and objective acts of God. Russell explains that God acts objectively when events are brought about differently than ordinary events, “Put in counterfactual terms, events are considered the effect of an 'objective act of God' if they would not have occurred had only the ordinary processes of nature, that is God's ordinary action, had been at work.”³ God does something other than a mere sustaining of the regularities of nature. Russell then goes on to highlight the nature of subjectivity. He claims that subjectivity occurs

¹Robert John Russell, *Cosmology: From Alpha to Omega* (Minneapolis: Fortress Press, 2008), Kindle, locs. 2154-64.

²Ibid., loc. 2164.

³Ibid., loc. 2181.

when God acts equally in all events but that particular individuals or communities may ascribe special meaning to the event. Russell uses an example of a solar eclipse as a subjective divine event. He argues that many may see God's creative beauty in the event, but scientifically, all that has happened is that two ocular objects have been juxtaposed.⁴ Thus, subjective meaning is a subject relative idea which will not be evident to all parties.

Objective events are independent of the individual's interpretation since the event is an extraordinary one brought about by God. Russell suggests that some medical healings or sudden inspirations may fall into this category. He is careful to note that the individual may attach particular meaning to the event, but that the objectivity comes from the divine perspective. Russell makes the point that “we might be wrong in calling them an objective act of God but we are not wrong in employing the category of objective divine action to claim theologically that God can act in extraordinary ways in the world.”⁵ Russell concludes the discussion of objectivity by noting that NIODA does not include miraculous divine action.⁶

The final two categories of action in need of clarification are direct/indirect acts and the mediated/immediate divine action. Both of these distinctions will play a critical role in Russell's choice of scientific theory for NIODA. Direct and indirect acts

⁴For the extended example of subjective action, Russell writes, “A nice example of an event in nature viewed subjectively as a divine act involves a typically religious response to the drama of a solar eclipse. At the moment of the eclipse, as the 'diamond ring' takes place, observers gasp in awe and wonder at the extraordinary beauty of the eclipse and the way this beauty points in extraordinary ways to God as the Creator of the world. Still no one assumes that anything out of the ordinary has happened in terms of astrophysics: Two objects with the same ocular diameter have been juxtaposed by their motion which is entirely predictable according to classical physics. According to the liberal view the eclipse happened without God acting in other than God's usual way of upholding the regularities of nature. The beauty of the solar eclipse and its religious significance are truly 'in the eye of the beholder' and not in the event itself.” Russell, *Cosmology*, locs. 2181-2190.

⁵Ibid., loc. 2190.

⁶Russell does not at all rule out miracles. He writes that “I tend to use several understandings of miracle. I agree . . . in understanding a miracle as the exhibiting of an extraordinary power of a creature, I also like Thomas's three fold notion of a miracle, including that God does something secondary causes could have done on their own, and I respect the impact of Hume's definition of miracle as a breaking of a law of nature or an intervention by God into the regular flow of nature. The 'intervention' option in both deterministic and indeterministic cases is understood as a miracle.” Robert Russell, e-mail message to author, March 30, 2015.

should be understood as they generally are in philosophy: direct acts preclude any prior acts on which they are dependent while indirect acts require some beginning act to initiate the causal sequence. Mediated and immediate acts are more nuanced when divine action is in question. Russell suggests that mediated acts occur when, “God acts in, with, and through the existing processes of nature without thereby becoming a secondary, or natural, cause.”⁷ This conception of mediated action makes God more than another efficient cause akin to a natural process. God uses nature as an instrument which keeps God from becoming a secondary cause. Russell then explains that immediate action occurs when, “God's action of creation *ex nihilo* which accounts for the ontological existence of the world as a whole and for the existence of the world at every moment of time.”⁸ Russell elaborates upon this idea by claiming that God only acted once through unmediated action: the creation of the spatio-temporal universe. Russell explains that “all events in the world excepting an absolute beginning of time, $t=0$ (if there is such an event), are also the result of God's mediated action, that is God's action mediated in, with, together, and through, the causal processes of nature.”⁹ Thus, all actions after the universe is created become mediated actions because God acts within the material universe by using the material universe. With these distinctions and definitions in place, we can now state the criteria by which candidates for NIODA should be judged.

For a scientific theory to be a viable candidate for NIODA, it must be such that “*the events that result from God's action must occur within a domain of nature in which the appropriate scientific theory can be interpreted philosophically in terms of ontological indeterminism. The events must be considered as direct, mediated, and objective acts of God.*”¹⁰ Russell believes that quantum mechanics is the most likely

⁷Russell, *Cosmology*, loc. 2190.

⁸Ibid., loc. 2200.

⁹Ibid., loc. 2209.

¹⁰Ibid., loc. 2243.

theory for fitting the criteria of NIODA.

Explanatory perspective. By explanatory perspective, I intend to highlight the fundamental starting point and subsequent causal direction of explaining divine action. There are, according to Russell, four types of direction that causality can proceed: top-down, whole-part, lateral, and bottom-up. These types of causality can be taken in isolation or integrated into a more complex causality.

Top-down causation indicates that the locus of God's action occurs at the most complex levels of the natural universe. Just as the higher epistemic levels within Russell's epistemic hierarchy cannot be reduced down to more fundamental elements, so too is it the case that top-down causation cannot be reduced to elementary causes. The image that Russell utilizes to illustrate this causality is the mind/brain structure. Just as mental states cannot be completely reduced to brain states but are still constrained by neuroscience, so too might God act analogously to mind with the effects in nature being the subsequent brain states.¹¹ The key idea of this approach is to maintain that the composite, complex reality has effects upon the more simple realities without being fully reducible to those simple realities.

Whole-part causality deals with boundary effects upon some given state of a system. Russell notes that this sort of causality is sometimes referred to as constraint causality. From this perspective, God enacts effects at the boundary of a system which in turn has an effect on the interior states of a system. God's action would be objective but it would also be exclusively indirect. Russell offers some helpful examples for visualizing this scenario, such as, "The formation of vortices in a bucket of water being heated by a burner. The vortices form because the shape of the bucket as well as the applied heat bring about large-scale patterns of movement in the water."¹² Russell also uses an

¹¹Ibid., loc. 2225.

¹²Ibid., loc. 2233.

example from his ultimate locus of divine action, quantum mechanics, “Another example, coming from quantum mechanics, is the set of eigenstates in a square potential well. These eigenstates are simply periodic functions because they must vanish at the boundary of the well.”¹³ Because of the necessity of indirect action within this concept, it will not fit Russell's criteria for NIODA.

Lateral causality is causality that operates within the same epistemic level as its effects. The key example of this sort of causality, due in large part to the work of John Polkinghorne, is chaos theory. Russell uses a meteorological example to clarify the idea of lateral causality, “So the 'butterfly' effect in chaos theory depicts small differences in the initial states of a chaotic physical system leading to large differences in later states of that same system: For example, small changes in weather over Paris might lead to large-scale changes in the weather over Geneva.”¹⁴ God would function in the initial conditions of a chaotic system which would have dramatic, extreme effects at a later time in the system.

Bottom-up causality is the final sort of causality set forth here, and it is the locus of divine action for both Russell and Plantinga. Bottom-up causality emphasizes action on the simplest, most fundamental levels of reality which results in effects at more complex levels of reality. Russell uses the example of temperature and pressure fluctuating within a container due to the collisions of the atoms in that system. He describes God's action in that “God might act at the most elementary domains of an organism or system to achieve specific results which are manifest at the level of ordinary human experience.”¹⁵ Quantum mechanics supplies the necessary conditions for modeling bottom-up causality.

¹³Russell, *Cosmology*, loc. 2233.

¹⁴*Ibid.*

¹⁵*Ibid.*, loc. 2243.

Russell believes that eventually, all of these causal-types will be necessary to fully model God's action in the material universe.¹⁶ But Russell is especially concerned with God's action before the appearance of the higher primates, and since there are no rational beings present until that time, bottom-up causality seems the most appropriate understanding of God's action. Russell indicates this when claiming that “the challenge is to conceive of God as acting in the processes of biological evolution or physical cosmology long before the arrival of any kind of complex biological organism (let alone humanity).”¹⁷ Thus, he believes that the other causal-types fail to take full account of this time frame, arguing that “top-down causality is helpful when considering the action of conscious and self-conscious creatures that are genuinely open to God's action and that have at least some capacity to respond to it.”¹⁸ Before the arrival of complex biological life, such conditions had not obtained. Whole-part causality fails because indeterminism seems unlikely on that view. Russell writes that “the challenge here is to find phenomena in nature that display holistic characteristics and that point to ontological indeterminism.”¹⁹ He does not think any such phenomena exist, at least not in the time period he is attempting to explain.²⁰ Russell believes that lateral causality fails for the

¹⁶Russell believes that “it is crucial that we *not* see the present focus as a *general* limitation or restriction of divine action to bottom-up causality alone. Instead, I view the present argument as located within a much broader context, namely the theology of divine action in personal experience and human history, because that is primarily where we, as persons of faith, encounter the living God. For this, we clearly need to consider a variety of models, including both top-down, whole-part, and bottom-up causes and constraints, and their roles within both embodiment and nonembodiment models of agency, with particular emphasis on the mind/body problem and human agency. Moreover, I believe we will eventually need to work out the detailed relations between the models by integrating them into a consistent and coherent, adequate and applicable metaphysical framework.” (Russell, *Cosmology*, locs. 2833-2841). See also Robert John Russell, “Divine Action and Quantum Mechanics: A Fresh Assessment,” *Philosophy, Science, and Divine Action*, ed. F. LeRon Shults, Nancey Murphy, and Robert John Russell (Boston: Brill, 2009), 353.

¹⁷Russell, *Cosmology*, loc. 2243.

¹⁸Robert John Russell, “Divine Action and Quantum Mechanics: A Fresh Assessment,” in *Quantum Mechanics: Scientific Perspectives on Divine Action*, vol. 5, ed. Robert John Russell et al. (Vatican City State: Vatican Observatory Foundation, 2001), 300.

¹⁹*Ibid.*, 301.

²⁰Russell does not think that the ecological web is a viable candidate for this scenario. He argues that “the ecological web is often cited as a candidate, due to its inherent complexity and seemingly

same reason since chaos theory is deterministic. Russell argues that “chaos theory is indisputably a deterministic theory fully situated within classical physics even though it is expressed in terms of statistical equations.”²¹ Russell does not think that the determinism which models chaos theory can be reconciled with an ontologically open universe.²²

Quantum Mechanical Locus

What makes quantum mechanics so suitable to NIODA in Russell's estimation? First, quantum theory unlike many classical theories lends itself explicitly to an ontologically indeterministic interpretation. Russell expresses that “in my opinion the most promising approach is to base NIODA on quantum mechanics (QM), with its philosophical interpretation that nature's ontology at the subatomic level is at least partially indeterministic.”²³ As opposed to the statistics used in classical mechanics or chaos theory, the statistics utilized in quantum mechanics are the necessary description of the quantum understanding; there exists no other mathematical option. Russell offers a physical example to illustrate this crucial point:

Consider a sample of uranium (^{238}U) in which a specific atom suddenly decays into thorium (^{234}Th) by emitting an alpha particle. We can calculate the probability of the event to occur, but we cannot explain why this particular uranium decayed when it did and why its neighbors did not. All the atoms in the sample are absolutely identical, and the decay event is independent of any physical or chemical conditions imposed on them. Similar quantum mechanical descriptions apply throughout the subatomic realm. In each case, the total set of natural conditions affecting the process, and thus the total possible set of conditions which science can discover and

endless openness to external factors, but in my opinion fails to be a candidate for noninterventionist divine action because of the underlying determinism of the processes involved, no matter how complex or inter-related they might be.” Ibid.

²¹Russell, *Cosmology*, loc. 2335.

²²Perhaps there are other lateral causal theories that would fit NIODA, but chaos theory is currently the most prominent. Russell sees another issue with employing chaos theory, at least Polkinghorne's version. He does not think that one can make the move from epistemological indeterminism to ontological determinism on the basis of a general close link between epistemology and ontology. Russell writes that “the appeal to a link between scientific epistemology and ontology goes far beyond the phenomena science studies—which taken at face value might suggest ontological openness—to the theory representing them.” Ibid.

²³Ibid., loc. 2456.

describe through its equations are *necessary but insufficient* to determine the precise outcome of the process.²⁴

Because the cause of decay within the scientific explanation remains insufficient, the indeterminism in question is legitimately understood as ontological as opposed to merely epistemic.

Ontological indeterminism results from a superposition of various quantum state configurations. All of them exist, at least potentially, but none are fully actual. Then, at some moment of time, one of those states actualizes. This interpretation is due to Heisenberg, and Russell believes that if it holds true, then, “We can view nature theologically as genuinely open to God's participation in the bringing to actuality of each state of nature in time.”²⁵ God's functioning on this micro-scale has “classical” effects on the macro-scale such that God does not have to intervene, violate, or supersede any natural laws or natural regularities.

With this coupling of ontological indeterminism and the perception of macro effects from micro influences, Russell believes that quantum theory fulfills what is needed for NIODA. He claims that once the macro world is realized from irreversible quantum events, then it becomes possible to relate the general with the particular. Russell concludes that “this in turn opens up the possibility both for non-interventionist general divine action ('general providence'), which indirectly results in creating and sustaining the world, and for non-interventionist special divine action ('special providence'), which can indirectly result in special events in the world.”²⁶ Since quantum theory offers such a comprehensive understanding of God's action which flows directly from the empirical evidence and mathematical analysis, Russell finds strong grounds for locating divine action within the quantum realm.

²⁴Ibid., loc. 2783.

²⁵Ibid., loc. 2792.

²⁶Ibid., loc. 2832.

A second reason for quantum theory as a NIODA theory is its key role in biological evolution, particularly in genetic mutation. Defending theistic evolution is a constant task in much of Russell's work, and he understands quantum mechanics as being helpful to that end. He explains that

what makes QM-NIODA particularly attractive from the perspective of a Lakatosian methodology is its surplus predictions in the realm of theistic evolution: Quantum mechanics is integrally involved in genetic mutations. The making and/or breaking of a hydrogen bond which is intrinsic to such mutations is a quantum mechanical process. These mutations, in turn, make a crucial contribution to the processes of biological variation that, together with natural selection, constitute the Darwinian account of evolutionary biology. In essence, over time evolution expresses the information coded in genetic mutations through phenotypic variation in progeny, with their accompanying relative degrees of fitness. To put it metaphorically, *evolution is the long-term biological version of Schrödinger's Cat.*²⁷

The significance of the Schrödinger's Cat thought exercise is that the two-state system of the cat, living cat or dead cat, in the chamber with the Geiger delivery mechanism exists as a superconfiguration of potentialities until one of those states is actualized. The obtaining of the dead cat state represents the common, general experience of reality while the living cat state represents something extraordinary. Russell describes the situation as follows: "It [quantum mechanics] produces the *ordinary* world of the cat and Geiger counter . . . which we describe as general providence. But it also results in *specific differences* in the ordinary world—the cat living instead of dying—when God acts in one way instead of another in a specific quantum event."²⁸ Such is the case of genetic mutation as God works within the quantum realm to bring about emergent species.

QM-NIODA

Since quantum mechanics represents the most foundational and fundamental theory in physics, it is at the bottom of the epistemic hierarchy. Thus, not all realities will be reducible to it, but it will be binding upon all subsequent disciplines. Consequently, its

²⁷Russell, *Cosmology*, locs. 443-51.

²⁸*Ibid.*, loc. 3326.

epistemic position means that God would be acting directly at the subatomic level. The effects would be direct and mediated. Russell describes the process as follows:

Thus divine acts of general and special providence at the ordinary, classical level are mediated and indirect divine acts that arise from God's direct acts mediated in, through, and by quantum processes. Such providential acts can equally be seen as a form of God's ongoing, continuous creative action. They would be mediated in, with, and through the processes of nature, since God's acts would work together with nature to bring about distinct quantum events. They would be objective because the precise way these events occur are due, in part, to God's special intentions expressed in God's particular action in and through them. Most importantly, God's action can be considered non-interventionist because quantum mechanics, as we shall discuss in detail below, can be interpreted as pointing to ontological indeterminism in the subatomic realm.²⁹

A number of features need to be highlighted. First, since there are insufficient natural conditions present for the quantum event, God functions as the remaining piece to cause the wave function collapse. Second, this model allows God to work in and through nature as opposed to violating natural regularities in some way. Third, God's action is continuous. Fourth, both general providence and special providence are readily explicable.

Russell believes that the Copenhagen interpretation of quantum mechanics is the most promising interpretation for QM-NIODA. Russell first notes that the Copenhagen interpretation is the consensus view, writing that “the Copenhagen interpretation is, arguably, the most widely held view by physicists and philosophers of science.”³⁰ It would seem that the view's popularity coupled with its ability to explain the empirical data bears some influence in Russell's choosing of it as the most viable interpretation. He then goes on to highlight some aspects of the Copenhagen interpretation congenial to NIODA: wave-particle duality, inherent indeterminism, and the impossibility of event-by-event causal representation in a continuous space-time

²⁹Ibid., locs. 2725-2733.

³⁰Russell, “Divine Action and Quantum Mechanics,” 364.

background.³¹ Both indeterminism and the impossibility of event-by-event causal representation are significant for Russell's view. The former means that God's action can remain non-interventionist while the latter means that necessary but insufficient conditions are active in quantum mechanics. Because quantum events obtain in spite of there being insufficient conditions for their obtaining, God can conceivably and rationally function as the condition that brings the quantum event to fruition. It must be noted, however, that Russell does suggest that future research should attempt to claim all of those common propositions that arise within each quantum interpretation. He writes that “my suggestion is to sort out which features are general enough to be found in most or perhaps all interpretations.”³² Therefore, Russell is not bound to the Copenhagen interpretation exclusively, notwithstanding the fact that it is the interpretation he defends in his published work.

Even though Russell claims that the NIODA approach does not explain “how God acts,” some general comments to that effect can be made.³³ To narrow how God's action functions, we must look at how God relates the wave function defining the state of the system. After noting that God is active in all space and time with respect to the wave function, Russell writes that “one might say that the 'general action' of God is God's action in maintaining the regular time development of ψ [wavefunction] as described by the Schrödinger equation, much as we understand God's general providence as maintaining the world in its bulk, macroscopic configurations.”³⁴ God's general action is an active sustaining of the superconfiguration of potential states for the system.

³¹Ibid., 364.

³²Ibid., 395.

³³Russell writes about the NIODA approach that “this approach does *not* 'explain how God acts' or even constitute an argument *that* God acts. Instead it assumes that warrants for the belief in divine action come from extended theological arguments whose sources lie elsewhere (including scripture, tradition, experience, and reason).” Ibid., 355.

³⁴Ibid., 378.

At some moment, unpredictably and spontaneously, the wave function will collapse such that a particular quantum state actualizes.³⁵ Russell believes that God's action can be seen in this event as well. He writes that "God acts *globally* on ψ to bring about the 'collapse' by causing a *local* transition from a nonzero to a zero amplitude everywhere on a sphere one light-hour in radius except at the location of the detector."³⁶ Russell claims that if the event at the detector can be considered a macroscopic event, then this scenario constitutes an act of special providence, and that event can serve as the model of how God brings about macro-effects through action at the quantum level.

QM-NIODA and Evolution

Russell displays how the quantum locus of divine action might manifest itself through an analysis of biological evolution. He establishes his thesis as, "The non-interventionist effects of God's special action occur directly at the level of, and are mediated by, those genetic variations in which quantum processes play a significant role in biological evolution."³⁷ To defend this claim, Russell must show that genetic mutations depend, in part, on quantum theory. If Russell is able to trace some aspects of genetic mutation to quantum origins, then he will be able to argue that evolution rests upon a scientific theory amenable to an ontologically indeterministic interpretation. In that way, God can directly act through quantum mechanics to bring about macro-scale evolution without any semblance of interventionism.

The type of action God would employ in evolution would be direct, mediated

³⁵Russell uses technical language to describe the collapse, explaining that "at the moment of collapse, ψ changes discontinuously from a light-hour sphere, ψ_s , to a fully localized wavepacket ψ_x . Thus the irreversible interaction or quantum event involving the particle and the detector is represented here by the juxtaposition of, and discontinuous transition between, the global ψ_s and the local ψ_x that co-characterize and co-constitute what we mean by the collapse of the wavefunction." Russell, "Divine Action and Quantum Mechanics," 378.

³⁶Ibid., 378.

³⁷Russell, *Cosmology*, loc. 3831.

action on the quantum level which would yield indirect effects on the biological level. There exists no *ex nihilo* sort of creation here which would result in unmediated action. The action remains non-interventionist precisely because of the ontologically indeterministic interpretation readily available to quantum theory. Russell is careful to highlight that the open gaps within quantum causation should not be thought of as merely epistemological gaps or as directly God-caused gaps, rather, they rely, “On the intrinsically open character of the natural processes.”³⁸ The link between evolution and God's action understood in the non-interventionist way is created through the inherent openness of nature on the quantum level which was directly implanted into the universe when God created it *ex nihilo*. Russell writes about the universe's potentialities that “God provides the world with rich potentialities built into nature from the beginning, including the combination of law and chance which characterize physical and biological processes.”³⁹ Russell's emphasis on the nature of the chance, as it was in his interpretation of quantum theory generally, is critical.

Russell uses the name “statistical deism” to refer to the idea that the chance within nature is only the result of epistemological limitations: the chance that appears to accompany biological evolution should not be understood as *real* in any ontological sense. Russell notes that statistical deists claim that “chance in biology, from cell to organism to population and the environment, usually stands for our ignorance of what are in fact underlying, though exceedingly complex, deterministic processes.”⁴⁰ He gives this view the nomenclature of the deists because this view inevitably results in God only acting in initial creation and general sustaining. Russell explains that “if chance is therefore mere epistemic ignorance ... then the claim by theistic evolutionists that God

³⁸Ibid., loc. 3822.

³⁹Ibid., loc. 3767.

⁴⁰Ibid., loc. 3783.

acts through chance in evolution unavoidably devolves back into the notion that God's only real actions are to have created the universe ... and to uphold it in existence.”⁴¹ The theological view that God only creates and sustains the universe with no doctrine of special providence or action subsequent to creation *ex nihilo* is classical deism. The universe, on this concept, reverts to something more akin to Laplacian, closed determinism as opposed to the ontologically open quantum theory. Russell writes that “in essence, 'chance and law' really only amounts to 'unknown deterministic law' and 'known deterministic law,' and thus a causally closed mechanistic system at the level of biology.”⁴² That Laplacian picture of the universe was, in large part, what led so many theologians to embrace deism, interventionism, or a purely subjective faith. But, as Russell has shown through his analysis of the Copenhagen interpretation of quantum mechanics, a non-interventionist, objective way of acting is available to God because the universe can be understood, at its most fundamental level, as ontologically open.

Before explaining in what way quantum interactions might be responsible for genetic mutations, it would be helpful to know exactly what understanding of evolution Russell is defending. Russell subscribes to the neo-Darwinian theory of evolution known as the “Modern Synthesis.” He takes the standard era of arrival of biological life on Earth to be approximately 3.5-3.9 billion years ago. He proceeds: “According to the theory of evolution, the vast biological complexity we see in the fossil record along with the two million species we now know to exist can be explained in terms of two fundamental principles: variation and natural selection.”⁴³ As variation occurs within species, their chances for propagation either increase or decrease depending upon the benefit of the variation. Russell notes that the randomness of these variations as it relates to the species

⁴¹Russell, *Cosmology*, loc. 3783.

⁴²*Ibid.*

⁴³*Ibid.*, loc. 3834.

in which it happen results in the variation often being neutral or even harmful. He continues: “Hereditary variation ... involves both spontaneous mutations which change one variant to another and sexual reproduction, during which these variations are recombined in countless ways.”⁴⁴ These variations arise when mutations occur in the DNA structure which can be caused by various forms of radiation or chemicals. On the occasion that these mutations are beneficial to the entity, that entity thrives and passes on the new trait to its offspring. Through natural selection, these mutations propagate to the point that a new species exists.

Russell locates the potential for divine action within evolution at the level of genetic mutation. If he can show that God can objectively and non-interventionistically operate at the quantum level to bring about genetic mutations, then Russell will be able to legitimately infer, from the significant reliance of evolution upon genetic mutation, that God acts crucially in the evolutionary process. But what warrant will Russell have for concluding that genetic mutations rest upon quantum interactions?

Russell notes that many causes of variation within organisms can be traced to classical explanations. He includes chemical mutagens, mechanical/physical mutagens, and chromosome segregation as those sources described by classical mechanics. Note that Russell would not argue that God does not act in these events, rather he would argue that the action is something other than QM-NIODA. He goes on to list causes of variation that need quantum explanations or some hybrid classical/quantum explanation, including, point mutations, spontaneous mutations, radiative physical mutagens, and crossing over.⁴⁵ Within each of those broad categories, Russell lists the specific areas in which quantum considerations might arise.⁴⁶ If Russell is correct that these sources of variation

⁴⁴Ibid., loc. 3843.

⁴⁵Ibid., loc. 3861

⁴⁶He lists base-pair substitutions, insertions, and deletions under point mutations; he lists errors during DNA replication, repair, and recombination under spontaneous mutations; and he lists X-rays and ultraviolet light under radiative physical mutagens. Ibid., loc. 3861.

cannot be modeled by classical mechanics alone, then the ontologically indeterministic understanding of the Copenhagen interpretation becomes valid for genetic mutations. Since the causes of these variations would be underdetermined, that is, they are insufficiently predicted from prior states, then God would function as the causal agent in their obtaining.

Objections and Rebuttals

With Russell's divine action theory in place, we can now consider some of the potential problems with it and Russell's response to those problems. The primary problem confronting the Copenhagen interpretation, and the problem for which Plantinga will reject it, is the measurement problem. Russell frames the measurement problem as, "How are we to understand measurements by using quantum physics if measurements cannot be described by applying the Schrödinger equation to them and if we are not to alter quantum physics?"⁴⁷ The measurement problem manifests in one particular issue for the Copenhagen interpretation: episodic action.

Episodic action. Russell cites John Polkinghorne, in particular, to highlight 3 reasons for episodic action arising from the measurement problem: "(i) the concept of measurement is limited to processes that involve the quantum and classical levels ... (ii) such interactions only occur from time to time, and (iii) they relate quantum mechanics to chaos theory and thus raise the technical problems associated with quantum chaos."⁴⁸ These issues result in the so-called "episodic" action of God which is a problem if one believes that God acts continuously.

Russell does not think that the episodic nature of God's action actually obtains in the way that Polkinghorne describes. Russell suggests that "such interactions can occur

⁴⁷Russell, "Divine Action and Quantum Mechanics," 371.

⁴⁸Ibid., 375.

at any time and place in the universe where the deterministic time-development of the quantum phenomena governed by the Schrödinger equation is disrupted by an irreversible interaction (measurement).^{49,50} He goes on to subsume that idea under the term *pervasive* in order to indicate the comprehensiveness of God's action. It would appear that Russell believes that the QM-NIODA occurs only when the wave function is disrupted as opposed to occurring during the continuous time-development from his insistence that “a term is needed that suggests that noninterventionist divine action can be related to the sudden disruptive aspect of quantum processes that can occur anywhere, but not to the continuous time development of the system governed by the Schrödinger equation.”⁵¹ He believes that such pervasiveness eliminates the possibility of it being merely God's episodic action.

Whether or not limiting QM-NIODA to the disruption of the wave equation actually defeats the episodic action problem, Russell certainly believes it does, writing that “with this understanding in place, I hope that concerns about this approach being episodic can be put to rest.”⁵² That Russell believes he has overcome the episodic action problem is important because it means that the Copenhagen interpretation can be reconciled with Russell's theology.

Russell also argues that the measurement problem is overcome in how one understands what a measurement is. Russell understands a measurement to not be limited to micro-macro interactions, but that measurement should be understood to, “Include *all irreversible interactions* in nature from micro-micro to micro-macro. What is crucial,

⁴⁹Ibid.

⁵⁰ Russell notes that “My reference to ‘irreversible interaction’ is to show how much more ubiquitous the collapse is than the term ‘measurement’ suggests (especially with its seeming tie to an ‘observer’) and to note that the key feature is irreversibility.” Robert Russell, e-mail message to author, March 25, 2014.

⁵¹Russell, “Divine Action and Quantum Mechanics,” 376.

⁵²Ibid.

then, to making an interaction a 'measurement' is not that it involve something 'macro' but that it is irreversible."⁵³ With that definition in hand, Russell argues that "within (at least one variety of) the Copenhagen interpretation, ontological indeterminism, the measurement problem, the collapse of the wavefunction, and the meaning of quantum event all merge into one conceptuality: a quantum event is an irreversible interaction."⁵⁴ The argument seems to be that the measurement problem is not an "independent issue" but a feature of the way quantum mechanics functions, and that such operations do not result in a God who acts episodically.

Many interpretations. Another problem comes from the multiple interpretations that are available for quantum mechanics. Why choose one over another? Russell lays out four reasons why multiple interpretation is not an issue. First, all theories have the possibility of multiple interpretations. Russell writes that "every scientific theory is open to competing metaphysical interpretations; indeed, metaphysics is *always* underdetermined by science."⁵⁵ Thus, engaging in the project of relating God's action to science in principle will result in considering theories involving multiple interpretations. The second rebuttal is that all of the various interpretations of quantum mechanics require a reinterpretation of the philosophy of nature as understood from classical physics.⁵⁶ Thus, all quantum models will have similar problems. Third, Russell argues that he is doing constructive theology as opposed to natural theology. Thus, any change in the theory he does choose would not move divine action away from the quantum realm, rather it would merely offer a different interpretation of the same data; the constructive project remains the same. Fourth, Russell believes that the constructive approach is a

⁵³Ibid., 371.

⁵⁴Ibid., 372.

⁵⁵Ibid., 366.

⁵⁶Ibid., 366-67.

good thing, even if an agreed upon theory were supplanted. He writes that “by illuminating the concrete implications of a noninterventionist approach to objective special divine action in light of a particular interpretation of quantum physics, the strengths as well as the limitations of the approach are revealed, which in turn should lead to further insight and new areas of research.”⁵⁷ In the same way that scientific understanding progresses from experimentation and theory revision, so too can the program of relating God's action to the sciences progress by revision and new analysis. For that to take place, a concrete, explicit theory must be posited.

Nicholas Saunders and intervention. Nicholas Saunders does not think that quantum theory can function as a legitimate theory for NIODA. After establishing the general understanding of the Copenhagen interpretation, he examines what he considers to be the only four available options for God's action within this interpretation: God alters the wave function between measurements, God makes his own measurements on a given system, God alters the probability of obtaining a particular result, and God determines the result of each measurement.⁵⁸ Saunders' chief problem seems to be that all of these approaches hint at interventionism which is precisely what Russell seeks to avoid. He argues that manipulating the wave function directly is highly interventionist, causing the wave function to collapse involves God making a measurement which is intervention, altering the quantum probabilities prior to measurement would result in intervention, and God determining measurement outcomes is interventionist-like since it directly contradicts any understanding of natural law that permits possible intervention.⁵⁹ In addition to those critiques, Saunders also claims that with respect to Born's probability

⁵⁷Ibid., 367.

⁵⁸Nicholas Saunders, *Divine Action and Modern Science* (Cambridge: Cambridge University Press, 2002), 144-156.

⁵⁹ Ibid., 156.

interpretation that the probabilities must, “1. Be ontologically prior to the measurement and thus represent some feature of the system in question; and 2. be modifiable by God *without* an intervention in the quantum wavefunction itself.”⁶⁰ These two propositions cannot be held together on the orthodox interpretation which precludes utilization of quantum mechanics for NIODA on the Copenhagen interpretation. Saunders concludes that the Copenhagen interpretation fails because its supporters must answer, “How it is that the probabilities of obtaining a particular result at a quantum measurement can be both prior to the measurement and changed without somehow changing the quantum system itself in an interventionist sense.”⁶¹ Since such a state of affairs is impossible, QM-NIODA on the Copenhagen interpretation must be rejected. Russell disagrees with Saunders on multiple levels.

First, Russell claims that Saunders' four “possible” understandings of God's action on the Copenhagen interpretation are not actually proposed by anyone in the field. He writes concerning the four ways that “curiously they do not describe the actual positions of any of the principal scholars that I know of in theology and science, nor does Saunders claim that they do, so their presentation seems more an academic exercise than a substantive argument.”⁶² Thus, they offer not legitimate reason to reject QM-NIODA on a Copenhagen interpretation, at least not on Russell's conception of it.

Second, he suggests that the fourth approach is close to what many scholars claim. The fourth approach was that God controls the outcomes of particular measurements. Russell writes that “my way of putting it would be that God foreknows the probabilities predicted by orthodox quantum mechanics, since these after all describe possible outcomes of what are ultimately the results of the mediated acts of God in and

⁶⁰Ibid., 154.

⁶¹Ibid.

⁶²Russell, *Cosmology*, loc. 3089.

with nature.”⁶³ Therefore, the only way this critique could be a problem for Russell's use of the Copenhagen interpretation would be if one maintained a definition of natural law similar to that of Laplace. Since Russell believes that the natural laws do not have ontological status and merely describe the divine causality at play, there exists no problem for his account.⁶⁴ Better stated, Russell believes that both God's general providence and special providence can be modeled through the statistical equations of quantum mechanics.

Third, the idea of regulative rather than ontological descriptions supplies the remainder of Saunders' critique. With respect to Born's probability interpretations, Russell believes that the problem is avoided because the natural laws should not be ontologically understood. But this leads to a more crucial problem for Saunders. Saunders believes that if quantum mechanics is the underlying structure of the universe which makes it binding upon higher order epistemic levels and its equations can be understood as regulative rather than ontological, then logically, all scientific theories can be understood as regulative. Such a move necessitates that nothing that God does could ever be interventionistic because there are not laws to violate.⁶⁵ Thus, the whole enterprise becomes trivial.

Russell responds by claiming that a regulative understanding of natural law does not trivialize the theological significance of science. Russell writes in rebuttal that “God's special and general providence 'blur together' in a regulative and deterministic account of the laws of nature, but we can distinguish special and general providence

⁶³Ibid., loc. 3096.

⁶⁴Ibid.

⁶⁵Saunders writes that “the final option, that God determines the outcome of measurements, is itself reliant on a regularitarian approach to quantum measurement which, if it is pushed to its logical conclusion, permits non-interventionist SDA in any physical process and on any scale whatsoever. As such it is in direct contradiction to any understanding of laws of nature that permits even the slightest possibility of an intervention.” Saunders, *Divine Action and Modern Science*, 156.

when there are differences between the underlying deterministic versus stochastic laws, as is the case with classical and quantum mechanics.”⁶⁶ Thus, instead of trivializing the enterprise, quantum theory actually opens the door to theological significance because God's special action can be objectively recognized. Moreover, Saunders' view only applies if the quantum laws have ontological status in that God must intervene in them. But the opposite of this claim is precisely what Russell argues for: “This would only be true if *each* event is determined by the ontological probability distribution. It would *not* be true if *the ensemble as a whole, and not each event*, is determined by the ontological probability distribution.”⁶⁷ Only in the former case would God's action result in interventionism since in that case the wave function would determine all events.⁶⁸ Because that understanding of the wave function is not prominent, Saunders' critiques are not pertinent to Russell's program.⁶⁹

Conclusion

Russell believes that the Copenhagen interpretation of quantum mechanics

⁶⁶Russell, *Cosmology*, loc. 3114.

⁶⁷*Ibid.*, loc. 3123.

⁶⁸Russell also rejects Saunders' approach for a non-empirical reason. Russell believes that Wesley Wildman offers a valid understanding of Saunders' criteria for SDA: “1) objectivity, 2) incompatibilism (freedom is incompatible with determinism), 3) non-interventionism, and 4) the 'strong-ontological view of the laws of nature'.” (Robert John Russell, *Cosmology: Alpha to Omega*, [Minneapolis: Fortress Press, 2008], Kindle Electronic Edition: Chapter 5, Location 3123-3131). But if this criteria is accurate, then it is clearly logically incoherent. Russell writes that “The tetralemma is intrinsically and self-evidently self-contradictory. An incompatibilist account of non-interventionist objective divine action requires that nature be causally indeterministic. But a strong-ontological interpretation of the laws of nature means that nature is deterministically governed.” *Ibid.*, loc. 3148.

⁶⁹Russell's full rebuttal is that “actually I am not convinced that this is even an intelligible position. In any case it is certainly a 'red herring' since *no one* in the divine action series, as far as I know, takes this view. Indeed why would we convene a decade of research conferences like CTNS and the VO have undertaken if even in quantum mechanics, where the striking change in quantum statistics compared with classical physics may point to a lack of efficient causality in nature, was really just equivalent to the kind of 'epistemic ignorance' that characterizes chance in classical mechanics that makes God's objective action interventionistic?” (Robert John Russell, *Cosmology*, loc. 3123). Saunders ignores the radical difference in natural ontology between classical Newtonian physics and quantum physics, or he supposes that quantum physics is, in fact, deterministic. See also Wesley J. Wildman, “The Divine Action Project, 1988-2003,” *Theology and Science* 2 (2004): 31-75 and Thomas Tracy, “Scientific Perspectives on Divine Action? Mapping the Options,” *Theology and Science* 2 (2004): 199.

offers the best possibility of locating God's NIODA. He argues that the Copenhagen interpretation is understood as the scientific consensus and it can frame a noninterventionist framework in which God can act; both of these facts increase the warrant for accepting the Copenhagen interpretation. Russell believes that he can overcome the theological problem of the Copenhagen interpretation resulting in God acting episodically, if even it should be considered a problem.

Russell elegantly ties science and theology together by utilizing quantum theory as seen through the eyes of faith. He writes:

If his [Heisenberg] interpretation is correct, we can view nature theologically as genuinely open to God's participation in the bringing to actuality of each state of nature in time. Where science employs quantum mechanics and philosophy points to ontological indeterminism, faith sees God acting with nature to create the future. This is neither a disruption of the natural process nor a violation of the laws of physics. Instead, it is God fulfilling what God through nature offers, providentially bringing to be the future which God promises for all creation, acting specifically in all events, moment by moment.⁷⁰

Perhaps no other statement better encapsulates Russell's understanding of the living God who acts, his understanding of the dynamic relationship between science and theology, and his zeal for NIODA as a means of preserving meaningful theology in the face of scientific fact.

Special Divine Action Theory: Plantinga

Intervention makes good sense on the classical Newtonian model of the universe, particularly in light of the Laplacean additions; intervention would occur whenever some later state of affairs *not* entailed by some previous state of affairs actually obtains.⁷¹ In other words, the determinism of the machine gets thwarted. But how would

⁷⁰Russell, *Cosmology*, locs. 2790-2798.

⁷¹Plantinga's explicit definition is, "An act *A* (divine, demonic, angelic, human) is an intervention just if *A* causes an event *E* to occur at a time *t*, where there is an interval of times bounded above by *t* such that for every time *t** in that interval, *S*(*t**) & *L* doesn't entail that *E* occurs at *t*," where *E* is some event that is contrary to natural law, *L* is the name of the conjunction of the natural laws, *S*(*t*) is the physical state of the universe at any time *t*, and *t** is some later time. Alvin Plantinga, "What is 'Intervention'?" *Theology and Science* 6 (2008): 389.

some sort of determinism get thwarted on the quantum model when all possibilities are contained within the set of the probabilities entailed by the wavefunction? Plantinga does not know because he sees no difficulties with intervention. The best that he can do is to quote Wildman on violating some general order:

Most participants [in the Divine Action Project] certainly felt that God would not create an orderly world in which it was impossible for the creator to act without violating the created structures of order ... A noninterventionist special divine act is in accord with created structures of order and regularity within nature, while an interventionist special divine act involves abrogating, suspending, or ignoring created structures of order and regularity within nature.⁷²

Plantinga grants this definition before moving on to propose a divine action theory based on a particular quantum mechanical model. He suggests that “perhaps there is a way around this problem. Members of the DAP don't or can't say what intervention is; even so, it may be possible to specify a way God can act specially the world that avoids the objections they bring against intervention.”⁷³ He finds that solution in a certain collapse theory of quantum mechanics. Thus, Plantinga finds no difficulty with direct, explicit divine intervention, but proceeds to what Russell's classification system labels a noninterventionist theory; a theory that avoids the objections many have with interventionist divine action.

Ghirardi-Rimini-Weber Theory

Plantinga thinks that the Copenhagen interpretation offered by Russell cannot be reconciled to either of their understandings of God. His problem is the same as everyone's problem with Copenhagen interpretations: the measurement problem. The problem is that quantum events on the Copenhagen model are deterministic whereas the measurements are the indeterministic feature. He cites John Polkinghorne to explain the point: “In between the measurements, the continuous determinism of the Schrödinger

⁷²Ibid., 389.

⁷³Plantinga, *Where the Conflict Really Lies*, 113.

equation applies. Occasions of measurement only occur from time to time, and a God who acted through being their determinator would also only be acting from time to time.”⁷⁴ Plantinga understands that there are widespread interpretations of what *measurement* might actually be, but he still believes that the Copenhagen interpretation of quantum mechanics results in episodic action. Therefore, Plantinga believes that he must find some other interpretation to model divine action, eventually settling upon the Ghirardi-Rimini-Weber (GRW) approach. He claims that “on these collapse approaches, collapses are not restricted to measurements; they occur spontaneously, and at a regular rate.”⁷⁵ Not only will this theory avoid the episodic nature of God's action problem by not explicitly introducing measurement, it also avoids some localization problems. Plantinga explains that “on the standard Copenhagen interpretation, objects, including macroscopic objects, don't seem to have a location at times at which their location isn't being measured or detected; this can seem embarrassing.”⁷⁶ The GRW approach tempers such problems because of the frequency of localization due to the spontaneous collapses, but it must be noted that there remains extremely short intervals of non-localization.⁷⁷

Plantinga suggests a two part model for understanding God's relation to GRW theory: when there are no collapses occurring, then the system evolves as detailed by the Schrödinger wave equation, but when collapses do occur, they are caused by God. The

⁷⁴Plantinga, “What is ‘Intervention’?” 392 from John Polkinghorne, “The Metaphysics of Divine Action,” in *Chaos and Complexity*, ed. Robert John Russell, Nancey Murphy and Arthur Peacocke (Vatican City: Vatican Observatory, 2000), 152-53.

⁷⁵Ibid.

⁷⁶Ibid.

⁷⁷Plantinga does recognize that problems still exist. He writes that “this still leaves puzzles: is the macroscopic system, my body, e.g., only intermittently located, even if located 10 million times a second? But at any rate there seems to be substantially less offense to common opinion, here, than on the classical interpretation.” (Ibid.). Plantinga's solution seems to be that there are so many collapses that the measurement problem from the Copenhagen interpretation is lessened. But if Russell's understanding of pervasiveness with respect to the measurement problem holds, then what benefits has Plantinga really gained from GRW theory? Russell's argument for pervasiveness claims precisely that so many “measurements” are happening that the object remains, for all practical purposes, localized. Thus, if pervasiveness is granted as a viable solution to the measurement problem then Russell has effectively reaped all of the benefits of Plantinga's proposal in addition to being on the side of scientific consensus.

reason that such a scenario could possibly obtain is because there exists no reason, on GRW theory, why the system collapses, that is, there exists no physical cause in any previous physical state of the system that determines the future wavefunction collapse. Russell described this scenario as the effect possessing insufficient causal conditions to actualize it. Thus, the collapse could have a non-physical cause, which Plantinga takes to be God. He calls the view “Divine Collapse-Causation” (DCC).

Consequences

First, Plantinga notes that if the macroscopic physical world supervenes on the microscopic physical world, then simple fluctuations on the micro-scale universe would yield dramatic results and intimate control in the macro-scale universe. He cites evolutionary biology as an example of a possible way this system could potentially operate, “He [God] might in this way guide the course of evolutionary history by causing the right mutations to arise at the right time preserving the forms of life that lead to the results he intends. In this way he might also guide human history. He could do this without 'violating' the created natures of things.”⁷⁸ This statement can be considered to be a general statement of Russell's more in-depth analysis of biological evolution. DCC theory provides a legitimate mechanism for manifesting God's providence.

DCC theory makes a way for miracles just as the general quantum picture does. Plantinga does note that if highly improbable events obtain in certain miracles, events so improbable that they go toward disconfirming quantum theory, then we must understand the universe as causally open which allows God to act in ways contrary to the ordinary way of things. Plantinga writes that

on DCC . . . God is constantly acting specially in the world and the material universe is never causally closed. Where God's action results in states of affairs incompatible with QM . . . God is treating his world differently from the way in which he ordinarily treats it; and the laws of nature, including QM, should be

⁷⁸Plantinga, “What is ‘Intervention?’” 393.

thought of as descriptions of the material universe when God is not treating what he has made in a special way.⁷⁹

Though Plantinga, nor anyone for that matter, can accurately state what a “special way” might be, we learn that his theory, dictated in large part by his epistemology, yields a causally open material universe and a God who acts constantly. Both of these outcomes model accurately Plantinga's understanding of God.

Lastly, DCC theory fits well with a biblical understanding of human freedom and the individual's relationship to God. Plantinga argues that DCC theory preserves the significance of the *imago dei* in which humans were created. He asks the reader to accept a set of assumptions: first, that human beings are immaterial selves, second, that humans have the power to freely cause physical events in the world, and third, that those physical events caused are quantum collapse-outcomes.⁸⁰ If those propositions were to obtain, then, “The thought would be that God's action constitutes a theater or setting for free actions on the part of human beings and other persons. God sets the stage for such free action by causing a world of regularity and predictability; but he causes only some of the collapse-outcomes, leaving it to free persons to cause the rest.”⁸¹ This model results in human action that is analogous to divine action, at least by way of mechanism.

Scientific Problems

Plantinga's model fits his theology quite well but it has not enjoyed widespread acceptance within the scientific community. Since Nicholas Saunders was used in the Russell section as the external critic, we will visit his work again. Saunders levies two critiques at GRW theory. First, the theory is considered contrived or *ad hoc* by many scientists. Saunders makes at least two comments to this end, writing that “it suffices to

⁷⁹Ibid., 394.

⁸⁰Ibid.

⁸¹Ibid., 394-95.

say here that many physicists have attacked it as being totally contrived.”⁸² A few paragraphs later, he writes that “there is a difficulty in that any such theory appears basically contrived.”⁸³ Why think that the theory is contrived? The GRW theory introduces two new fundamental constants into nature in order to make the equations work. Saunders explains that “according to the Ghirardi, Rimini and Weber model (GRW), the width of the Gaussian and the frequency with which it is multiplied to the wavefunction ... represent two new fundamental constants in nature.”⁸⁴ Saunders also notes the benefit of GRW theory, writing that “the benefit of CSL theory from a physicist's point of view is that, unlike the wavefunction collapse postulate, it offers one basic law for all quantum interactions which does not incorporate any distinct notion of 'measurement'.”⁸⁵ But despite those benefits, Saunders considers the price of “seeming contrived” too much to pay, in addition to his general critiques of quantum theory seen in his critique of Russell.

Second, Saunders cites a 1996 Albert and Loewer article as further evidence against GRW theory.⁸⁶ They claim that the theory does not possess a full localization potential. There exists some small probability that the wave function might collapse outside of the localization. Albert and Loewer call this possibility, the “tail” of Schrödinger's Cat. Saunders explains their view: “Assuming there are 10^{20} particles in a cat, it would only be a very short period of time (approx. 10^{-5} s) before the GRW Gaussian multiplies itself against any superposition of 'dead' and 'alive' states.”⁸⁷ The

⁸²Saunders, *Divine Action and Modern Science*, 158.

⁸³Ibid.

⁸⁴Ibid., 157.

⁸⁵Ibid., 158.

⁸⁶See D. Albert and B. Loewer, “Tails of Schrödinger's Cat,” in *Perspectives on Quantum Reality*, ed. R. Clifton (Dordrecht: Kluwer Academic Publishers, 1996), 81-92.

⁸⁷Saunders, *Divine Action and Modern Science*, 158.

result is that the tail of the cat remains while the rest of it disappears, meaning that the cat is never fully alive or dead. What would be the resolution to such a contradiction?

Saunders supplies the solution, claiming that “however despite the initial attractions of such an approach, there remains no consistent way in which the remaining 'tails' of Schrödinger's cat are eliminated unless God is also active in a highly interventionistic manner by eradicating them.”⁸⁸ Plantinga has no problem accepting that state of affairs.

Plantinga would respond to the so-called “contrivance” objection by claiming that his understanding of God is more basic than some communally agreed upon “contrivance” rule.⁸⁹ He would see himself as doing Augustinian science here: rather than seeing the two new fundamental constants of nature as a contrivance, he would argue that since this view fits best with God, the two constants would possess warrant. As for Saunders' second claim, Plantinga has no problem with “intervention” by God into the natural universe. But I do think that he could simply follow a Russell NIODA program in claiming that since there exists no deterministic equation demanding that the remaining cat “tails” obtain, then one can legitimately postulate God's NIODA. These potential responses by Plantinga, grounded in his epistemology, reveal a fundamental difference between he and Russell: for Plantinga, it would take extraordinary evidence for him to revise his theology whereas Russell argues that we ought to hold our theology faithfully but we must be ready to revise some nonfoundational aspects of it like any other hypothesis if there is to be true interaction between science and theology.⁹⁰

⁸⁸Ibid., 159.

⁸⁹I do not think that considerations of Occam's Razor would concern Plantinga here. Occam's idea is that one should not multiply causes beyond necessity to explain the effects. Since God is properly basic for Plantinga, the scientific theory must also explain God's action. The two new fundamental constants would be necessary to explain God's action which would exclude them from any notion of Occam's Razor.

⁹⁰One more scientific critique that could be used against Plantinga's choice of a spontaneous collapse theory is that all such type of theories deny energy conservation. Bradley Monton writes that “proponents of spontaneous collapse theories already reject the principle of conservation of energy—energy is not conserved when a GRW collapse happens, for example. The best way to explain the anomaly is just to point out how strange it is to have a physics which entails that objects regularly disappear and reappear. While this is not a fatal blow to spontaneous collapse theories, it would be better if there existed

Conclusion

Why would Plantinga propose such a theory as DCC when scientific convention has opted for something like the Copenhagen interpretation of quantum mechanics? Simply stated: he believes that DCC driven by the GRW model fits better with the concept of God found in his conception Christian theism than does the Copenhagen interpretation. After raising an objection to himself that this theory of divine action is tied to a particular quantum theory which may be supplanted and that quantum theory itself may be supplanted, he responds epistemologically that “if Christian belief is true, the warrant for belief in special divine action doesn't come from quantum mechanics or current science or any science at all; these beliefs have their own source of warrant.”⁹¹ He proceeds to explain how theology, obviously understood as properly basic on this account, should be the determining factor in some scientific decisions as opposed to science perpetually being the dictator:

What we should think of special divine action, therefore, doesn't depend on QM or versions thereof, or on current science more generally. Indeed, what we should think of current science can quite properly depend, in part, on theology. For example, science has not spoken with a single voice about the question whether the universe has a beginning: first the idea was that it did, but then the steady state theory triumphed, but then big bang cosmology achieved ascendancy, but now there are straws in the wind suggesting a reversion to the thought that the universe is without beginning. The sensible religious believer is not obliged to trim her sails to the current scientific breeze on this topic, revising her belief on the topic every time science changes its mind; if the most satisfactory Christian (or theistic) theology endorses the idea that the universe did indeed have beginning, the believer has a perfect right to accept that thought. Something similar goes for the Christian believer and special divine action. But where Christian or theistic belief and current science can fit nicely together, as with DCC, so much the better; and if one of the current versions of QM fits better with such belief than the others, that's a perfectly proper reason to accept that version.^{92,93}

an ontology that did not have such untoward consequences.” (Bradley Monton, “The Problem of Ontology for Spontaneous Collapse Theories,” *Studies in History and Philosophy of Modern Physics* 35 [2004]: 415). Monton goes on to defend a mass density simpliciter solution to the problem which would presumably be Plantinga's answer as well. Plantinga also cites Monton's article in defense of the counting problem proposed by Peter Lewis in his article, “Quantum Mechanics, Orthogonality, and Counting.” Peter J. Lewis, “Quantum Mechanics, Orthogonality, and Counting,” *The British Journal for the Philosophy of Science* 48 (1997): 313-328.

⁹¹Plantinga, *Where the Conflict Really Lies*, 395.

⁹²Ibid., 395.

Plantinga allows his metaphysics of God to assist in determining which scientific theory might be true. And he maintains that the move is valid because the theistic adherent *knows* about God's nature whereas numerous, wildly varying quantum interpretations appear to be equally valid, that is, empirically equal and logically valid. The theist *knows* about God's nature, assuming God's existence is true, precisely because the believer gets warrant for that belief, on Plantinga's epistemology, from the "Internal Witness of the Holy Spirit" and the "Instigation of the Holy Spirit." But for our purposes, suffice it to say with Plantinga from the quote above that theistic belief has its own sources of warrant independent of science. Because Plantinga's epistemology allows him warrant for belief in God, he chooses a collapse theory of quantum mechanics that fits better with his view of God than a collapse theory of quantum mechanics that enjoys more scientific legitimacy but cannot model the action of his God sufficiently. In that way, at least for Plantinga, his epistemology, applied to science, seems to provide the ultimate basis for his divine action theory.

⁹³I do not mean to imply by the use of this quote that Russell *does* believe that science ought to be the dictator; he does not. This quote highlights Plantinga's resistance to holding theological beliefs as hypotheses that may stand in need of adjustment.

CHAPTER 7

COMPARATIVE ANALYSIS

With the framework of their systems in place, we can now ask whether epistemology supplies more influence on Robert John Russell and Alvin Plantinga's differences in approaching special divine action (SDA) theory than does metaphysics. More specifically, we are now able to confront the question: does epistemology cause the divergence in the divine action theories of Russell and Plantinga? First, though, has it been shown that Russell and Plantinga share a similar enough theology and a similar enough philosophy of science in order to put so much weight upon their epistemology?

Theology

The first point to show is that they have a similar view of God's existence. Due to Russell not claiming any specific orthodoxy, his view had to be collected from various sections of his many articles. Some issues are not significant for this investigation, issues like God's omniscience, God's omnibenevolence, God's holiness, etc. Three attributes that do have bearing upon this dissertation are: God's aseity, God's omnipotence, and God's triunity. Each of those attributes will in turn offer enough support to infer that both Russell and Plantinga believe in a God who acts immanently, consistently, and perpetually. But perhaps the most important commonality between the two concerning God's being and action is that Jesus' resurrection was a historical event.

God: Being and Action

Both Russell and Plantinga believe in God's aseity. They make this claim in

numerous ways, primarily by stating that God depends on nothing and that everything in existence depends upon God.¹ In other words, God possesses the attribute of necessary existence resulting in transcendence whereas the remainder of reality possesses the attribute of contingent existence. Russell states in numerous works that the universe depends upon God for its initial existence and its sustained existence. This fact can best be shown through Russell's adherence to God having created *ex nihilo*; Plantinga too believes that God creates *ex nihilo* and exists necessarily. Thus, both Russell and Plantinga argue that God must exist *ase*.

The existence of God as triune goes a long way toward showing that God is relational which implies that God has personality and a will. Those properties are necessary for agency. If God possesses the necessary properties for agency, then it is logical to believe that God can act. Both Russell and Plantinga understand God to exist as a trinity.

Traditionally theologians have described two key modes of God's action. God acts in general providence and in special providence. General providence consists of creating the universe and sustaining the universe. Both Russell and Plantinga understand this general providence as the basis for believing in something like “natural laws”, which are best understood as natural regularities indicating God's faithfulness and trustworthiness. Special providence consists of God's specific acts such as revealing the Godhead through Scripture, calling and convicting individuals, and the work of the Holy Spirit. The consequence of this understanding is that God is perpetually acting in all events, at all times, and in all space.

The most significant commonality in Plantinga and Russell's understanding of

¹To claim a comprehensive aseity, I would have to discover Russell and Plantinga's understanding of God's relation to abstract objects and the ontological status of abstract objects. Since both of these thinkers are realists with respect to elementary particles and the like, I will neglect any discussion of abstract objects. Perhaps what I should claim for them is something like mere aseity which only considers tangible, existing objects.

God is that God acted within the material universe to resurrect Jesus of Nazareth. Since this event was historical, then it can function as empirical evidence for God's action in nature. Because of their agreement on this belief, we can appropriately highlight their agreement in God's modes of action. No doubts remain that in spite of their assured disagreement over some aspects of God, Russell and Plantinga believe in a God who acts, constantly and consistently.

Philosophy of Science

Two key features of the scientific disciplines affect SDA theory more than most others: what is a natural law and what is science? The second question concerns the demarcation problem and the methods of science as contrasted with theology. But before we address those two concepts, it is important to know that Russell and Plantinga hold a similar view of what science is actually *doing*. They believe that science reveals truths about the natural world, or at least what can be considered scientific facts that can be trusted. They both believe that science reveals the underlying work of God in nature. They are not instrumentalists, pragmatists, or anti-realists when it comes to scientific content. Instead, they believe that science reveals precisely how God acts in nature, both historically and in the present.

Natural Law

Both thinkers discuss the nature of natural law, and both of them come to the conclusion that natural laws are best understood as regularities of nature instead of prescriptive laws with an independent ontological status. Natural laws are also contingent, meaning that they could have been other than what they actually are. The significance of natural laws being understood as contingent and as regularities is that such an interpretation allows for viewing reality as ontologically indeterministic.

Ontological indeterminism became a viable interpretation of nature when classical Newtonian mechanics gave way to quantum mechanics as the fundamental

understanding of how the universe works. Neither thinker believes that Newtonian mechanics should be abandoned because of its power in predicting the macro phenomena of our sense experience, but they do both want to proclaim that Newtonian mechanics is inadequate as a theory of how nature functions on the subatomic scale and at speeds approaching the speed of light. Thus, quantum mechanics is understood as the reigning theory of what *actually is*. Both leave open the possibility of quantum mechanics eventually being displaced by some newer theory with more explanatory power and explanatory scope.

An extremely interesting commonality between these two thinkers is that they both go to great lengths to sever the Laplacean understanding of Newtonian mechanics from what Newtonian mechanics actually proposes. They believe that while God's noninterventionist action would be difficult to understand on the Laplacean picture, God's action might potentially fit with Newtonian mechanics, and fits very well with quantum mechanics. The reason SDA becomes comprehensible on a quantum understanding of nature is because the statistics modeling quantum mechanics are not for convenience of modeling, rather they are inherent to the system. This reality also fits well with understanding natural laws as regularities. If nature is ontologically indeterministic, then it is difficult to retain an understanding of natural laws as deterministic necessities.

Methodological Naturalism

Russell and Plantinga do not differ dramatically about the scientific method, generally, but they do disagree about the philosophical presuppositions of the scientific method. Russell believes that God cannot enter into any scientific explanation; to use God as an explanation would transform the theory from a scientific theory into a theological theory. Science, as a methodological, pragmatic consideration, does not refer to supernatural explanation though science can inspire certain supernatural theories or interpretations. In short, Russell ascribes to methodological naturalism within science for

procedural reasons. He believes that science must *always* function in the manner that Plantinga calls Duhemian science which excludes reference to God. Russell believes that the eyes of faith rather than the eyes of science are what allow for the recognition of God's work within the scientific description of nature.

Plantinga leaves no doubts that he has little tolerance for methodological naturalism. He does not think that any strong arguments exist for its incorporation into science. Though he utilizes many arguments against it, the argument most significant for this section is that Plantinga does not believe that science, by definition, must preclude supernatural explanations. He believes that the demarcation problem, the uncertain properties of science itself, and the weakness of simple appeals to definitions are not convincing arguments for methodological naturalism. The demarcation problem is the murkiness concerning when exactly one moves from science into other disciplines; Plantinga argues that there exist no necessary and sufficient conditions for marking a clear distinction. Russell might claim, however, that only naturalistic explanations are a part of those necessary and sufficient conditions. But Plantinga also suggests that there is not a clear set of properties for what can comprise a scientific theory. Some proposals would actually exclude much of what is currently considered to be science. For instance, repeatability would seem to exclude Big Bang cosmology and perhaps evolution. Russell settled on the introduction of supernaturalism as the demarcation between science and theology which is tantamount to appealing to a definition. Plantinga does not think that simply forcing a definition onto science solves the problem since that definition can always be considered arbitrary. Russell would rest upon the definition of science needing to be such that predictions capable of being falsified would need to be appropriate. It remains difficult to see how God, in any consistent way, could function within a theory of falsification. Moreover, the Russell believes that the inclusion of theological explanations into the sciences, at least in the natural sciences, would destroy any potential dialogue and interaction that the two disciplines might have.

This disagreement over the necessity of the role of methodological naturalism has strong implications for Russell and Plantinga's respective divine action theories. Those implications will be elaborated upon in the section on their actual theories differences, but for now it suffices to say that Russell and Plantinga will disagree on when Duhemian science ceases.

Epistemology

Russell and Plantinga possess similar beliefs concerning the warrant for theistic belief. They both believe that one does not need empirical evidence from science in order to believe, with warrant, the elements of faith. Russell notes, for instance, that his belief in a God who acts comes from Scripture, reason, tradition, and experience as opposed to scientific theories or divine action theories. Plantinga agrees with those sources of warrant and would most likely add the internal witness of the Holy Spirit to the list. Russell understands the Holy Spirit as the witness to the truth of the sources of warrant for theism, particularly Scripture.²

It is safe to categorize both Russell and Plantinga as foundationalists, but not as what Plantinga describes as a classical foundationalist. Russell argues that there exists a logical sequencing of epistemological approaches to discovering truth, from empiricism to pragmatism. I do not believe that Russell intends them to be competing theories, rather that he has in mind the notion that reality is often so complex that no single theory can fully handle the data. He calls this approach Critical Realism as it follows the system set forth by Ian Barbour.

Russell, however, does introduce a hierarchy; it is a hierarchy of epistemic emergence as it relates to various disciplines as opposed to a hierarchy of epistemological systems. That hierarchy is modeled in two dimensional space.³ The vertical axis contains

²Robert Russell, e-mail message to author, March 25, 2015.

³Russell follows Arthur Peacocke in this understanding of epistemic hierarchy. See Arthur

the disciplines studying the simplest realities at the bottom and as one progresses up the scale, one encounters disciplines studying more complex realities. Russell believes that physics should be at the bottom and theology at the top. The horizontal axis lists the phenomena being studied from simple to complex as one moves positively along the axis, with elementary particles near the zero and galaxies near the end. The vertical axis is significant in our analysis because while the upper level disciplines are irreducible to the lower levels, the lower levels apply constraints upon the upper levels. I do not mean to claim that Russell believes that one level is more factual or more true than any other, he clearly does not, but he does believe that the upper levels cannot contradict the findings of the lower levels. Thus, theology is left to wrestle with the data that the sciences provide.

Russell believes that for theology to progress as it relates to science, theology must risk being disconfirmed; theology must be held tentatively, just like scientific theories. He writes that “I want to emphasize, though, that this method allows for disconfirmation as well as confirmation . . . If we are willing to risk disconfirmation and enter into an ongoing interaction with science, we can move theology out of its closed hermeneutical circle and allow it to make cognitive contact with empirical knowledge.”⁴ If a lower level discipline puts a constraint upon one's theology that is irreconcilable with that theology, then the theology may need to be revised. We see here the major difference between Plantinga and Russell because Plantinga's set of revisable theological beliefs will contain less elements than Russell's.

The consequence of this view is that theology can interact with science, but only as a guide. This is a monumental move in its own right since it is such a minority

Peacocke, *Theology for a Scientific Age: Being and Becoming-Natural, Divine, and Human* (Minneapolis: Fortress Publishers, 1993), 217.

⁴Robert John Russell, “Religion and the Theories of Science,” *Zygon* 31 (1996): 37.

concept within the divine action community. Within Russell's model of Creative Mutual Interaction, theology can move science in three ways. Theology can provide the philosophical presuppositions necessary for science to remain coherent and to proceed, theology can act to inspire new scientific theories, and theology can provide “selection rules” or criteria for choosing particular scientific theories, at least in physics. This last path is pivotal for our discussion because it is precisely the path that Plantinga takes. Russell offers an example for this path, writing that “for example, according to theological anthropology, humankind bears the *imago dei* which includes libertarian free will ... thus we might prefer quantum mechanics to classical mechanics since the former is compatible with an indeterministic interpretation.”⁵ Notice, however, that God is not incorporated into science as an explanation, rather one's understanding of God can influence a particular research program so that some scientific theories might be preferred over others. But that criteria cannot violate the scientific enterprise since science precludes the supernatural and puts constraints on the data with which theology can work.

Plantinga would most likely endorse Russell's path from theology to science that claims that theology can function as criteria for choosing among competing theories in science. The reason that Plantinga believes such a path exists is because his belief in God is properly basic. Since his beliefs about God's nature are derived from properly basic beliefs, then they also possess warrant. They possess more warrant, perhaps, than scientific findings which are themselves based upon basic beliefs like memory, perception, testimony, induction, and epistemic probability. Even though they are both formed on the basis of basic beliefs, it would seem that theological truths rest closer to the center of Plantinga's noetic structure than some aspects of the sciences, in this case which interpretation of quantum collapse theory should be used to model divine action.

⁵Robert John Russell, *Cosmology: From Alpha to Omega* (Minneapolis: Fortress Press, 2008), Kindle, loc. 5540.

The key to Plantinga's epistemology is proper function. Stated fully, a belief is warranted if it is formed by an individual functioning properly in a congenial epistemic environment according to a design plan aimed at producing true beliefs. That understanding of epistemology coupled with commonsense realism is why Plantinga trusts his senses and holds the sciences in such high regard. But he is clear that his theology comes first. He does not hold it dogmatically, rather he holds it on the basis of the internal witness of the Holy Spirit.

Plantinga offers a telling example from the history of cosmology. He notes that cosmological theories have changed from a finite universe, to an eternal universe, to a steady state universe, to a finite universe beginning in the Big Bag, and now back to an eternal universe through the multiverse or some other theory. Plantinga wonders what the theist ought to do as these theories continuously change: should one's theology change accordingly? Plantinga strongly discourages one from wavering theologically, writing that “the sensible religious believer is not obliged to trim her sails to the current scientific breeze on this topic, revising her belief on the topic every time science changes its mind; if the most satisfactory Christian ... theology endorses the idea that the universe did indeed have beginning, the believer has a perfect right to accept that thought.”⁶ In comparison to Russell's epistemic scheme, if those cosmologies are lower on the vertical axis, then they would be binding upon theology. If there were competing theories, then one could use theology as a guide just as Plantinga does. But what if one of those beliefs was broadly agreed upon within the scientific community? Then there would presumably be a constraint upon one's theology such that the theology would need to be revised.

It can be concluded then, that Plantinga's epistemology allows for theological beliefs to be more warranted than some scientific beliefs, so much so that theological

⁶Alvin Plantinga, *Where the Conflict Really Lies* (New York: Oxford University Press, 2011), 395.

beliefs ought to assist in deciding which scientific theories are warranted when empirically equal and logically valid theories are available. Russell's epistemology would not allow such a scenario but he does believe that in the case of competing scientific theories, theology can act as a guide or a set of rules concerning which theory to choose. Now we turn to their actual theories and why they diverge.

QM-NIODA as SDA

Russell and Plantinga take the same path toward quantum mechanics for their divine action theories. They reject classical mechanics and see quantum mechanics as offering ontological indeterminism. Plantinga does not care if God intervenes, but nevertheless chooses a non-interventionist theory while Russell seeks to find a third possibility between noninterventionist subjectivism and interventionist objectivism, and so he must choose a non-interventionist theory. They both see bottom-up theories as foundational to the divine action enterprise. Quantum mechanics offers both ontological indeterminism and a bottom-up approach, so both Plantinga and Russell think that it is the most likely place to locate God's action. Even after they enter the quantum realm, they both think that collapse theories offer the most coherent understanding of God's action. But, at the final decision of which collapse theory to choose, Russell opts for the Copenhagen interpretation while Plantinga follows the Ghirardi-Rimini-Weber (GRW) spontaneous collapse theory. Our goal is to examine what effect epistemology has on that final decision.

Since Russell and Plantinga hold similar views about God in general, namely *that* God does act, and they hold similar views about philosophy of science, it can be concluded that epistemology provides the strongest impetus for their diversion. I am *not* claiming that it is the only reason they diverge, but I *am* claiming that it is the primary reason that they diverge. Their differences on God's being allowed to intervene does not come into play because Plantinga chooses a non-interventionist theory. They differ on

methodological naturalism, but as Plantinga showed, the choice of methodological naturalism is an epistemic choice. What influence does their view of methodological naturalism have on their choice of divine action theory?

Plantinga does not believe that methodological naturalism is a legitimate restraint on scientific disciplines. Thus, he has no problems incorporating God as an explanation within a scientific theory. Russell argues that if God is used as an explanation, then one is not doing science anymore, but one can utilize theology within certain aspects of science. They both, therefore, allow their theology to influence their science, albeit in different ways: as a scientific explanation for Plantinga and as a scientific influence or guide for Russell.

But methodological naturalism is only part of the story. The key differences arise in what these thinkers are trying to maximize in their choice of divine action theory. Until they reach the point of choosing a collapse theory, they are seeking to maximize universal beliefs, which is why they agree. But once they choose a collapse theory, their priorities shift. Once they enter the collapse theory realm, they encounter a number of theories that are empirically equal and mathematically valid. Plantinga seeks to maximize his understanding of God which results in his choosing whichever theory poses the least number of problems for his conception of Christian theism. Russell seeks to maximize both his understanding of God and his understanding of scientific truth which results in his choosing the theory that fits best with his theism and fits best with the scientific consensus, that is, Russell seeks to integrate the two disciplines.

Since Plantinga is maximizing his belief in God, he seeks the scientific theory most compatible with his theology in spite of what the scientific community might have to say about it. Whether GRW theory is contrived or not makes no difference to Plantinga. The critique about lingering Schrödinger cat “tails” is even weaker because God is the solution to it which is exactly what Plantinga wants to maximize. Because his theology is properly basic for him, it takes precedence over any scientific theory which

may contradict it. Scientific theories possess their warrant only insofar as they appeal to basic beliefs such as memory belief, perceptual belief, inductive belief, testimonial belief, and epistemic probability. Thus, scientific theories receive their warrant by way of warrant transfer. Such a move very seriously risks negating the empirical evidence upon which the sciences so heavily rely. In that way, Plantinga risks severing a robust philosophical epistemology from engaging in the theology/science dialogue. Since the basic beliefs upon which scientific theories are derived are formed in the same way as Plantinga's theistic beliefs, that is in the properly basic way, then it would seem that Plantinga's theistic beliefs will always possess more warrant for him than a scientific theory. It is Plantinga's understanding of warrant that prompts him to seek out that collapse theory that fits best with his view of God.

Since Russell is attempting to maximize both his theology and his understanding of science, he picks the theory that suits both disciplines in order to take scientific knowledge, presently understood, seriously, though his theology takes precedence. The scientific theory is warranted by the empirical data and majority opinion. Russell believes that his analysis of measurement as irreversible reactions is enough to free God from any episodic action. His scientific theory does not suffer from the contrivance problem that Plantinga's does which is a priority for Russell. GRW theory is not an option for him because it lacks sufficient scientific warrant.⁷ Since physics is more epistemologically fundamental for Russell, the acceptance of the Copenhagen interpretation puts various constraints on his theology that Plantinga denies.

Another way to look at this scenario is to consider where Duhemian science ends for these two thinkers and where, if at all, Augustinian science begins. They both

⁷Russell believes the scientific consensus against GRW theory to be persuasive, but he is unwilling to reject it comprehensively. He believes that the proper approach to engaging quantum theories is to simply adopt one and to work out its consequences as if it were correct. What would be the ontological implications for nature at the subatomic level? Robert Russell, e-mail message to author, March 25, 2015.

seem to believe that primarily Duhemian science can get one to quantum mechanics and perhaps even to quantum collapse theories. I say primarily because there exists some Augustinian science in the area which seeks a scientific theory that can be interpreted as ontologically indeterministic. However, since quantum theory has shown itself to be the best theory available, one does not need theological considerations when opting for quantum mechanics over classical mechanics. The fact that quantum mechanics lends itself readily to God's action may increase its warrant, but Augustinian science does not seem necessary to posit quantum mechanics. Within the collapse theory options, Plantinga switches entirely to Augustinian science, or a narrow understanding of Russell's third theology to science path. He actively seeks that quantum collapse theory which offers the least resistance to his view of God because on Augustinian science, metaphysical beliefs become legitimate considerations within the scientific data set. Russell continues with Duhemian science since quantum mechanics, in general, fits with his view of God. Instead of seeking that theory that offers the least resistance to God, Russell seeks that theory that offers the most promise for the integration of science and theology. He finds that integrating theory to be the Copenhagen interpretation of quantum mechanics. In that way, he can retain interaction between science and theology. On Plantinga's approach, there may not be much room for continued interaction.

Conclusion

It has been reasonably shown in this dissertation that the primary reason for the divergence between Russell and Plantinga concerning which collapse theory to utilize in modeling divine action arises because of their differences in epistemology. They have similar theories of warrant for theological belief, but they differ on what produces warrant for a scientific belief. Plantinga believes that scientific theories receive more warrant if they are compatible with his theology while Russell believes that scientific theories receive warrant only within the scheme of methodological naturalism. Russell,

however, notes that there exists at least one exception to his rule: if there are equally competing theories then theology can cast the deciding vote, or at least act as a guide to the most viable scientific theory. That view fits well with his epistemic hierarchy which maintains that the natural sciences put constraints on the theologian's options. Russell believes that some aspects of one's theology should be revised if science constrains it in such a way. Russell believes that the Copenhagen interpretation is reconcilable with his current theological understanding, and the Copenhagen interpretation possesses a great deal of scientific warrant.

Plantinga experiences no hesitation in letting his theology determine his scientific theory, at least when there are competing, equally empirical, mathematically valid theories. He is a foundationalist like Russell, but Plantinga's epistemology, specifically his theory of warrant, entails that theological beliefs constrain scientific understandings, or, at a minimum, can be warranted to do so. Scientific beliefs are not formed in the basic way, rather they are formed on the basis of beliefs that are themselves properly basic. Theological beliefs, at least some of them, are formed in the basic way. Thus, many theological beliefs rest on a lower, that is, a more basic, foundation than scientific beliefs. Because of the proper basicity of theological beliefs, science may need to be revised when it is incompatible with theology. Plantinga chooses the Ghirardi-Rimini-Weber spontaneous collapse theory because it is readily compatible with his theology and in spite of its being rejected by a majority of the scientific community.

Because of these thinkers' opposite epistemic hierarchies, they diverge when choosing which collapse theory best models divine action. Metaphysics certainly plays a role in the grounding of science and in the interpretations of God and science, but epistemology plays a far greater role in deciding how one proceeds in modeling divine action. Which sets of beliefs are most basic, which beliefs constrain other beliefs, and which epistemological assumptions in scientific methodology produces truth, each set boundaries for which metaphysical theories are even considered to model divine action.

CHAPTER 8

CONCLUSION

This dissertation has shown that epistemology guides one's method of developing a divine action theory more than metaphysics, at least in the case of Robert John Russell and Alvin Plantinga. Surely a sample size of two thinkers is too small to truly claim that metaphysics supervenes entirely on epistemology with respect to divine action methodology. But perhaps the analysis of these two thinkers is enough to make the tentative claim that epistemology functions as the greatest contributing factor to divine action methodology. It does not influence divine action theory so much more than metaphysics that metaphysics is irrelevant, far from it. But it does set the edges for how one does his or her metaphysics with respect to divine action theory. For example, if one adheres to methodological naturalism, then that one is not at liberty, generally, to introduce any theological understandings into the scientific enterprise. If one goes a step further in positing Duhemian science, then metaphysics is rejected completely, or at least non-universalizable metaphysics is rejected completely, whether those metaphysics be supernatural or not. But again, one's epistemology will seemingly dictate which sorts of beliefs are universalizable.

There are, however, problems with this thesis. Why is it that two individuals with similar epistemologies, like Polkinghorne and Russell for instance, disagree over whether to incorporate quantum theory or not? They both believe that indeterminism must be ontologically real in order for divine action to proceed, but Polkinghorne believes that chaos theory can grant him that truth. Russell argues, as it was shown in this work, that chaos theory is entirely deterministic so that no ontological indeterminism can be understood from its principles and equations. It is certainly epistemology that

influences Russell to understand chaos theory as deterministic, but is it some epistemological truth that allows Polkinghorne to understand chaos theory as ontologically indeterministic?

Are issues like the causal closure of the universe, the ontological status of natural laws, and ontological determinism within nature really dependent upon one's epistemology or are they truths that are decided in advance on some other basis? How would one even show that they are epistemologically determined, assuming that they are epistemologically determined? Are we actually stuck in the same question that has been unavoidable since the rise of Western philosophy: one or the other, epistemology or metaphysics, must be assumed before one progresses philosophically at all? Maybe it is simply the case that epistemology has not yet been considered with the same volume as metaphysics so that there is insufficient data to determine this relationship? Or, maybe epistemology and metaphysics are too broad of categories to do any significant analysis other than two thinkers at a time?

Perhaps what should be argued from this work is something less than the notion that epistemology has the greatest effect on one's divine action theory. Epistemology has been shown to be the overriding factor between Russell and Plantinga, but that view should not be extrapolated to all other divine action theories. Instead, perhaps we can simply conclude that epistemology has not been given its proper due within the divine action debates. Metaphysics is clearly important to the process, but epistemology is just as important, maybe even more so. One must always be sure that one is not unnecessarily eliminating viable candidates for divine action theory or accepting irrational candidates for divine action theory on the basis of subconscious epistemological commitments before the metaphysics even gets started.

Why Study Divine Action?

Now that the dissertation comes to a close, I want to offer some comments

about the project of studying divine action. As mentioned in the “Introduction,” Christians believe in a personal God who is constantly at work in the material universe. Therefore, adherents of the faith ought to seek to understand as much as possible how that action ensues. The question then becomes to what extent one can know how God works?

If science produces a true description of the way nature operates, then one can be sure that God works in that way. As Russell has posited, science merely gives a physical description of what God is doing. If that scenario obtains, then whatever truth science produces will be invaluable to the Christian because it will demonstrate how God works. But a problem arises in that science is fluid. It is not a difficulty that science progresses, but it is a difficulty if one claims to *know* how God acts based on the best science has to offer in one moment only to have that scientific description in place. In other words, knowing how God acts will also be fluid resulting in the fact that one never actually knows how God acts.

For that reason, I suggest that the Christian utilize divine action theory for philosophical theological purposes in both an offensive and defensive capacity. I use these terms loosely and only as broad designations that set the focus for each approach rather than as the understanding that the thinker *only* engages divine action on those terms. As for the former, the philosophical theologian working defensively seeks to defend and expound the coherence of faith. The Bible teaches that God acts, therefore, the philosophical theologian is obliged to articulate a coherent, possible, and hopefully plausible theory about how that action occurs within the material universe. An attitude inclined more towards that of Plantinga serves this purpose well. I do not mean to imply that Russell does something other than articulate a coherent, possible, and plausible theory of God’s action, rather I am arguing that it is less important for the defensive philosophical theologian to meet the preferred consensus of the scientific community than to maintain the largest set of nonrevisable theological beliefs while proposing a

theory of divine action. If the science, in principle, is subject to change, then meeting the standards of science carries little weight for the defensive philosophical theological task. The philosopher and theologian should not go out of his or her way to ignore what science has to say about the way nature works, but the considerations of science are tangential rather than primary. The philosopher and theologian should be more concerned with meeting the conditions of the nonrevisable communally agreed upon attributes of God than meeting the agreed upon truth of science.

Thomas V. Morris' work on the dual natures of Jesus provides a good example of this approach. Morris writes that "the divine mind of God the Son contained, but was not contained by, his earthly mind, or range of consciousness. That is to say, there was what can be called an asymmetric accessing relation between the two minds."¹ He utilizes thought exercises like time-locked rooms and neurological understandings of dreams to defend both the coherence of the Incarnation and the possibility of it working according to his model. Morris uses some aspects of the sciences but his goal is not to integrate science and theology. His goal, instead, is to defend the coherence of one element of the nonrevisable theological set: the Incarnation of the second person of the Trinity.

If the defensive task is held too strictly or if it is the only approach offered by the theological community, then the theological community runs the very real risk of isolating itself from the broader set of disciplines. Russell's mentality allows the theologian to flourish in this regard because he is doing offensive philosophical theology. The goal in this approach would be to progress with the sciences as opposed to defending some set of beliefs in isolation. The communally agreed upon set of nonrevisable theological beliefs will be smaller in this approach. This mentality is characterized by Russell's desire to integrate science with faith by having their foundational truths,

¹Thomas V. Morris, *The Logic of God Incarnate* (Eugene, OR: Wipf and Stock Publishers, 2001), 103.

developed in isolation, meet in the middle of the bridge between the two, having them intimately engage one another in profound ways. The goal is to build a positive system taking seriously the strongly held beliefs of both disciplines.

An example of this approach, other than Russell, is the BioLogos movement. The BioLogos group takes the set of evolutionary propositions as true and understands it as the way God has brought about the diversity of biological life on Earth. BioLogos believes, “The science of evolution is the best description for how God brought about the diversity of life on Earth. But while we accept the scientific evidence for evolution BioLogos emphatically rejects Evolutionism.”² The scientific understanding of evolution is adopted and the theology of God’s providence in creating the diversity of life is understood through it. Elements like the historical resurrection of Jesus, theism, and God’s action within the material universe are part of the communally agreed upon nonrevisable set of beliefs, while other beliefs such as a 7-day creation, a 10,000 year old Earth, and even God’s creation of “kinds” of life are revisable. Like Russell, BioLogos is clear that science itself must remain neutral on the question of God, but that those within the faith should utilize the best that science has to offer when seeking to understand God.

In the end, unless one knows with certainty that some scientific description of the universe is true, then one cannot know how God acts in nature. In that way, the duty of the philosophical theologian is to offer a coherent model of how God’s action could *possibly* ensue. Nevertheless, because each generation must deal with God’s general revelation to the extent God has revealed it, the philosophical theologian ought to engage the best that science has to offer in order to understand how God works in nature.

Epistemology certainly affects which approach one chooses, or at least which approach might take precedence. If one has an epistemology very similar to Plantinga’s,

²“How is BioLogos different from Evolutionism, Intelligent Design, and Creationism?” accessed April 17, 2015, <http://biologos.org/questions/biologos-id-creationism>.

then the approach of the small set of nonrevisable beliefs might be important, but the premier obligation of the philosophical theologian will be to defend the largest set of communally agreed upon nonrevisable beliefs as possible. If one has an epistemology similar to that of Russell where the sciences put certain constraints on what can be in the communally agreed upon nonrevisable beliefs, then one will opt to focus more attention on utilizing the sciences, extensively and strictly, in working out one's theology. Both approaches are needed but one needs to be clear what his or her approach is. If one does not establish that they are defending the largest possible communally agreed upon nonrevisable set of beliefs, then one runs the risk of severing all dialogue and engagement with the broader scientific community. If one does not clearly establish that they are shrinking the set of nonrevisable beliefs and are seeking to take scientific knowledge seriously, then one runs the risk of pushing those with larger nonrevisable sets of belief out of any significant discussion. I thank God for giving the Christianity two great, faithful thinkers like Russell and Plantinga to pursue both of these ends.

Further Research

Further research that could be done in this area would be to produce the same analysis between other scientists, theologians, and philosophers. The metaphysics and epistemology could be compared within each discipline and then across disciplines to see if there is any significant relationship between epistemology and divine action theory assuming that the metaphysics are similar. One could use Russell's typology of divine action theory to provide sufficient categories to examine if epistemologies vary between categories themselves while the metaphysics remain relatively similar. One could also do the same analysis within each category, as was done in this work, to examine variation within each classification. Finally, one could develop a different classification for divine action theory than what is normally promulgated. One could group thinkers by their epistemology and attempt to discern their subsequent divine action theories.

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ABSTRACT

A COMPARATIVE ANALYSIS OF DIVINE ACTION METHODOLOGIES IN THE WORKS OF ROBERT JOHN RUSSELL AND ALVIN PLANTINGA

John Paul Wilkinson, Ph.D.
The Southern Baptist Theological Seminary, 2015
Chair: Theodore James Cabal

This dissertation explores the relationship of epistemology to special divine action theory. Chapter 1 sets the goals, parameters, and outline of the research program. Attention is given to why Robert John Russell and Alvin Plantinga were ideal candidates for this analysis. Chapter 2 gives a brief biography of each thinker.

Chapter 3 highlights those theological beliefs common to Russell and Plantinga which have a direct relationship to divine action theory. Each scholar's view of God's aseity, God's general action, and God's specific action in the historical resurrection of Jesus of Nazareth is presented.

Chapter 4 describes each scholar's philosophy of science. Their understanding of natural law, Newtonian and quantum mechanics, methodological naturalism, interventionism, and the general relationship of theology to science are presented.

Chapter 5 demonstrates the general epistemology of each thinker with special emphasis given to whether theological beliefs constrain scientific beliefs or if scientific beliefs constrain theological beliefs. This chapter also describes each thinker's understanding of basic beliefs and how they relate to theology and science.

Chapter 6 sets forth the divine action theory of Russell and Plantinga. Included in the chapter are their reasoning for locating divine action in quantum theory and their responses to various problems with their models. John Saunders provides the critique for

both Russell and Plantinga.

Chapter 7 is the comparative analysis between Russell and Plantinga. After showing that they have a similar theology and philosophy of science, the chapter presents their epistemological decisions which directly affect their divine action theory.

Chapter 8 is a brief conclusion of the work with suggestions for further research. The research demonstrates that because of Russell's epistemological understanding of science constraining theology and Plantinga's understanding of theology constraining science derived from their understanding of basic beliefs, methodological naturalism, and their goal for the science/theology relationship, they diverged when choosing which particular quantum collapse theory to follow.

VITA

John Paul Wilkinson

EDUCATION

B.S., University of South Carolina, 2006

M.Div., Southern Baptist Theological Seminary, 2010

Th.M., Southern Baptist Theological Seminary, 2011

PUBLICATIONS

“Hydrogenation of 3,4-epoxy-1-butene Over Cu-Pd/SiO₂ Catalysts Prepared by Electroless Depositions.” *Catalysis Today* 123 (2007): 142-50.

