

An Engagement with John Polkinghorne
And His Unity of Knowledge

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Introduction

The “unity of knowledge” is a concept that John Polkinghorne occasionally mentions. Tucked away within the updated 2007 Preface to his book *One World*, he writes: “I am a very passionate believer in the **unity of knowledge**. (Emphasis added.) *One World* is based on this conviction, whose truth I believe to be guaranteed by the unity of the one true God, the Creator of all reality.”¹ All of Polkinghorne’s works, either by inference or implication, track this fundamental conviction, yet he never substantially develops the concept. The question posed, is why? If all humans are subject to the same reality, the question is whether the rules that govern the function of such reality can bring all humans together.

Polkinghorne claims to seek a rational inquiry of theology that is bold enough to construct a metaphysical scheme.² Even beyond this, Polkinghorne strongly advocates for intelligible theology and praises the courage it takes to set forth with clarity a new, different layer of human experience that has not yet proven itself within the intellectual conversation of many theologians:

The chosen initial point of view must be open to correction in the light of further experience, but it cannot be dispensed with and this introduces an element of circularity into the quest for understanding.

...I do not think we have any choice, either in science or theology, about adopting a strategy that calls for a careful act of intellectual daring. We have to stick our necks out if we are to be able to see anything. ...This does... not lead...to intellectual despair, for... our minds are so constituted, and we live in a world itself so constituted, that intellectual

¹ John Polkinghorne, *One World: The Interaction of Science and Theology* (West Conshohocken, PA: Templeton Foundation Press, 1986), xiii.

² John Polkinghorne, *Reason and Reality: The Relationship Between Science and Theology* (London, Great Britain: SPCK, 1991), 11.

daring in the pursuit of a strategy of cautious circularity proves capable of yielding reliable knowledge.³

For Polkinghorne, belief sounds in nature as actually experienced, and thus is experienced similarly by all people. It is the understanding of nature that leads to a connection with a transcendent Other as the organizer and Creator of the Universe.

This essay engages with John C. Polkinghorne, a renown British quantum physicist who became an Episcopal priest and grew to assert that theology must take science seriously. Chapters 1, 2, and 3 articulate a basic understanding of Polkinghorne and contextualize his views within the theological discussion of his time. Specifically, Chapter 1 examines his theological concepts of truth through science. Chapter 2 looks to Polkinghorne's quest for truth through God and natural theology and considers the influence of his contemporaries Karl Heim, Ian Barbour, and Arthur Peacocke. Chapter 3 considers how Polkinghorne sought to integrate these two areas of study within what he terms "consonance" and notes opposing positions of Karl Barth and other postmodern theologians. Chapter 4 separates Polkinghorne's view of prayer, religious experience, and miracles for specific discussion. Chapter 5 critically assesses Polkinghorne from the student's perspective. To conclude, this essay returns to its initial question of Polkinghorne's passionate belief in the "unity of knowledge," and whether this belief could have provided the synthesis for his works, and if so, why did he not take this path.

³John Polkinghorne, *Scientists as Theologians: A Comparison of the Writings of Ian Barbour, Arthur Peacocke and John Polkinghorne*, (London, England: SPCK, 1996), 15-16.

Chapter 1

Polkinghorne and His Quest for Truth through Science

1.0 Introduction

To establish an initial understanding of Polkinghorne, Chapter One considers Polkinghorne as a scientist. First considered is Polkinghorne as ‘critical realist,’ the term he uses to describe himself. Then, he is considered within his greatest love, science, and why the scientific method is a fundamental part of his work. Third, his views are applied to the physical world. To complete this understanding of Polkinghorne as a scientist, his self-described “bottom-up” thinking, and its expansion to include “top-down” thinking, is examined. For Polkinghorne, this systematic thinking is a metaphor of how God interacts with humans, that is from both the bottom-up as exemplified by prayer and the top-down as in God’s intervention.

Chapter Two takes another step toward understanding Polkinghorne and considers him as a theologian.

1.1 Polkinghorne as “critical realist”

Within his effort to present traditional religious values while embracing contemporary scientific discoveries⁴, Polkinghorne defines himself as a “critical realist.”⁵ In his book *One World*, written in 1986, he uses the word “critical” to mean his method of inquiry in both areas of science and theology. Within “critical,” he includes the subtle meaning of judgment, or a course

⁴ James F. Moore, “How Religious Tradition Survives in the World of Science: John Polkinghorne and Norbert Samuelson” *Zygon*, vol. 32, no.1 (March 1997): 122.

⁵ Polkinghorne, *One World*, ix.

of subtle interpretation that intertwines with “experience and interpretation.”⁶ “Realist” means the method of inquiry that has the “character of a process of discovery, rather than human construction.”⁷ In his later work, *Scientists as Theologians*, written 10 years after *One World*, Polkinghorne writes, “The rooting of knowledge in interpreted experience treated as a reliable guide to the nature of reality is an intellectual commitment that we may call ‘realism’.”⁸ He succinctly calls it “a conformity with the way things are.”⁹ Ultimately, this position leads Polkinghorne to a firm commitment to what he calls “bottom-up” thinking, addressed later herein.

Through science he seeks to describe our world and moves from scientific truth to his belief in God through a process of logic and natural theology. To Polkinghorne, “any metaphysical world view that did not seek to take reality on reality’s terms ...[is] unacceptable.”¹⁰ He writes that the word “critical” is meant to denote a form of delicate, meaningful, experience and interpretation while “realism” is meant to denote “a process of discovery, rather than something of human construction.”¹¹ Again, Polkinghorne echoes these

⁶ Polkinghorne, *One World*, x.

⁷ Polkinghorne, *One World*, x.

⁸ Polkinghorne, *Scientists as Theologians*, 14.

⁹ Polkinghorne, *Scientists as Theologians*, 4.

¹⁰ John Polkinghorne, *Exploring Reality: The Intertwining of Science and Religion* (New Haven, CN: Yale University Press, 2005), 6.

¹¹ Polkinghorne, *One World*, x.

thoughts: “Those who commit themselves to this trust in a rational cosmos are asserting intelligibility to be the key to reality.”¹²

Ian Markham has defined “critical realism” as affirming the existence of objects, and takes this concept further to include three related criteria: (1) World perspectives are attempts to make sense of reality as experienced; (2) Reality is the ultimate control concerning the legitimacy of truth claims; and, (3) Certain world perspectives are better than the alternatives.¹³ Polkinghorne meets all three of these criteria: (1) He writes for the “variety of the world and our experience of it;”¹⁴ (2) He looks to science as the prime evidence for the repeated convergence of physical theory upon agreed solution; and, (3) He finds there are few reasons to suppose reality offers alternative interpretations of schemes.¹⁵ Polkinghorne concludes,

Provided our concept of the rational is wide enough to comprehend the actual discourse of human reason, it is possible to adopt a position intermediate between the propositional cognitive and cultural-linguist views of theology. One might call it the critically realist view.¹⁶

1.2 The faith of scientists and Polkinghorne as scientist

The discipline of science requires the leap of faith that the Universe, although vast and complex, functions by physical laws that are discernable and consistent.¹⁷ The coherence of an

¹² Polkinghorne, *Reason and Reality*, 11.

¹³ Ian S. Markham, *Truth and the Reality of God: An Essay in Natural Theology* (Edinburgh, Scotland: T & T Clark, 1998), 49.

¹⁴ Polkinghorne, *One World*, 8.

¹⁵ Polkinghorne, *Reason and Reality*, 8.

¹⁶ Polkinghorne, *Reason and Reality*, 11, 14.

¹⁷ Polkinghorne, *One World*, 56.

intelligible universe implies that events within the universe make sense and that intelligibility assumes an overall coherence. It is an essential condition for truth.¹⁸ As Polkinghorne put it, “...even mathematics requires an act of commitment as to its ultimate consistency.”¹⁹

Polkinghorne’s concept of natural law begins with understanding what the senses teach. He writes that the scientific method observes data, and then synthesizes data into physical laws and theories. Once an event or thing is understood, then ethicists can assert their insight in discerning moral tenants. Although natural law continues to represent the universe as God created it, the scientific method reveals the universe as it is, not as we would have it. It supports theological efforts to develop ethics of good and evil based on reality as we know it.²⁰

Polkinghorne accepts the scientific leap of faith that the universe works by consistent physical laws. While many of these laws are still a mystery, he assumes that all are discoverable and understandable as exemplified in his discussion of the anthropic principle, addressed later herein. Within this construct of consistent physical laws, he finds one true God, the Creator of our one reality, whose truth offers a unity of knowledge to the world.²¹

1.3 Polkinghorne’s understanding of the physical world

Polkinghorne derides the assumption that anything not strictly scientific, wholly objective, and measurable is merely someone’s opinion.²² He traces this faulty presumption

¹⁸ Markham, *Truth and the Reality of God*, 90-91.

¹⁹ Polkinghorne, *Reason and Reality*, 6.

²⁰ Polkinghorne, *One World*, xv.

²¹ Polkinghorne, *One World*, xiii.

²² Polkinghorne, *One World*, 8.

from the French Enlightenment's dogmatic belief that science and objectivity was the bastion of truth. However, for Polkinghorne there exists a relationship between science and theology, interwoven in subtle ways.²³ Polkinghorne does not reach for the all answers, and but with measured discipline seeks to increase his knowledge of the universe. Polkinghorne describes it as "a tightening grasp of a never completely comprehended reality."²⁴

Polkinghorne describes the physical world and the science that seeks its understanding as having ten general characteristics, considered separately below. Some years later, he added an eleventh—reasonableness.

a. Elusive: Within the quantum world where Polkinghorne worked as a scientist, the question remains, "What reality is to be assigned to such a quantum world?"²⁵ Polkinghorne assumes that most people have difficulty understanding the quantum world, and thus he explains that this world does not give us things that we can hold, but instead only abstract descriptions from which other things are built. It is a world of possibilities.²⁶ To Polkinghorne, the quantum world is elusive, subtle, and wholly different from our understanding of the world that we can see and hold.²⁷

²³ Polkinghorne, *One World*, 8, 9, 14.

²⁴ Polkinghorne, *One World*, 22, 30.

²⁵ Polkinghorne, *One World*, 53.

²⁶ Polkinghorne, *One World*, 53-4.

²⁷ Polkinghorne, *One World*, 54.

b. Intelligible: Polkinghorne asserts that science depends on being intelligible. For him mathematics is the key to discovery of the physical universe²⁸ and the language of the cosmos.²⁹ Note, however, that the fundamental intelligibility of the universe is an assumption and an act of faith itself.³⁰ Like theology, science assumes order in the cosmos.

c. Problematic: Polkinghorne points out that conflicting views and differing interpretations of the world are particularly strenuous in quantum physics where scientists cannot see, touch, or have direct knowledge of the quantum world. The same issues apply to the astronomical world of the cosmos, in which learning of our world is a process that scientists participate in over time.³¹ By metaphor, Polkinghorne compares this argument to differing interpretations within theology.

d. Surprising: Be prepared for possibilities, for understanding the world is full of surprises.³²

e. Chance and necessity: Whether a result of hidden variables or chance and necessity within a complex system of evolution, “Without chance there would be no change and

²⁸ Polkinghorne, *One World*, 55.

²⁹ Polkinghorne, *One World*, 56.

³⁰ Polkinghorne, *One World*, 56.

³¹ Polkinghorne, *One World*, 59-60.

³² Polkinghorne, *One World*, 60.

development; without necessity there would be no preservation and selection. They are the yin and yang of evolution.”³³

f. The vastness of the universe: With the knowledge of current astronomy, Polkinghorne notes, “...there is something specially chilling in the thought of the immensity of the world disclosed to twentieth-century science. Can there really be any significance attached to the lives of inhabitants of a speck of cosmic dust?”³⁴ With theology we seek the meaning of our existence. As Polkinghorne himself cites, “All things were made through him, and without him was not anything made that was made.” John 1:3.

g. Tightly knit: The cosmic explosion of the Big Bang gifted to the cosmos systems as complex and as interesting as humans themselves. This explosion was hot enough to fill the entire cosmos with a sustained nuclear reaction for an estimated three minutes.³⁵ Now called the anthropic principle, these three gifted minutes produced a tightly knit world of highly particular characteristics that allowed for the evolution of life. Polkinghorne believes these were three divine minutes constructed to form an evolving cosmos that in turn provided for the evolution of life and ultimately of humans.³⁶

h. Futility (or our collective fate): Polkinghorne considers the cosmological end of our universe, with human life extinguished, the earth itself gone, and the entire cosmos

³³ Polkinghorne, *One World*, 61.

³⁴ Polkinghorne, *One World*, 66.

³⁵ Polkinghorne, *One World*, 67.

³⁶ Polkinghorne, *One World*, 70.

uninhabitable. Polkinghorne adopts the position that all will likely return to its original, singular point of explosion.³⁷

Polkinghorne's natural theology reaches beyond this scientific position to accept the ultimate reincarnation and transcendence of Christ. He grapples with this notion of human's ultimate futility by quoting theologian John Macquarie, who mourns that such an all-enveloping death would abolish Christian hope.³⁸ Even Polkinghorne wonders if this is the demise of God. Apparently not wanting to reach beyond science into revelation of a cosmic end, Polkinghorne does not write of this predicted demise as the coming of Salvation or of God, and he avoids asking if science has now discovered the true meaning of Revelation. Within his works, he does not consider whether through the death of the cosmos eternal life is established. This Christian vision is omitted, possibly because it is a question not susceptible to scientific analysis. However, Polkinghorne is clear that he believes in the ultimate love of our creator and the reincarnation and transcendence of Christ as the basis of human hope.³⁹

i. and j. Complete and Incomplete: Polkinghorne considers these two criteria together and observes that science has begun to unravel the physical world, calling it "the greatest cultural achievement of our century."⁴⁰ He stands in awe of all that such knowledge brings: "One of the fundamental experiences of the scientific life is that of wonder at the

³⁷ Polkinghorne, *One World*, 70-1.

³⁸ Polkinghorne, *One World*, 71, citing J. Macquarie, *Principles of Christian Theology*, 2nd ed. (London: SCM, 1977), 256.

³⁹ Polkinghorne, *One World*, 70.

⁴⁰ Polkinghorne, *One World*, 72.

beautiful structure of the world.”⁴¹ Like all in our universe, discovery is a process of change. Polkinghorne cautions, “Scientism is the mistaken attempt to exalt science into a complete philosophy. It will not work....”⁴² As he put it again some 10 years later, “It is hard to exaggerate the implausible poverty of a scientistic (sic) view of reality.”⁴³

k. Reasonableness: Ten years later, Polkinghorne added this one last characteristic to his understanding of the physical world: reasonableness. He strongly argues that theology must seek a reasonable interpretation of those who claim to have had experiences with God. On this point he finds agreement with Arthur Peacocke (addressed later herein). As critical realists, they both seek the “proper domain” for the “religious experience,” or so-called revealed truths, in order for theology to maintain its credibility.⁴⁴

For Polkinghorne science is never in stasis but always within a process of change, learning, and expanding its knowledge. Science is a subtle and complex process of seeking answers to the mysteries of the Universe while asking significant and difficult questions of human existence. While our scientific knowledge and understanding of the world can become

⁴¹ Polkinghorne, *One World*, 72.

⁴² Polkinghorne, *One World*, 73.

⁴³ Polkinghorne, *Scientists as Theologians*, 3.

⁴⁴ Polkinghorne, *Scientists as Theologians*, 24.

more and more accurate, it is a process like a tightening grasp upon a reality so complex and vast that it cannot be totally comprehended.⁴⁵

Polkinghorne and his colleague Arthur Peacocke agree concerning this modern doctrine of creation that sounds in the evolutionary character of both earth, and the entire universe itself. With the acknowledgement of evolution, God's relationship to the universe is one of creation at all times, and God must be working within the universe as it unfolds, as part of the evolution of the cosmos. Both Polkinghorne and Peacocke adhere to "the astonishing thrust towards evolving complexity, which has turned a ball of energy into the home of humanity in the 15 billion years of cosmic evolution."⁴⁶ They find that the evolution of the universe requires that we live within a world and a universe that God allows to make itself through God's own gift of self-limitation attributed to divine *kenosis*, as discussed in Chapter 2 herein.⁴⁷

1.4 Polkinghorne's system of bottom-up and top-down thinking

Polkinghorne repeatedly advocates for what he terms "bottom-up" thinking. This is driven by his commitment to critical realism, in which the knowledge of nature as it actually exists should drive our theoretical thinking. Peacocke agrees with this position, remarking that "In practice, working scientists...adopt a skeptical and qualified realism, according to which

⁴⁵ Polkinghorne, *One World*, 21-22.

⁴⁶ Polkinghorne, *Scientists as Theologians*, 44-45.

⁴⁷ Polkinghorne, *Scientists as Theologians*, 45.

their theories and models are proposed and regarded as ‘candidates for reality’.”⁴⁸ In advocating for bottom-up thinking, Polkinghorne looks for transcendence in everyday life.⁴⁹

Polkinghorne first approaches issues from the bottom-up through his experience, starting with the simplest and expanding to understanding larger, more complex principles. This is fundamental to his scientific training.⁵⁰ However, as a critical realist, he also makes a scientific case that understanding can also come from top-down thinking, that is beginning with the more complex and descending downward to the simpler.

Thus, Polkinghorne proposes to extend scientific analysis of bottom-up thinking to include top-down thinking. Polkinghorne suggests that this complex flow of learning is analogous to how both humans and God may act within the world.⁵¹ He states, “I maintain that this picture of information-flow is a plausible way of making sense of otherwise unsubstantiated claims of a downward-acting causation, either human or divine.”⁵² If humans can understand this complex interaction of thought, it can be analogized to how God interacts with humans from both the bottom-up (as God listening to individuals) and top-down (as God’s divine intervention).

⁴⁸ Polkinghorne, *Scientists as Theologians*, 14, quoting from Arthur Peacocke, *Imitations of Reality: Critical Realism in Science and Religion*, (Notre Dame, IN: University of Notre Dame Press, 1984) 25.

⁴⁹ Robert Boak Slocum, ed. *The Anglican Imagination: Portraits and Sketches of Modern Anglican Theologians* (Burlington, VT: Ashgate Publishing Co., 2015), 136.

⁵⁰ Polkinghorne, *One World*, x; Polkinghorne, *Reason and Reality*, 39.

⁵¹ Polkinghorne, *Reason and Reality*, 2.

⁵² Polkinghorne, *Reason and Reality*, 2.

In support of his scientific commitment to understanding, Polkinghorne criticizes the dogmatic view that something we do not understand is “God given” or of divine intervention, or as he puts it, the old God-of-the-gaps argument. This position cuts off further analysis or investigation. As a scientist, to investigate and understand is his life’s work: “Rational inquiry is not characterized by an unwillingness to take intellectual risks...but bold enough to venture on the construction of a metaphysical scheme....”⁵³

In a twist on this position, Karl E. Peters attempts empirical analysis of theology in strict scientific method. He relates concepts about God and salvation to ordinary life, much as Polkinghorne attempts in his concept of bottom-up thinking. However, Peters attempts empirical testing of Christian beliefs and practices. Within Peter’s position Christianity becomes a resource, not a faith and not within the criteria of theology.⁵⁴ Polkinghorne’s cautions against this and other attempts to make science a complete philosophy: “It will not work....”⁵⁵

⁵³ Polkinghorne, *Reason and Reality*, 11.

⁵⁴ Arthur Peacocke, *All That Is: A Naturalistic Faith for the 21st Century*, ed. Philip Clayton (Minneapolis, MN: Fortress Press, 2007) 94-95.

⁵⁵ Polkinghorne, *One World*, 73.

1.5 Conclusion

Polkinghorne organizes and justifies his world of scientific thought to account for the mysteries of the world. He consciously accepts as an act of faith the fundamental assumption of all scientists that the world is comprehensible, intelligible, and tightly formed. For Polkinghorne science provides understanding of how the universe and the natural world work. He suggests a complex flow of learning from both the bottom-up and the top down that is analogous to how both humans and God may act within the world. However, he cautions that while science seeks knowledge, it does not offer the whole truth because it does not address the broader questions of life. From this limitation of science and rational thought, chapter two herein considers Polkinghorne's broad view of God, faith, and the universe within the contextual roots of his thinking.

Chapter 2

Polkinghorne and His Quest for Truth: God and Natural Theology

2.0 Introduction

This chapter first seeks an understanding of Polkinghorne's view of natural theology. It begins with its definition and an explanation, and then briefly assesses the traditional viewpoint and compares it to Polkinghorne's distinct views. Polkinghorne's concepts of the anthropic principle and *kenosis* are specifically examined. The anthropic principle demonstrates the astounding complexity necessary for the universe to come into being and to evolve and sustain life. The process of *kenosis* allows humans the freedom of choice within their own experience. Lastly, the context of Polkinghorne's thinking is discussed within the context of his predecessors and colleagues Heim, Peacocke, and Barbour. Polkinghorne ultimately found the relationship between science and theology to be in consonance, similar in relationship as our minds within its human capability to understand are to the universe itself.

2.1 Polkinghorne's natural theology and his view of God

Polkinghorne defines his natural theology as the search for God's self-disclosure through understanding the universe.⁵⁶ In this view the world is God's creation, and thus a means for God to disclose himself to humans.⁵⁷ Polkinghorne uses scientific method and thought to learn of the

⁵⁶ Hans Schwarz, "Karl Heim and John Polkinghorne: Theology and Natural Sciences in Dialogue," *Journal of Interdisciplinary Studies* Vol. 9, Iss. 1/2 (1997): 105-119. ProQuest 214949117_1.pdf 29/62 36/62. (accessed July 3, 2018). See also Polkinghorne, *Scientists as Theologians*, 14.

⁵⁷ John Polkinghorne, *Science and Creation: The Search for Understanding* (London, England: SPCK, 1988), 2.

universe's physical reality while assuming the divine is the ultimate mystery of creation. Polkinghorne essentially adopts the known structure of the physical world to understand God.

Peter Barrett, in his article on Polkinghorne's new style of natural theology, asserts that Polkinghorne thus finds God within the design and appearance of the physical world rather than from revelation.⁵⁸ Polkinghorne would likely assert otherwise: "If the deep seated congruence of the rationality present in our minds with the rationality present in the world is to find true explanation, it must surely lie in ...the Rationality (sic) of the Creator."⁵⁹ Polkinghorne does not try to prove God's existence, but rather seeks signs of God and how God functions within the universe by understanding God's creation.⁶⁰

Polkinghorne's central Christian focus is found within his construct of natural theology. He writes that since the universe is God's creation, God can be found there and better understood through its study. To Polkinghorne, science is a path to God as a way to seek knowledge of Him through His creation. The tone of reverence and humility consistent within Polkinghorne's works towards the universe—from vast galaxies to the quantum level--bespeaks his commitment to the pursuit of science as his spiritual calling.

Traditionally, natural theology asserts the existence of God based on observation of nature and humans. Polkinghorne casts doubt upon tradition and states, "...every image of God

⁵⁸ Peter Barrett, "John Polkinghorne's Contribution to a New-Style Arts—Including Natural Theology," *Religion & Theology* 17 (2010): 425.

⁵⁹ Polkinghorne, *Science and Creation*, 31.

⁶⁰ Schwarz, "Heim and Polkinghorne in Dialogue," 31/62.

is an idol which eventually has to be broken in the search for Reality.”⁶¹ Somewhat changed within this century’s context of scientific discoveries, natural theology broadly relies on the assumption that the world was created and now sustained by a bounteous and generous God.⁶²

Polkinghorne holds a distinct view of natural theology that focuses on understanding God’s hand in creation through science rather than trying to prove the existence of God. Specifically, he contrasts the minute quantum world with the vast cosmos.⁶³ Polkinghorne fully concedes that science reveals the limited insight of rational, scientific method and thought while theology contributes understanding, compassion, and purpose to questions beyond the purview of science.⁶⁴

Polkinghorne’s concept of natural theology adds yet another level of comprehension. Integrated with science, its goal is to “produce an overarching, widely inclusive, theistic account of our multi-levelled evolutionary world—a theological ‘theory of everything’ – on the assumption that the world is the creation of a beneficent Creator.”⁶⁵ Rather than seeking to prove the existence of God, Polkinghorne seeks a context in which Christianity accommodates our current understanding of the cosmos.⁶⁶ Within this construct is the idea of using universal truths

⁶¹ Polkinghorne, *One World*, 34.

⁶² Barrett, “Polkinghorne’s Contribution,” 426.

⁶³ Schwarz, “Heim and Polkinghorne in Dialogue,” 20/62.

⁶⁴ Schwarz, “Heim and Polkinghorne in Dialogue,” 32/62 and 36/62.

⁶⁵ Barrett, “Polkinghorne’s Contribution,” 426.

⁶⁶ John Polkinghorne, *Science and the Trinity: The Christian Encounter with Reality* (New Haven, CN: Yale University Press, 2004), 62.

as supported by science, reason, and ethics to inquire into the philosophical and theological structure of our world.

2.2 Polkinghorne's natural theology and the anthropic principle

The anthropic principle forms natural theology's basic premise of the intelligible, tightly knit structure of the universe.⁶⁷ It considers scientific analysis of the unique and delicate physical balance of the universe sustaining a process of "evolving systems... [including] complexity sufficient to sustain conscious life."⁶⁸ To create our universe, the Big Bang would have to "correspond to [an] incredible degree of accuracy..." to account for its conformity to the basic laws of physics.⁶⁹ Polkinghorne forthrightly considers whether this view will survive the advance of knowledge.⁷⁰ Beyond this, he considers whether our knowledge will meet the limits of human capacity for the rational comprehension of it.⁷¹ In his respect for the gift of human consciousness, Polkinghorne writes of his belief in the capacity of humans to learn about creation and to comprehend the work of God and his revelations.⁷² Polkinghorne quotes Jesuit Bernard Lonergan for whom the quest for knowledge is the quest for God—"the unrestricted act

⁶⁷ Polkinghorne, *Science and Creation*, 32.

⁶⁸ Polkinghorne, *Science and Creation*, 31.

⁶⁹ Polkinghorne, *Science and Creation*, 32.

⁷⁰ Polkinghorne, *Science and Creation*, 40.

⁷¹ Polkinghorne, *Science and Creation*, 42.

⁷² Ian S. Markham, *Understanding Christian Doctrine*, 2d ed. (West Sussex, UK: John Wiley & Sons, Ltd, 2017), 28.

of understanding.”⁷³ For Polkinghorne the anthropic universe is God’s gift of freedom to humans that allows for each to experience life.⁷⁴

2.3 Polkinghorne’s natural theology and *kenotic* divine action

In his act of creation, Polkinghorne conceives of God as having made room for those other than Himself. Within the notion of *kenosis*, God humbly emptied Himself to create our universe, offering His own self-limitation in the giving of creative love. By analogy Polkinghorne compares this to Christ giving his life upon the cross, an act freely given and wholly vulnerable.⁷⁵ As part of this creative love, God allows humans and all He created to be themselves and to evolve an autonomous reality. Polkinghorne cites the example of adult baptismal vows, noting that they are a conscious choice made by a person to change. Here, baptismal vows are an example of God allowing conscious choice for a person to change, exemplifying through a religious act the scientific basis that allows for such change. God thus self-limits his divine control as an act of love rather than seeking to exercise a divine tyranny.⁷⁶ Thus, Polkinghorne asserts that in having made room for a creature other than Himself, God is loving and humble by allowing his creatures the experience of their own sacred consciousness.⁷⁷

⁷³ Polkinghorne, *Science and Creation*, 43.

⁷⁴ Polkinghorne, *Science and Creation*, 80.

⁷⁵ Polkinghorne, *Science and Creation*, 75-76.

⁷⁶ Ignacio Silva, “John Polkinghorne on Divine Action: A Coherent Theological Evolution.” *Science & Christian Belief* 24, No. 1 (2012): 22. Citing John Polkinghorne, *Faith, Science and Understanding* (New Haven, CN: Yale University Press, 2000) 111.

⁷⁷ John Polkinghorne, *Science and Providence: God’s Interaction with the World* (West Conshohocken, PA: Templeton Foundation Press, 1989), 4.

Using his gift as a scientist, Polkinghorne brings the reader within the quantum world of physics to demonstrate how science learns of change – even novelty-- within the Universe. He suggests that God must act within the existing laws of the universe, thus explaining the natural causality of earth-born suffering such as earthquakes, hurricanes, and floods. It also allows for research and development of a scientific theory of evolution to hold a theologically consistent understanding with the concept of a loving God who allows for autonomous development.

Ignacio Silva's close survey on Polkinghorne's view of divine action in the universe finds that his "main concern is to give a properly informed account of the interaction of divine providence with natural causality."⁷⁸ Polkinghorne writes of the tension between the certainty of God's plan for the world and the informed science that explains the world. Unable to fully resolve this issue, Polkinghorne humbly allows that science is still uncertain and unfinished in its conclusions. In short, we do not know of the mysteries of God. Thus, the point of connection between natural causes and theological thought remains unresolved in Polkinghorne's works likely until further scientific investigation provides more knowledge.⁷⁹ As Polkinghorne stated, "The cloudiness of unpredictability veils us from being able to make such decomposition."⁸⁰

2.4 The roots of Polkinghorne's natural theology and dialogue between science and theology: Heim, Peacocke, and Barbour

⁷⁸ Silva, "Polkinghorne on Divine Action," 19.

⁷⁹ Silva, "Polkinghorne on Divine Action," 29-30.

⁸⁰ John Polkinghorne, ed., *The Work of Love: Creation as Kenosis* (London, England: SPCK, 2001) 100-101, 111.

Polkinghorne formed his thoughts within the context of his predecessor Karl Heim and his contemporaries Ian Barbour and Arthur Peacocke. Karl Heim proposed a model that found both a transcendent God revealed through the world and through Christ. Ultimate truth for Heim was not found simply within the world as we know it, but must be sought beyond science to consider the meaning and purpose of life and the “why” humans existence at all.⁸¹ As early as 1904 in his Preface to *Das Weltbild der Zukunft* (The World View of the Future), Heim notes that modern theological thought may be determined by the scientific situation.⁸² Heim claims that he is concerned for those who suffer in the clash of faith and reason within which it is difficult to embrace traditional views.⁸³ This was a comment nearing prophesy as it continues to be a central issue within theology to this day.

Both Heim and Polkinghorne draw from Werner Heisenberg’s Principle of Uncertainty and acknowledge that it is not possible to hold a purely objective point-of-view that is fully independent from the bias of the observer. They hold that total objectivity does not exist within human ability.⁸⁴ As fallible humans, we are not able to know true reality as our view is always somewhat tainted by our own perception.⁸⁵ Heim focused on Christology and Christ’s relationship both to the earthly world and to human individuals. Thus, the sphere of God “is the

⁸¹ Schwarz, “Heim and Polkinghorne in Dialogue,” 20/62.

⁸² Schwarz, “Heim and Polkinghorne in Dialogue,” 24/62.

⁸³ Schwarz, “Heim and Polkinghorne in Dialogue,” 24/62.

⁸⁴ This position has long been held by many within the field of psychology from Freud to Jung and their predecessors.

⁸⁵ Schwarz, “Heim and Polkinghorne in Dialogue,” 25/62.

so-called suprapolar sphere, which includes all our spheres of polarity and that still beyond it.”⁸⁶ Ultimately, Heim posited that humans cannot reach the realm of God through the disclosure of natural phenomena, as God exists independent from human events and perception.⁸⁷ While Heim did not ignore science, unlike Polkinghorne he found that faith could not be derived from science. However, Polkinghorne’s friend and colleague, Arthur Peacocke was a scientist and priest like Polkinghorne himself, and his thinking was more supportive of Polkinghorne’s point of view.

Arthur Peacocke, Ian Barbour, and John Polkinghorne were friends and colleagues. Each exerted influence upon the other through friendship and academic discussions, and on most significant theological issues all remain in general agreement. These three scholars agree that “organisms are organized in a hierarchy of levels, whether viewed successively in evolutionary history or simultaneously within any given organism. ...[Thus,] events at higher levels must be analyzed using distinctive concepts irreducible to lower-level concepts....”⁸⁸ They each perceive humanity within its evolutionary history and reject the dualistic Christian distinction between body and soul.⁸⁹ All three find that if chance and human freedom are real, then even God cannot know the future. Each find the idea of omnipotence of God problematic as it makes God

⁸⁶ Schwarz, “Heim and Polkinghorne in Dialogue,” 26/62, quoting from Hans Schwartz, “Als Diakonischer Denker (As A Diaconal Thinker).” *Journal of Interdisciplinary Studies*, 11 1/2: 56-70.

⁸⁷ Schwarz, “Heim and Polkinghorne in Dialogue,” 26/62.

⁸⁸ Ian G. Barbour, “John Polkinghorne on Three Scientist-Theologians,” *God and the Scientist: Exploring the Work of John Polkinghorne*, eds. Fraser Watts and Christopher C. Knight, (Surrey, England: Ashgate Publishing Limited, 2012), 13.

⁸⁹ Barbour, “John Polkinghorne on Three Scientist-Theologians,” 15.

responsible for the suffering and evil of this world.⁹⁰ While Peacocke and Polkinghorne maintain that divine self-limitation is voluntary, Barbour maintains it is necessary.⁹¹ All three scholars were critical realists, all three scientists, and all three sought to open discussion in an attempt to understand the world as it is.

These three scholars questioned to what degree orthodox Christian beliefs can be reorganized or changed to meet secular thinking. At one end of this spectrum stands the intransigent beliefs of dogmatic Christian theology, and on the other the assimilation of theology within science. Peacocke found God within the physical structure of the universe and sought to sustain a naturalistic Christian faith compatible with science, while asserting at the same time that “God is at least personal.”⁹² For Peacocke, God embraced a “unique and ultimate Reality [sic] that... may then be said to be ‘rational and purposive’ in the eliciting of persons through the processes of the created world which the sciences discover.”⁹³

Ian Barbour provided “a fourfold taxonomy” in which science and theology could enter reflection: conflict, independence, dialogue, and integration.⁹⁴ Conflict occurs in the attempt of one discipline to exert control over the other.⁹⁵ When considered independently of each other,

⁹⁰ Barbour, “John Polkinghorne on Three Scientist-Theologians,” 16.

⁹¹ Barbour, “John Polkinghorne on Three Scientist-Theologians,” 17.

⁹² Arthur Peacocke, *From DNA to Dean: Reflections and Explorations of a Priest-Scientist* (Norwich, UK: Canterbury Press, 2012), 202.

⁹³ Peacocke, *From DNA to Dean*, 202.

⁹⁴ Schwarz, “Heim and Polkinghorne in Dialogue,” 37/62; See also Polkinghorne, *Scientists as Theologians*, 5, 83 citing to I. G. Barbour, *Issues in Religion and Science*, ch. 1.

⁹⁵ Polkinghorne, *Scientists as Theologians*, 5.

both science and theology ignore the impact of one upon the other. Dialogue encompasses mutual conversation toward a richer vision of reality while integration implies an even closer relationship.⁹⁶

Polkinghorne termed his position “consonance” and sought a middle ground among these three scholars. For him the position of dialogue between science and theology was much less restrained than Heim. However, Polkinghorne found Barbour strayed too close to the assimilation of theology by science.⁹⁷ Polkinghorne stressed Christianity’s unique revelation and relationship with Christ, and he found that “anything less would lead to a meaningless conversation, and a view of reality which is idolatrous in that it is a self-created reality.”⁹⁸

Polkinghorne generally agrees with Peacocke’s position. Polkinghorne posited that while valuable, natural theology takes the quest for God only so far and yields limited insight. The conception of God with science alone does not provide for the personal God of the Jewish and Christian traditions. Natural theology provides insight into the divine, but not an image of the divine itself.⁹⁹

For Polkinghorne, both Peacock and Barbour pushed too far toward assimilation of theology within its interdisciplinary relationship with science. In Polkinghorne’s thinking, the two disciplines must be distinguished. Science shows theology how to understand God’s creation, while theology inures ethical discernment, compassion, and direction. It is a

⁹⁶ Polkinghorne, *Scientists as Theologians*, 5-6.

⁹⁷ Polkinghorne, *Scientists as Theologians*, 82-83.

⁹⁸ Schwarz, “Heim and Polkinghorne in Dialogue,” 37/62.

⁹⁹ Schwarz, “Heim and Polkinghorne in Dialogue,” 30/62.

relationship Polkinghorne alternately calls consonance, kinship, filial association, and even cousins.¹⁰⁰ Polkinghorne finds relationship between our minds, and our understanding of the universe, and thus with the creator of the universe, God himself.

2.5 Conclusion

Polkinghorne grounds his Christian faith within his views of natural theology. While not focusing on who or what God is, Polkinghorne looks to understand his Creator through nature. Using current scientific knowledge, Polkinghorne is able to extend his thinking beyond the traditional view of natural theology of his predecessors and colleagues Heim, Peacocke, and Barbour. Ultimately, Polkinghorne finds the relationship between science and theology to be one of consonance, as if a reflection of the relationship between the human mind's ability to understand nature and nature itself.

¹⁰⁰ Schwarz, "Heim and Polkinghorne in Dialogue," 36/62.

Chapter 3

Polkinghorne's Consonance of Science and Theology

3.0 Introduction

Initially this chapter focuses on a basic understanding of Polkinghorne's position of "consonance," leading to a brief exploration of the opposing viewpoints of Karl Barth and others within the postmodern perspective of relativism. First explored is Polkinghorne's argument for theologians to make tighter, more rational arguments. He cites four main areas of contention between science and theology: human's origins, God's interaction with the world, miracles, and the future of human life. In his quest for truth, Polkinghorne uses science to understand the physical world while also acknowledging the limits of objectivity and rational reason. He seeks understanding through both science and human experience; however, as he developed his thinking over ten years, his position of consonance moved more toward assimilation of theology into scientific knowledge. This is a position closer to that of his colleagues Peacocke and Barbour, as discussed previously.

As a reflection upon the world of critical theology more than upon Polkinghorne's work, briefly included are remarks of critics representing both sides of arguments made against Polkinghorne's work. On the one hand critic Ruse claimed that Polkinghorne had abandoned religion; on the other Russell claimed Polkinghorne had not incorporated scientific theory enough. It would seem Polkinghorne found little peace.

3.1 What is consonance?

Polkinghorne integrates the two disciplines of science and theology in his quest for truth, seeking what he terms “consonance,” which he sometimes describes as a kinship, cousins, or a filial relationship. Although never explicitly defined, its common meaning of “harmony” gives expression to his thinking. For Polkinghorne, through a scientific understanding of the universe, we can find hope within a God who interacts both with the world through science and with humans through religious experience.¹⁰¹

Polkinghorne finds consonance between theology and science, with both achieving critical realism. He insists that theology should not be compartmentalized into factions of reason on the one hand and revelation through miracle and prayer on the other. Similarly, by analogy he points to the one reality that all humans face and the physical laws that apply equally throughout, not just to our world, but to the universe. Thus, “consonance” represents to Polkinghorne the very integrity of God the Creator that fashioned these physical laws and God’s relationship with the world.¹⁰² As Polkinghorne states, “Natural theology is important, because if God is the Creator of the world, he has surely not left it wholly without marks of his character, however veiled.”¹⁰³

Polkinghorne’s integration of science and theology within the Christian tradition is an all-encompassing narrative of the cosmos. His concern is not merely for humans or for the earth,

¹⁰¹ Polkinghorne, *Science and Providence*, 112.

¹⁰² Polkinghorne, *One World*, 93.

¹⁰³ Polkinghorne, *One World*, 93.

but he embraces the entire universe within his thinking. While acknowledging the limits of objectivity, he asserts that rational reason does not detract from the search for order and an understanding of human experience. Instead, he argues that it leads to a greater variety of experiences and an acceptance of both objective reality and human response to it.¹⁰⁴

The disciplines of science and theology differ in the degree of their control over the specifics and the scope of their inquiry.¹⁰⁵ In science, the physical world is there to measure, push, and prod. However, in theology the discovery and expression of personal experience may sometimes lie within an encounter with the divine.¹⁰⁶ For humans, the spiritual experience is internal and often not expressible through language.¹⁰⁷ Some have given expression through the arts such as poetry, music, and painting and relates to the symbolic rather than objective description. Although the subject matter of science and theology differs, both seek to understand aspects of the world we live in—reality, conceived of in a real, concrete, lived-in sense.¹⁰⁸

3.2 The opposing view of Karl Barth

Karl Barth asserts theology should find its own path separate from science, and he perceived science and theology as wholly different in their pursuit of knowledge.¹⁰⁹ He found

¹⁰⁴ Polkinghorne, *One World*, 8.

¹⁰⁵ Polkinghorne, *One World*, 8.

¹⁰⁶ Polkinghorne, *One World*, 9.

¹⁰⁷ Polkinghorne, *One World*, 11.

¹⁰⁸ Polkinghorne, *One World*, 43.

¹⁰⁹ Schwarz, "Heim and Polkinghorne in Dialogue," 22/62.

natural theology a mere human conceit, and refuse any dialogue with the natural sciences.¹¹⁰ Barth looked to the personal revelation of God to find Christian values. Generally writing within the context of World War II, Karl Barth sounded his strident objection to the Third Reich. He pursued the nature of the divine truth of God's relationship to humans as one of both grace and judgement. He stressed it was a paradox that sounded in the Word of God, sometimes referred to as neo-orthodoxy. From his experience as witness to the so-called "science" of the Nazis, Barth stands as an iconic theologian holding that Christian ethics, regardless of whether we find them through science or natural theology, must retain humanitarian, Christian values of compassion and love.

3.3 Postmodern theological efforts

Postmodernism includes an effort to maintain the investigation of theology as inherently different and separate from science. Polkinghorne addresses it directly. Postmodernism, in which Polkinghorne claims "relativism rules,"¹¹¹ began with the writers Polkinghorne coins as "the masters of suspicion," starting with Karl Marx and Sigmund Freud. Both claim that humans find their fundamental essence within the hidden motivations of class, money, race and sexuality.¹¹² Within contemporary context, humanists now assert reality not from how things are, but from language, culture, and community. Ultimately, the reader can choose whatever meaning the reader may determine, fully relative to the reader's needs.¹¹³ For example, Rowan Williams

¹¹⁰ Markham, *Christian Doctrine*, 28; Schwarz, "Heim and Polkinghorne in Dialogue," 24/62.

¹¹¹ Polkinghorne, *Scientists as Theologians*, 2.

¹¹² Polkinghorne, *Scientists as Theologians*, 2.

¹¹³ Polkinghorne, *Scientists as Theologians*, 2.

in *The Wound of Knowledge*¹¹⁴ explains his theology in poetic aphorism without concerted attempt of tight, academic argument as espoused by Polkinghorne.

Katherine Sonderegger in her eloquent essay “The Character of Christian Realism” apologetically concludes that “Christian theology calls upon a rough and ready, ‘common sense’ understanding of reality when it begins and carries forward a system of realism.”¹¹⁵ She continues that “Christian theology is ordered to God’s own ways and works: we seek a realism in which the God of Israel is both Agent and Sovereign, both Object and Subject in the world we inhabit, rely upon, receive and change. Christian realism is reflection upon the reality created and blessed by the creator.”¹¹⁶ Within the context of this century, even Sonderegger accepts the scientific knowledge of the natural world within theological thought: “Christian realism is the reception of the world, the real world. Nothing less question-begging than that can be said.”¹¹⁷ Later in her essay she opines, “All sciences, St. Thomas taught, partake in their limited domains in the great truth of God, so the science of God cannot, in that sense, be opposed to any rational truth. So too, Christian realism need not fear or oppose the historical, sociological or scientific study of reality.” This begrudging acceptance of science as it challenges the neo-orthodoxy, is laden with both gratitude and caution, both of which are well taken.

¹¹⁴ Rowan Williams, *The Wound of Knowledge* (Lanham, MD: Cowley Publications, 1979).

¹¹⁵ Katherine Sonderegger, “The Character of Christian Realism,” *Scottish Journal of Theology* 57 (4): 451-465 (2004), 451.

¹¹⁶ Sonderegger, “The Character of Christian Realism,” 452.

¹¹⁷ Sonderegger, “The Character of Christian Realism,” 460.

3.4 Polkinghorne pushes theologians toward tighter, more rational argument

Polkinghorne argues that theologians should not indulge in irrational thought to describe the inevitable mystery encountered in describing God. There is no exception for beauty or artistic license. He argues in paradox, first stating that while the insights of faith are not always demonstratable by proof or experiment "...we are only to embrace polarities which are required by experience."¹¹⁸ In an attempt to explain this comment, he then cites to Philippians 2:12-13 in which Paul writes, "continue to work out your own salvation with fear and trembling; ...for God is at work in you." Here each person is conceived as responsible for what they do, yet also within each person God is at work. It is the ultimate conflict of individual responsibility versus grace.¹¹⁹ In an effort to overcome this seeming paradox between the two subjects, Polkinghorne notes that both science and theology are fallible and both also able to be corrected. He then turns to the method of thought often used by theologians and sternly warns that if theology is to gain respectability, it must argue within four standards: (1) coherence and consistency of arguments; (2) economy of simple explanations; (3) adequacy that explores all concerns; and, (4) existential relevance in which the theory argued relates directly to the reality of actual experience.¹²⁰ For Polkinghorne, these characteristics are similar to those within the scientific world.

3.5 Consonance and its four major issues of contention: origins, God's interaction with the world, miracles, and the future life of humans

¹¹⁸ Polkinghorne, *One World*, 43.

¹¹⁹ Polkinghorne, *One World*, 43.

¹²⁰ Polkinghorne, *One World*, 44.

Polkinghorne deals specifically with four major points of specific contention between science and theology. First, he notes that the origin of the universe, originating with the Big Bang 13.8 billion years ago, is not in direct conflict with the Christian notion of God having created the world. Instead, he finds they are merely in “different categories of statement.”¹²¹ For Polkinghorne, creation was brought about by both God and the Big Bang—not one or the other.¹²² Here, Polkinghorne reaches back to his friend and colleague Arthur Peacocke (also a scientist-priest) who found “God’s plan a positive, exploratory role for chance in the realization of potentiality”¹²³ and like Polkinghorne found “an intricate and subtle interlacing of the levels of change and necessity in the functioning of the world.”¹²⁴

Secondly, God’s interaction with the world is not merely through the remote causation of physical laws as science knows them, but also through the personal experience of prayer and belief.¹²⁵ Both the physical laws of the world and chance are part of God’s role as he unfolds himself through a “measure of vulnerability and precariousness which always characterize the gift of freedom by love.”¹²⁶

Polkinghorne’s third issue of miracles, is such a point of contention that he affords it separate analysis. He sounds a cautionary note and calls for understanding. Polkinghorne

¹²¹ Polkinghorne, *One World*, 78.

¹²² Polkinghorne, *One World*, 79.

¹²³ Polkinghorne, *One World*, 79, quoting A. Peacocke, *Creation and the World of Science* (Oxford: Oxford University Press, 1979), especially chs. 3 and 5.

¹²⁴ Polkinghorne, *One World*, 82.

¹²⁵ Polkinghorne, *One World*, 83.

¹²⁶ Polkinghorne, *One World*, 82.

acknowledges that there are widespread claims within the religious world concerning encounters with various images of transcendent, self-described reality.¹²⁷ As he puts it—or perhaps sidesteps it—, “Of course, one must also recognize great variations in the manner in which this experience is apprehended and expressed.”¹²⁸ Polkinghorne writes that the mystical experience should be understood as experiencing “the unity with the ground of all being.”¹²⁹ Yet even here, Polkinghorne finds the “rudiments of a mystical methodology”¹³⁰ that he relates in some manner to the scientific method. He cautions that the Bible need not be taken literally simply because of one’s Christian faith. He immediately points to the role of myth and legend within the Bible. However, at the same time he notes that “Christianity cannot escape the challenge of the miraculous, for at its heart lies the assertion of the resurrection, that God raised Jesus from the dead.”¹³¹

Polkinghorne turns the common doubt of the miraculous upside down. He does not ask not how miracles happen, but asks why they do not happen more often. Why is humanity left within the morass of disaster?¹³² While it is logically feasible that if God created the laws of the universe, then God could intervene and change or suspend these laws at will, for Polkinghorne the problem then is why God intervenes so little. Well within Episcopal tradition, Polkinghorne posits that miracles can find “theological acceptance only if ...perceived as part of a wider unity

¹²⁷ Polkinghorne, *One World*, 35.

¹²⁸ Polkinghorne, *One World*, 35.

¹²⁹ Polkinghorne, *One World*, 36.

¹³⁰ Polkinghorne, *One World*, 36.

¹³¹ Polkinghorne, *One World*, 88.

¹³² Polkinghorne, *One World*, 88-89.

of divine action and purpose, which goes beyond the experience of everyday but which forms with it a coherent whole.”¹³³ In an apparent effort to sidestep the issue of miracles, Polkinghorne states that “science often faces the unexpected,” while “the pursuit of such a unified understanding is the main task of theology in the face of the unexpected which we call the miraculous.”¹³⁴ Thus, we have Polkinghorne on the same page of the same book defining “miracles” as the unexpected with both science and religion seeking to explain them. Just one page previous to this, Polkinghorne affirms his belief that “Christianity cannot escape the challenge of the miraculous, for at its heart lies the assertion of the resurrection... .”¹³⁵ This paradox of circular reasoning is soothed by Polkinghorne’s explanation that circumstances change and changing circumstances lead to different results. Apparently, here Polkinghorne uses “circumstances” as a scientist would use the term “variables”¹³⁶ The saving grace within this argument would seem to be Polkinghorne’s deep faith. With his usual reserved clarity, Polkinghorne notes, “Christianity claims that God was in Christ in a unique way. If that is true, it is to be expected that unprecedented events might occur, for Jesus represented the presence of a new regime in the world.”¹³⁷ Then, Polkinghorne clinches these issues with a broad, summary punch that he nowhere else addresses: “... miracles are seen, not as celestial conjuring tricks, but

¹³³ Polkinghorne, *One World*, 89.

¹³⁴ Polkinghorne, *One World*, 89.

¹³⁵ Polkinghorne, *One World*, 88.

¹³⁶ Polkinghorne, *One World*, 90.

¹³⁷ Polkinghorne, *One World*, 90.

as signs, insights into a **deeper rationality than that normally perceptible by us.**” (Emphasis added.)¹³⁸

Fourth and last, Polkinghorne discusses the future hope of humans for immortality of the soul. While the idea of resurrection goes beyond the direct experience of humans, Polkinghorne dryly notes that the pattern of our actual physical bodies while dissolved at death could conceivably be “recreated in another environment in an act of resurrection.”¹³⁹ Ultimately, Polkinghorne expands this argument to consider the eventual demise of the entire universe, and the “Creator’s eternal purposes will have to take place **beyond this present world** (emphasis added) —which is what I take to be the meaning of the Christian doctrines of the resurrection of the body and the life of the world to come.”¹⁴⁰

Among these four issues, Polkinghorne’s offer of consonance broadly infers that reason alone is limited. Reason cannot explain everything, neither the intuition of the scientist nor the artistic and relational issues of human consciousness. Science can offer reasons for and against theological claims or even for or against evolution.¹⁴¹ For Polkinghorne, this is not just a biological, evolutionary process, but also part of God’s divine creation.¹⁴² Similarly, reasons can be offered for and against belief or disbelief—faith or doubt—and none can be totally

¹³⁸ Polkinghorne, *One World*, 90.

¹³⁹ Polkinghorne, *One World*, 91.

¹⁴⁰ Polkinghorne, *One World*, 95.

¹⁴¹ Polkinghorne, *One World*, 45.

¹⁴² Markham, *Christian Doctrine*, 112.

decisive.¹⁴³ Conclusions and findings of science change with advances in thought and research and likewise the paradigms of theology change. Fuller Torrey posits that as the human brain evolved and enlarged, our thought patterns became more sophisticated, enabling humans to conceive of a more scientifically and religiously complex world.¹⁴⁴ Neither the discipline of science nor theology offers incontrovertible truths.¹⁴⁵ Through intelligible, rational thought in both areas of inquiry, Polkinghorne attempts to posit an integrated view of reality.¹⁴⁶

3.6 How does Polkinghorne integrate the two disciplines of science and theology in his quest for truth?

While Polkinghorne acknowledges the limits of objective, rational reason, he does not detract from the search for order and an understanding of the human experience. In fact, he argues it leads to a greater variety of experiences and an acceptance of both objective reality and of human response to it.¹⁴⁷ Through his lens of natural theology, Polkinghorne asserts that since God created the universe, God has surely left the mark of his character upon it. Thus, there must be a consonance between the science with which we explain the physical laws of the world and our understanding of God.¹⁴⁸

¹⁴³ Polkinghorne, *One World*, 34, 45.

¹⁴⁴ Fuller Torrey, *Evolving Brains Emerging Minds: Early Humans and the Origins of Religion* (New York, NY: Columbia University Press, 2017).

¹⁴⁵ Polkinghorne, *One World*, 22.

¹⁴⁶ Polkinghorne, *One World*, 51; Polkinghorne, *Reason and Reality*, 51.

¹⁴⁷ Polkinghorne, *One World*, 8.

¹⁴⁸ Polkinghorne, *One World*, 93.

The disciplines of science and theology differ in the degree of their control over the specifics and scope of the inquiry.¹⁴⁹ In science, the physical world is there to measure, push and prod. However, in theology, the discovery and expression of personal experience may sometimes lie within an encounter with the divine.¹⁵⁰ For humans, the spiritual experience is internal and often not expressible through language.¹⁵¹ Some have given expression through the arts such as poetry, music and painting and relates to the symbolic rather than objective description. Although their subject matter of theology and science differ greatly, both seek to understand aspects of the world.¹⁵²

There is little doubt that Polkinghorne has taken some theologians to task. For Polkinghorne, the effort to understand God must focus on the totality of reality.¹⁵³ It is the calling of theology to draw from all areas of inquiry at their highest level. Thus, theology must consider ethics, compassion, beauty, art, the physical world, among others, as well as the revelations of the Spirit and religious development of humans. Polkinghorne notes that theology must find all these areas within their deepest, most profound level of understanding. Theology's gift to science is to pose the metaphysical and mega-questions that science leads to but are not in and of themselves scientific and thus cannot be answered by science.¹⁵⁴

¹⁴⁹ Polkinghorne, *One World*, 8.

¹⁵⁰ Polkinghorne, *One World*, 9.

¹⁵¹ Polkinghorne, *One World*, 11.

¹⁵² Polkinghorne, *One World*, 43; Polkinghorne, *Reason and Reality*, 59.

¹⁵³ Polkinghorne, *Reason and Reality*, 75.

¹⁵⁴ Polkinghorne, *Reason and Reality*, 75.

3.7 Assimilation

By 1996, ten years after the above analysis, Polkinghorne acknowledged assimilation as a viable scheme for the interaction of science and theology. It represents a high degree of merging—if not absorption—of theology within the knowledge of science. As acknowledged in the evaluation herein, assimilation is the concern of those who fear that science will undermine the Christian faith in Jesus Christ, and it threatens accommodation between the two disciplines. Polkinghorne states, “Central to Christianity is its according a unique status to Jesus Christ. ...I believe that this calls for theological categories that are ...radically novel.”¹⁵⁵ Polkinghorne finds the main area of diversion between himself and Peacocke is this concept of assimilation and the degree to which it should be pursued.¹⁵⁶

Just a few years later, in 2012, theologian Robert John Russell flatly states that “Not only should theology critically incorporate the discoveries of science and their philosophical interpretation in theological reconstruction, but in addition such a reconstructed theology might offer either insights for future research programs in science....”¹⁵⁷ In complete opposition, Michael Ruse in his book *Making Room for Faith* finds that Polkinghorne abandoned religion in favor of reaching for meaning through science.¹⁵⁸ Professor Ruse is the Director of History and Philosophy of Science at Florida State University. He resoundingly criticizes Polkinghorne’s

¹⁵⁵ Polkinghorne, *Scientists as Theologians*, 7.

¹⁵⁶ Polkinghorne, *Scientists as Theologians*, 8.

¹⁵⁷ Robert John Russell, “Eschatology and Scientific Cosmology: From Deadlock to Interaction” *Zygon* 47, no. 4 (December 2012): 1006.

¹⁵⁸ Michael Ruse, *Science and Spirituality: Making Room for Faith in the Age of Science*, (Cambridge, NY: Cambridge University Press, 2010), 6.

position, suggesting that after Polkinghorne's observation of science and religion's mutual interaction,

“[his] writing soon descends from disinterested analyses of the science-religion relationship into apologies for thinking that fits more comfortably into the culture of Elizabeth the First than Elizabeth the Second. He may not have faith enough to raise Lazarus from the dead, but he does a pretty good god on pulling out the stakes from the hearts of arguments long buried by such philosophers as David Hume and Immanuel Kant.”¹⁵⁹

Polkinghorne likely finds little peace.

3.8 Conclusion

¹⁵⁹ Michael Ruse, *Making Room for Faith*, 6.

Initially, Polkinghorne's works assert that science and theology must find consonance in which each has its own area of discipline and yet both share as they overlap in their understanding of the universe. He addresses this consonance as a kinship or filial relationship of mutual support. Not all agree with Polkinghorne, and Karl Barth stands out among these. Barth wrote within his experience of the Nazi Regime of World War II when he stood for Christian values rather than conforming to the pseudo-science justifying the Nazis. Barth reminds all that science alone is not enough. Also, in opposition to Polkinghorne are the postmodern writers that use vague language allowing the reader to project into their work their own values as relative to their own needs.

Nonetheless, Polkinghorne sternly brings other theologians to task, asserting that tighter, more rational arguments help theology enter thoughtful, rational discourse. He discusses four specific areas that have spawned contention between science and theology (origins, God's interaction with the world, miracles, and the future life of humans), and he seeks further discussion within the theological world. In his quest for truth, Polkinghorne uses science to understand the physical world but also acknowledges the limits of objectivity and rational reason. As his thoughts developed, ten years later his position of consonance moved more toward the assimilation of theology into scientific knowledge, a position closer to that of his colleagues Peacocke and Barbour. While carefully considering his position of consonance, Polkinghorne believed that spiritual revelation was of the utmost importance, and thus he separately considered prayer, religious experience, and miracles. Likewise, they are separately considered here in the next chapter.

Chapter 4

Polkinghorne's View of Revelation:

Prayer, Religious Experience, and Miracles

4.0 Introduction

Polkinghorne finds that revelation through prayer, religious experience, and miracles forms the fundamental basis of faith. It is an “irreducibly individual” experience and an experience of the miracle of the cross and the suffering of Christ. However, he also notes that it forms the fundamental conflict between science and theology. Although Polkinghorne acknowledges claims of religious encounters of a transcendent reality, he is very cautious and does not voice outright acceptance of such claims. In fact, he mentions almost in passing that a deity that selectively intervenes is more common in the pagan tradition. For Polkinghorne, the issue is one of transcendence and belief in Christ's resurrection. Concerning evil and suffering, Polkinghorne offers his own belief that the world lies within God's gift of self-limitation and is the gift of free will to all God's creatures. Somehow evil and suffering generate a greater good within a broader context.

4.1 Prayer, religious experience, and miracles, as transcendent reality and individual experience

Polkinghorne finds the experience of prayer fundamental to the human experience and “irreducibly individual.”¹⁶⁰ For him, the mystery of the cross of Christ is the only inevitable

¹⁶⁰ Polkinghorne, *Science and Providence*, 84-85.

explanation of prayer. It is a “collaborative, personal encounter between human and God, to which both contribute”¹⁶¹ and forms the mystical experience he understands as “the unity with the ground of all being.”¹⁶² Polkinghorne specifically writes of our human encounter “with the numinous presence of an Other; the recognition of unity with a reality transcending oneself, and the perception of a purpose at work in the world.”¹⁶³

Polkinghorne also cautiously acknowledges there are widespread claims within theology of encounters with transcendent reality,¹⁶⁴ and in his own words, “Of course, one must also recognize great variations in the manner in which this experience is apprehended and expressed.”¹⁶⁵ He acknowledges forthrightly that miracles present both theological and scientific issues. Although science cannot bring one to a direct encounter with God nor demonstrate the divine, science does take humans on their journey to knowledge.¹⁶⁶ Within this experience of science Polkinghorne finds the “rudiments of a mystical methodology” that relate to scientific method.¹⁶⁷ Within his understanding of God, Polkinghorne questions how events that defy scientific explanation occur if the physical laws of the universe remain constant. He posits that if God created the cosmos in a manner we can discern, then God is logically consistent and

¹⁶¹ Polkinghorne, *Science and Providence*, 81.

¹⁶² Polkinghorne, *One World*, 36.

¹⁶³ Polkinghorne, *One World*, 35

¹⁶⁴ Polkinghorne, *One World*, 35.

¹⁶⁵ Polkinghorne, *One World*, 35.

¹⁶⁶ Schwarz, “Heim and Polkinghorne in Dialogue,” 30 and 31/62.

¹⁶⁷ Polkinghorne, *One World*, 36.

reliable. In opposition, he notes that if Christians theologically subscribe to miracles, then the Christian God is similar to a selective interventionist deity more common in pagan traditions.¹⁶⁸

As a scientist Polkinghorne finds faith that the universe acts in accordance with consistent laws of physics and assumes that humans can discern this knowledge. However, he concedes that miracles “must be perceptions of a deeper rationality than that which we encounter in the everyday occasions which make visible a more profound level of divine activity.”¹⁶⁹ Polkinghorne specifically cites his belief in the miracle of Christ’s resurrection consistent with Christian theology as God’s action within the body of Christ.¹⁷⁰

For Polkinghorne, the issue becomes not one of miracles—whether to believe them or not – but one of transcendence. He accepts the miracle of Christ’s transcendence as he believes that the boundaries of science can and will change and are not so tight that our understanding cannot allow for the personal God of love to intervene in the action of the universe. While God’s action is consistent, it may also be surprising and unexpected.¹⁷¹ Through prayer we can seek God’s intervention, yet to Polkinghorne prayer is the “aligning of our wills with God’s” and the resolve to obey in the accomplishment of His will.¹⁷² Polkinghorne here does not offer the tight reasoning he advocates for theological thought. He does not suggest a transcendent reality nor a definition of transcendence. Without guile, he offers only his faith.

¹⁶⁸ Polkinghorne, *Science and Providence*, 60.

¹⁶⁹ Polkinghorne, *Science and Providence*, 60

¹⁷⁰ Polkinghorne, *Science and Providence*, 60, 63.

¹⁷¹ Polkinghorne, *Science and Providence*, 68.

¹⁷² Polkinghorne, *Science and Providence*, 5, 81.

4.2 Evil and suffering

As if a ratio of a theological equation, Polkinghorne asserts that the more Christians emphasize the importance of love and goodness within our world, the more important the issue of evil becomes. Within this equation he does not recognize nor consider the good that science has done to overcome suffering within our world such as medical advances, weather prediction, extended life expectancy (Polkinghorne is 91 years old), general life comforts, and the like. Oddly, he does not weight his belief in science against the suffering of the world even through his response to evil relies on both his natural theology and his faith as a scientist in the discoverable physical laws of the universe. He believes that God allows the universe to be itself in the gift of God's self-limitation. It is the gift of free will and freedom to His creatures. As an extension of the anthropic principle, the evolution of human ability to define human morality is achieved through the process of chance and necessity.¹⁷³ Yet he expresses the pain of this belief in his short quotation of Dorothy Soelle, "No heaven can rectify Auschwitz."¹⁷⁴ Polkinghorne finds the inhumanity of humans towards each other mirrored by the suffering of Christ,¹⁷⁵ yet he does not push beyond this point.

Polkinghorne does not consider the contributions of science to resolving what some have viewed as a religious experience of suffering within their relationship with God such as the belief that the Black Plague was the result of evil. He poses there is only one line of thought that can

¹⁷³ Polkinghorne, *Science and Providence*, 77.

¹⁷⁴ Polkinghorne, *Science and Providence*, 74.

¹⁷⁵ Polkinghorne, *Science and Providence*, 79.

justify suffering: that it somehow generates a greater good within a broader context.¹⁷⁶ This is consistent with his omission of science leading humans toward a sense of greater good or supporting moral values. Here it seems that Polkinghorne himself views science as separate from theology and without congruence as he omits in his perception the contributions of science to the experience of life.

4.3 Conclusion

With his faith firmly placed in prayer, Polkinghorne steps back from science and allows that while we do not understand prayer scientifically, its miracle is not to be denied in the same manner that the transcendent Christ's resurrection is not to be denied. Although Polkinghorne mentions a deeper reality than we presently understand, he does not make sustained argument of it, but rather simply offers his faith. Polkinghorne does not try to explain away prayer and miracles, but aligns the workings of the universe with that of the human mind:

There is a congruence between our minds and the universe, between the rationality experienced within and the rationality observed without. This extends not only to the mathematical articulation of fundamental theory, but also to all those tacit acts of judgment, exercised with intuitive skill that are equally indispensable to the scientific endeavor.¹⁷⁷

¹⁷⁶ Polkinghorne, *Science and Providence*, 73.

¹⁷⁷ Polkinghorne, *Science and Creation*, 29.

Chapter 5

Assessment of Polkinghorne – emphasizing the student's perspective

5.0 Introduction

This chapter critiques Polkinghorne, emphasizing the student's viewpoint. The first section encounters Polkinghorne's Christian faith through his position as a critical realist within his natural theology. It is comprised of four subsections: (a) Polkinghorne's quest for knowledge as the quest for God and its underlying assumptions; (b) the cosmological end of the universe; (c) evil and suffering; and (d) Polkinghorne's mastery of dialogue toward reconciliation.

The second section notes Polkinghorne's faithful long obedience through both his scientific investigation of the universe and his theological efforts. It is a journey of both reason and the heart.

The third section considers the need for Polkinghorne's collected thoughts. Here the student voices the struggle to learn about Polkinghorne's thought through 38 books and over 100 lectures.

The fourth section discusses Polkinghorne's seeming challenge to his own moderate position. Extended fully, his belief in natural theology can embrace all faiths, as all people experience nature equally. Taken to its logical extension, this position expands his firm commitment to the Christian faith to a full acceptance of a pluralist position. While Polkinghorne calls for bold theology, he places himself within a more traditional Christian faith.

The last section considers Polkinghorne's suggestion of symbols as a means of finding consonance between theology and science and presents three artworks by the author in support of Polkinghorne's thoughts.

5.1 Polkinghorne's encounter with God as critical realist theology.

a. The quest for knowledge is his quest for God and its assumptions.

For Polkinghorne, the quest for knowledge is the quest for God—"the unrestricted act of understanding."¹⁷⁸ Within the dialogue of science and theology he has sought to resolve the seeming paradox between our personal, religious experience of providence and the scientifically deducible implications of natural causes.

Polkinghorne's position leaves Christian theology with new assumptions. First, is Polkinghorne's strident view that it is reason that calls us to understand our universe, and through reason we can learn of God's work as the creator of the universe. Inherent within this assumption is Polkinghorne's acknowledgement that the scientific quest for further knowledge includes change, and he implies this change will affect Christianity itself. Although Polkinghorne argues strenuously for science as a means of discerning God's action within the universe, he does not take the step of arguing that science discloses God's will, or that science is God's will. In fact, he finds science without God to be vacuous: "It is hard to exaggerate the implausible poverty of a scientific (sic) view of reality."¹⁷⁹

¹⁷⁸ Polkinghorne, *Science and Creation*, 43.

¹⁷⁹ Polkinghorne, *Scientists as Theologians*, 3.

Considering a second assumption of Polkinghorne's position, within his theology human purpose is to search for God through knowledge.¹⁸⁰ It is a position that assumes we do not have all the answers, and thus our purpose is to continue the search and hold to a future driven direction. This implies that our scientific knowledge of the world and thus our theological understanding of our Creator is incomplete and will change.

Considering a third assumption, Polkinghorne's vision assumes a universe of harmony that reacts consistently within scientific principles. His universe embraces understanding the tightly knit anthropic principle, and its mystery is his quest for knowledge of the God that created it. Within this assumption, Polkinghorne seeks the theological harmony of both a rational universe and a loving Creator.

Ignacio Silva argues that Polkinghorne's "main concern is to give a properly informed account of the interaction of divine providence with natural causality."¹⁸¹ While this appears to be a true statement of Polkinghorne's work, it also suggests the point where Polkinghorne struggles to confine his position within tradition Christian boundaries. As suggested below, to some degree Polkinghorne challenges his own moderate position.

In advocating for bottom up thinking, Polkinghorne expressly validates the personal experience as real and then suggests methodology that seeks to synthesize personal experience and broaden it to theology that describes reality as it is, not as we would have it. Ultimately, Polkinghorne acknowledges that an intimate connection with God within the context of a

¹⁸⁰ Polkinghorne, *Scientists as Theologians*, 14.

¹⁸¹ Silva, "Polkinghorne on Divine Action", 19.

personal relationship is an act of faith and an act of commitment. It is not just a solely intellectualized experience relegated to mathematical equations. As humans, we incorporate the “heart”—meaning our feelings, empathy, and emotional responses—along with intellectual thought to form our religious experiences.¹⁸²

b. Cosmology—the end of the universe

In considering the cosmological end of our universe, with human life extinguished and the earth itself gone, Polkinghorne’s natural theology reaches beyond our scientific knowledge of the universe to accept the reincarnation and transcendence of Christ. Within life after death, Polkinghorne’s account of faith gives us courage and foundation to accept the contentions of today’s scientific knowledge. Referring to Appendix A herein and including the later argument herein of symbols, Cosmic Mother reflects the background radiation found of the Big Bang within her womb. Cited in support of this image is John 17, in which Jesus speaks, saying, “And now Father, glorify me with your very own splendor, the very splendor I had in your presence **before there was a world.**”¹⁸³ (Emphasis added.)

c. Evil and Suffering

Polkinghorne is courageous in his willingness to address issues of evil and suffering directly. He attributes their existence to what we now perceive as random acts of the Universe with the cautious belief that God must intend some ultimate good and while God acts within the

¹⁸² Dean Nelson and Karl Giberson, *Quantum Leap: How John Polkinghorne Found God in Science and Religion* (Oxford, Great Britain: Monarch Books, 2011), 161.

¹⁸³ John 17, *The Message: The New Testament in Contemporary Language*, translated by Eugene H. Peterson.

consistent principles of the anthropic universe. Polkinghorne poses this randomness within our world as how the loving God allows humans free will to determine their own path. As he reasons, a loving God does not seek to exert the tyranny of total control, but rather allows humans the free will of choice that is essential for the development of intelligent beings.¹⁸⁴

Science holds objective truth that Polkinghorne acknowledges fundamentally supports our way of life. Theology that turns to the supernatural does not give justice to the real world and tends to offer over-simplified, narrow explanations. Polkinghorne rejects “crass reductionism” and asserts that usually supernatural explanations overlook the suffering in this world that science has abated. As science has helped our lives in the past, it shall likely continue to do so in the future, a simple truth often overlooked by those who reject its general competence. The issue becomes how to direct scientific knowledge to the benefit of all humans rather than to their detriment or perhaps domination by a few. The question remains whether science can be used to discern good or evil; justice or injustice.

d. Polkinghorne as master of dialogue toward reconciliation

Polkinghorne is a master of dialogue as he respectfully seeks the ideas of others while presenting his own tightly knit arguments: “The point at issue is the extent to which taking science seriously requires us to modify orthodox belief.”¹⁸⁵ He asks directly whether science will assimilate theology and lead to fundamental changes in our Christian beliefs. As a critical realist, Polkinghorne advocates for rational, tight, intelligible theology, yet posits that science

¹⁸⁴ Keith Ward, *The Big Questions in Science and Religion* (West Conshohocken, PA: Templeton Foundation Press, 2008), 48.

¹⁸⁵ Polkinghorne, *Scientists as Theologians*, 25.

cannot explain everything. As unexplainable, he readily cites questions of life's deeper context such as its purpose, our human feelings, and the arts, and he allows discussion on conflicted points without judgment.

Polkinghorne addresses science and the miracles of revelation as a paradox, seeking to explain revelation within his theology. Although he does not specifically question whether there is a paradox at all, he notes that as our understanding of the universe expands, some miracles may be understood within the physical laws of nature. He expressly acknowledges the changes that expanded scientific knowledge can bring to our understanding of events.¹⁸⁶ Our present knowledge of science does not answer all questions, and Polkinghorne does not provide his thoughts on whether reason and revelation will constitute an actual paradox in the future or not, likely in an effort to avoid the "crass reductionism" that he finds objectionable. For now, he argues only within the knowledge he has. As part of his dialogue toward reconciliation, he asks that others do so as well.

5.2 Polkinghorne's encounter with God through experience -- his long obedience.

Polkinghorne's quest for knowledge is his quest for God. He has not passed his gifts and experience off without effort. Although Polkinghorne does not expressly state his motivations, by his actions he took his quest to heart within his faith and has offered them as his thanks and gratitude to God. It is both the harmony and the mystery of the universe that evokes Polkinghorne's sense of reverence for the Creator, yet he does not write of his scientific journey as a spiritual calling. Polkinghorne omits from his written works a deep sense of his own

¹⁸⁶ Polkinghorne, *One World*, 72-73.

feelings, and thus we are denied the enriching grit of his own religious experience. He has fostered a long obedience.

5.3 The need for a volume of Polkinghorne's collected thoughts

Within his current publications, Polkinghorne does not synthesize his thinking, but develops various themes of thought in fractional pieces. There is no composite index to his works. David Munchin opines that the most cited criticism of Polkinghorne is that he has written too many compact books that continue to return to the same themes without providing a structured synthesis of his works.¹⁸⁷ He casts the uninitiated student into the abyss of too much material with repetitious themes and no overall structure for understanding. The *Polkinghorne Reader* published in 2010¹⁸⁸, may have been an attempt to help resolve this issue, but reads in a disjointed, hard-to-understand manner, as if it were written to support classroom lectures. In frustration, the student is left without clear guidelines. John Russel concludes,

Polkinghorne does not adequately show how the contents of science (and not just its epistemology or methodology) should affect constructive theology though this sort of interaction. It is the goal stipulated by the book's subtitle [The Interaction of Science and Theology] and in the end one is left still wondering how these fields jointly address *One World*.¹⁸⁹

To have a last book that collected his thoughts within one systematic, collected volume would be an outstanding contribution.

Polkinghorne may be influenced by the Christian tradition of letter writers. For example, Apostle Paul wrote to many and never provided us with a synthesis. Letters by their very nature tend to suggest occasional thoughts that are expressed unsystematically. What makes the

¹⁸⁷ David Munchin, "Book Review: *God and the Scientist: Exploring the Work of John Polkinghorne*" in *Reviews*. doi: 10.1093/jts/flt 1 32.

¹⁸⁸ John Polkinghorne, Thomas Jay Oord, ed, *The Polkinghorne Reader: Science, Faith and the Search for Meaning*, (West Conshohocken, PA: Templeton Foundation Press, 2010).

¹⁸⁹ John Russell, "Book Review: *One World*," in *Zygon*, v 22, no 1 (March 1987), 116.

acceptance of this gentler interpretation difficult is Polkinghorne's advocacy for change and intelligible, tight argument within the theological community.

In addition, within the sciences where Polkinghorne finds his roots, publication of single experiments and their results are the professional standard. However, in theology synthesis is central to its philosophical, systematic, and synthesized underpinnings of thought.

Recently, Polkinghorne addressed the need for a collected volume of his thoughts. In the updated introduction to a previously published book *Science and Religion in the Quest of Truth*, he concurs that taken together his books cover a wide range of topics in science and religion, but they do not correspond to one synthesized volume.¹⁹⁰ He states, "The nearest I have gotten to giving a synoptic account has been two slim volumes... *Quarks, Chaos and Christianity* (1994) and *Science and Theology* (1998)."¹⁹¹ Although he refers to his *Polkinghorne Reader*, he has little to say of it. As if actually hearing him lean gently back in his chair and sigh, he writes, "After more than 30 years of reflection, this is what I have to offer."¹⁹² Perhaps this last volume may find publication after he passes, without need to endure the criticism of his peers.

5.4 To some degree Polkinghorne challenges his own moderate position

Polkinghorne is clear in his commitment to a traditional view of the Triune God and Christology. On the other hand, he also argues for natural theology to develop a bold metaphysical scheme based on rational thought and scientific understanding of the universe.

¹⁹⁰ John Polkinghorne, *Science and Religion in the Quest for Truth* (New Haven, CN: Yale University Press, 2011), xi-xii.

¹⁹¹ Polkinghorne, *Science and Religion in the Quest for Truth*, xii.

¹⁹² Polkinghorne, *Science and Religion in the Quest of Truth*, xii-xiii.

Regardless of faith or even atheism, all people experience the same physical laws. Polkinghorne concedes that the scientific understanding of an event is not necessarily how a specific culture or faith interprets such scientific understanding, but he evades the next logical step. Is it possible that the scientific understanding of an event—such as an eclipse—can be common ground for a “knowledge of unity” among all people? If so, then logically his natural theology based on scientific understanding of the universe leads to a wholly pluralist view in which all faiths reach for a “unity of knowledge” through the common understanding of science. Thus, Polkinghorne’s natural theology can be extended to a wide, inclusive context in which all faiths can seek support. Jeannine Hill Fletcher opines that theologies of religious pluralism have failed to provide an explanation of religious diversity. She poses these attempts begin and end with the ultimate mystery of the universe and its incomprehensibility.¹⁹³ Polkinghorne’s natural theology directly addresses these issues. It is the mystery that calls Polkinghorne, and his natural theology seeks its comprehensibility. It is the “unity of knowledge” that is the basis for shared understanding and a wholly pluralist point of view among faiths.

The bold extension of Christian theology is part of the Christian journey that holds its greatest challenge: **unshakeable nerve**. Leaders are all called to stand outside the conventional wisdom of their day, to be vulnerable to criticism, and even to pointed rejection, regardless of sabotage or confrontation.¹⁹⁴ Polkinghorne calls for rational inquiry that is characterized by bold, intellectual risk that ventures on “the construction of a metaphysical scheme whose justification

¹⁹³ Jeannine Hill Fletcher, *Monopoly on Salvation—A Feminist Approach to Religious Pluralism* (New York, NY: Continuum International Publishing Group, Inc., 2005), 102.

¹⁹⁴ Edwin Friedman, *A Failure of Nerve: Leadership in the Age of the Quick Fix* (New York, NY: Church Publishing, 1999), 188.

will lie in its attainment of comprehensive, explanatory power.”¹⁹⁵ Yet he does not take the risk himself.

5.5 Symbols for seeking consonance between science and theology and the suggestion of three artworks, Appendixes A, B, and C.

Both Polkinghorne and Peacocke suggest the use of symbols to seek consonance between science and theology and more open experiences from which to draw upon.¹⁹⁶ Peter Barrett opines that Polkinghorne has contributed to a new style within the arts.¹⁹⁷

Neither Polkinghorne nor Peacocke include observations from the artistic community, yet both affirm the exploratory role of sensory experience, and the arts as part of God’s plan through natural theology. For Polkinghorne, it is a realization of life’s potential.¹⁹⁸ To Peacocke, symbols remain the most “accurate and sensitive” expression “of human consciousness and personal relations” as found in the arts and theology.¹⁹⁹

5.6 Conclusion

Polkinghorne gives witness to his faith through his search for knowledge, in particular through his scientific knowledge. As a critical realist, he presents his natural theology as his quest for knowledge within the assumption of a physically consistent universe. He specifically confronts two critical issues, the cosmological end of the universe and the existence of evil and

¹⁹⁵ Polkinghorne, *Reason and Reality*, 11.

¹⁹⁶ Polkinghorne, *One World*, 8.

¹⁹⁷ Barrett, “Polkinghorne’s Contribution,” 425-446.

¹⁹⁸ Polkinghorne, *One World*, 81.

¹⁹⁹ Arthur Peacocke, *From DNA to Dean*, 200-201.

suffering. Through all his works, Polkinghorne displays a mastery of respectful dialogue, and the discipline to boundary his positions within his own knowledge, allowing that science will ultimately enlarge and change this boundary. His many books and extensive lectures give evidence of a long obedience. It is a journey of both reason and heart.

Without a written synthesis of his thoughts, the student is hard pressed to learn of Polkinghorne without courage to tackle his 38 books. Perhaps the exercise of writing his synthesized thoughts may have pushed Polkinghorne beyond the moderate position that seemingly challenged within his own thoughts. Polkinghorne does not tell us what or where his thoughts would lead if taken to their logical extension. To some degree he adopts Sonderegger's thought that in the end Christian reality is created and blessed by God. Nothing more can be said, except perhaps, a thank you and acceptance of our meager human place within the universe.²⁰⁰

²⁰⁰ Sonderegger, "The Character of Christian Realism," 453.

Conclusion

Could Polkinghorne's consonance of natural theology and science be foundation for common rational belief in the universe, and thus basis for a universal religious plurality through a unity of knowledge?

Our conception of the future molds our view of the present. If our view of the future is weak, our direction and drive towards the future suffers. The Christian sense of the future is driven by a faith belief in the second coming of Christ. Thus, Christians must look forward.²⁰¹

Polkinghorne's belief sounds in nature as physically and actually experienced. Through this he seeks connection with a transcendent Other as the organizer and Creator of the Universe. Since all people experience nature and its physical laws, this presents a wide, inclusive context in which all can seek support.²⁰² Yet Polkinghorne balks at the thought of including all religions within his call of science except to say that "the interaction of science and theology may contribute to the interaction of the world's faiths."²⁰³ This leads directly to a fundamental truth in Polkinghorne's view of the world. He quotes Eric Mascall to make his point that the world's "objectivity is not manifested by observers having the same sensory experience of it, but by their being able, through their diverse sensory experiences, to acquire a common *understanding* (sic)

²⁰¹ 1 Thessalonians 2: generally 10-15, *The Message: The New Testament in Contemporary Language*, translated by Eugene H. Peterson.

²⁰² Markham, *Understanding Christian Doctrine*, 2.

²⁰³ Polkinghorne, *Scientists as Theologians*, 63.

of it.”²⁰⁴ It is faith in knowledge that inspires Polkinghorne to pursue a “unity of knowledge.”²⁰⁵ From his usual solid, down-to-earth position, Polkinghorne modestly implies, yet does not confront, whether this quest leads one closer to God, although Polkinghorne seemingly demonstrates this position with his own quest.²⁰⁶

Polkinghorne claims to seek a rational inquiry of theology that is bold enough to construct a metaphysical scheme.²⁰⁷ He claims, “I’m a very passionate believer in the **unity of knowledge** (emphasis added)...whose truth I believe to be guaranteed by the unity of the one true God, the Creator of all reality.”²⁰⁸ Even well beyond this, Polkinghorne stresses the need for intelligible theology and the courage it takes to set forth with clarity a new, different layer of human experience that has not yet proven itself within the intellectual conversation of many theologians, yet he does not develop his concept of a unity of knowledge. His comments upon “signs and insights into a deeper rationality than that normally perceptible by us”²⁰⁹ are not addressed. Perhaps he fears himself judged by his own words that it is merely “crass reductionism.”

Polkinghorne suggests that “hope based on a God who can interact with his world in ways more particular than just the general willing of its existence is a hope which is a coherent

²⁰⁴ Polkinghorne, *One World*, 56, quoting E. L. Mascall, *Christian Theology and Natural Science* (New York, NY: Longman, 1956), 175.

²⁰⁵ Polkinghorne, *Science and Creation*, 43.

²⁰⁶ Polkinghorne, *Science and Creation*, 43.

²⁰⁷ Polkinghorne, *Reason and Reality*, 11.

²⁰⁸ Polkinghorne, *One World*, xiii.

²⁰⁹ Polkinghorne, *One World*, 90.

possibility within the framework provided by the scientific understanding of cosmic process.”²¹⁰

If all humans are subject to the same reality, one questions whether the common rules that govern such reality unite all humans. If science is the means of discovering these rules, then is science itself the work of God? If science can expose the work of God, can science then help to establish a moral basis for all humans? For example, if used within moral standards that benefit all humans, science can confront evil such as disease, poverty, and drought. Can this be done while preserving the personal relationship of all humans to their cultural idea of God, including the Christian tradition of the resurrection of Christ? If Christians firmly believe in the resurrection of Christ, do they have enough faith to expose Christianity to the challenge of both science on the one hand and all other religions on the other?

How does the Church bring the millennial generation and their progeny back to faith? And what does that faith look like? Will the educated generation that is steeped in science accept anything less than sound, tight intellectual, rational thinking of their God and values reasoned from the understanding of such God? Can science itself be the answer to whether we can resolve our need for a kind, loving, personal God with the scientific reality of our universe? We have less than 100 years to consider this before humans of mixed faith, beliefs, and cultures leave earth to colonize another planet. What will their values be, and what faith in a Creator, if any, do they take with them?

²¹⁰ Polkinghorne, *Science and Providence*, 112.

Offered are prints of acrylic artworks on canvas expressing the symbolism of Polkinghorne's "unity of knowledge." See Appendixes A, B, and C.

Bibliography

Books by Polkinghorne and related articles

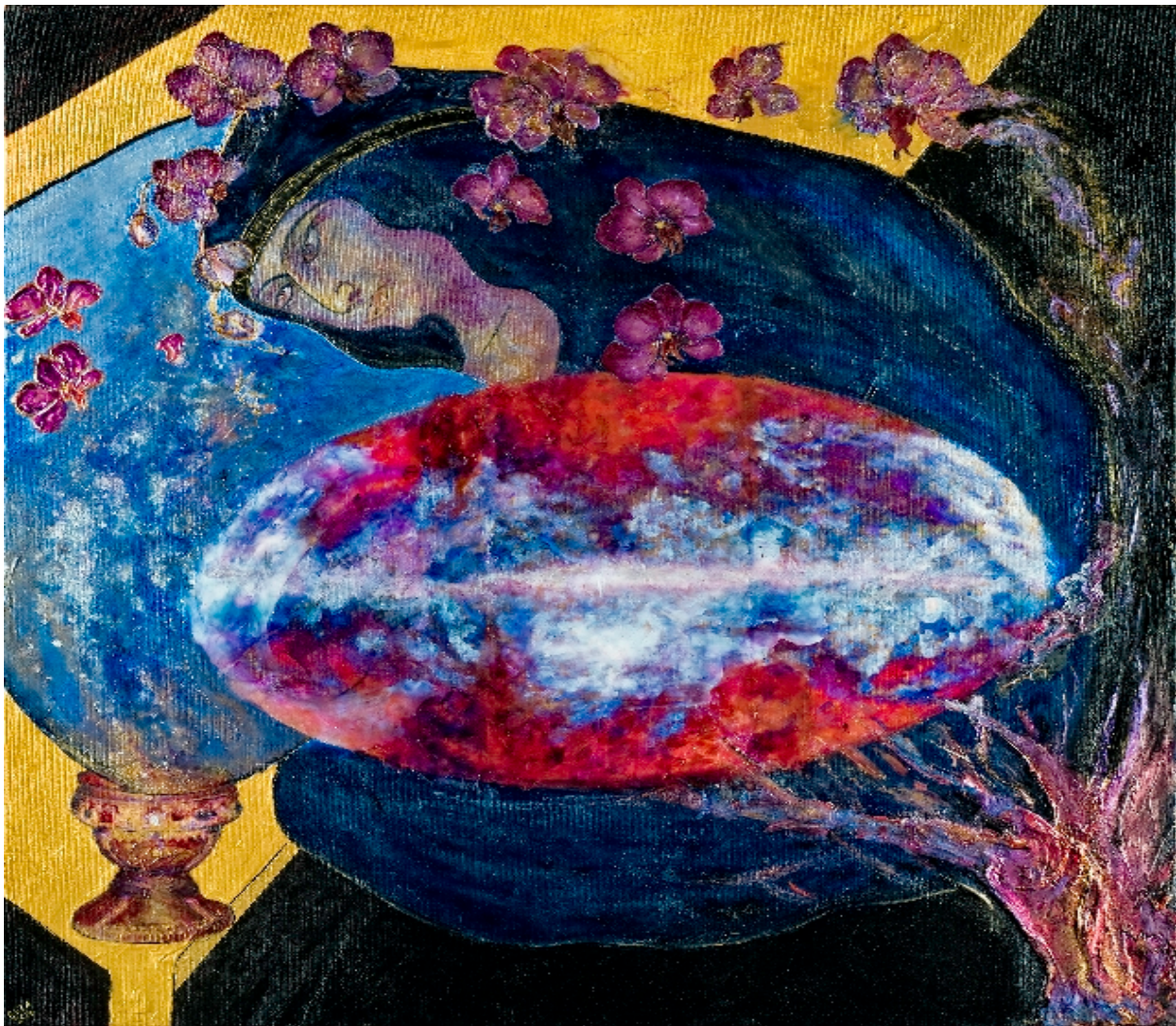
- Polkinghorne, John. *Exploring Reality: The Intertwining of Science and Religion*. London, England: Yale University Press, 2007.
- Polkinghorne, John. *From Physicist to Priest, an Autobiography*. London, England: SPCK, 2007.
- Polkinghorne, John. *One World: The Interaction of Science and Theology*. West Conshohocken, PA: Templeton Foundation Press, 1986.
- Polkinghorne, John. *The Polkinghorne Reader: Science, Faith and the Search for Meaning*. ed. Oord, Thomas Jay. West Conshohocken, PA: Templeton Foundation Press, 2010.
- Polkinghorne, John. *Reason and Reality: The Relationship Between Science and Theology*. London, England: SPCK: Trinity Press International, 1991.
- Polkinghorne, John. *Science and Creation: The Search for Understanding*. London, England: SPCK, 1988.
- Polkinghorne, John. *Science and Providence: God's Interaction with the World*. London, England: SPCK, 1989.
- Polkinghorne, John. *Science and Religion in the Quest of Truth*. New Haven, CN: Yale University Press, 2011.
- Polkinghorne, John. *Scientists as Theologians: A Comparison of the Writings of Ian Barbour, Arthur Peacocke and John Polkinghorne*. London, England: SPCK, 1996.
- Polkinghorne, John. *Science and the Trinity: The Christian Encounter with Reality*. London, England: SPCK, 2004.
- Polkinghorne, John. *The Work of Love: Creation as Kenosis*. London, England: SPCK, 2001.

Other Books, Articles, and General References

- Barbour, Ian G. "John Polkinghorne on Three Scientists-Theologians." *God and the Scientist: Exploring the World of John Polkinghorne*, eds. Fraser Watts and Christopher C. Knight. Surrey, England: Ashgate Publishing Limited, 2012.
- Barrett, Peter. "John Polkinghorne's Contribution to a New-Style Arts—Including Natural Theology." *Religion & Theology* 17 (2010): 425-446.
- Fletcher, Jeannine Hill. *Monopoly on Salvation—A Feminist Approach to Religious Pluralism*. New York, NY: Continuum International Publishing Group, 2005.
- Friedman, Edwin. *A Failure of Nerve: Leadership in the Age of the Quick Fix*. New York, NY: Church Publishing, 1999.
- Markham, Ian S. *A Theology of Engagement*. Malden, MA: Blackwell Publishing, 2003.
- Markham, Ian S. *Truth and the Reality of God: An Essay in Natural Theology*. Edinburgh, Scotland: T & T Clark, 1998.
- Markham, Ian S. *Understanding Christian Doctrine 2d ed.* Hoboken, NJ: John Wiley & Sons Ltd, 2017.
- Moore, James F. "How Religious Tradition Survives in the World of Science: John Polkinghorne and Norbert Samuelson." *Zygon* 32. No. 1 (March 1997): 115-124.
- Munchin, David. "Review: God and the Scientist: Exploring the Work of John Polkinghorne" *Reviews*. doi: 10.1093/jts/flt 1 32.
- Nelson, Dean and Karl Giberson. *Quantum Leap: How John Polkinghorne Found God in Science and Religion*. Oxford, Great Britain: Monarch Books, 2011.
- Peacocke, Arthur. *All That Is: A Naturalistic Faith for the 21st Century*. ed Philip Clayton. Minneapolis, MN: Fortress Press, 2007.
- Peacocke, Arthur. *From DNA to Dean: Reflections and Explorations of a Priest-scientist*. Norwich, UK: Canterbury Press, 2012.
- Russell, Robert John. "Eschatology and Scientific Cosmology: From Deadlock to

- Interaction.” *Zygon* 47, No. 4 (December 2012): 997-1014.
- Ruse, Michael. *Science and Spirituality: Making Room for Faith in the Age of Science*. Cambridge, NY: Cambridge University Press, 2010.
- Russell, Robert John. “Review: *One World: The Interaction of Science and Theology*.” in *Zygon* 22, No. 1 (March 1987): 113-116.
- Schwarz, Hans. “Karl Heim and John Polkinghorne: Theology and Natural Sciences in Dialogue.” *Journal of Interdisciplinary Studies* Vol. 9, Iss. ½ (1997): 105-119.
- Silva, Ignacio. “John Polkinghorne on Divine Action: A Coherent Theological Evolution.” *Science & Christian Belief* 24, No. 1 (2012): 19-30.
- Slocum, Robert Boak, ed. *The Anglican Imagination: Portraits and Sketches of Modern Anglican Theologians*. Burlington, VT: Ashgate Publishing Co., 2015.
- Sonderegger, Katherine. “The Character of Christian Realism.” *Scottish Journal of Theology* 57 (4): 451-465 (2004).
- Torrey, E. Fuller. *Evolving Brains Emerging Minds: Early Humans and the Origins of Religion*. New York, NY: Columbia University Press, 2017.
- Ward, Keith. *The Big Questions in Science and Religion*. West Conshohocken, PA: Templeton Foundation Press, 2008.

Appendix A



“Cosmic Mother with Background Radiation”

by Elta Marie Wilson 2015

38" X 38" framed; acrylic and mixed media

[Jesus speaking]: And now Father, glorify me with your very own splendor, the very splendor I had in your presence before there was a world. John 17.

Appendix B



“Symbolic Expression” by Elta Marie Wilson 2019

38” X 38” framed; acrylic and mixed media

Symbolic expression of evolving human religious experience has profoundly altered our consciousness from the Neanderthals that first buried their dead and drew on cave walls to expression of the transcendence of Christ.

Appendix C



“Unity of Christ” by Elta Marie Wilson 2019

38” X 38” framed; acrylic and mixed media

To face God through suffering and thus transform the human experience.