

# The Kalām Cosmological Argument and the Infinite God Object

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## Abstract

My overall claim in this paper is twofold: *Firstly, the activity of developing arguments in favour of the existence of the Christian God is tenable and worthwhile and, secondly, the “infinite God objection” fails to undermine the kalām cosmological argument.* Concerning the former, it is often claimed that the very activity of developing arguments in favour of God’s existence is futile. I argue, however, that such theistic arguments play an important role in the philosophy of religion, natural theology, and apologetics. Concerning the latter claim, I will attempt to show how the infinite God objection fails to undermine a notable theistic argument, namely, the kalām cosmological argument. As regards this objection, the proponents of the kalām cosmological argument face a dilemma – either an actual infinity cannot exist or God’s knowledge cannot be infinite. More specifically, this objection claims that God’s omniscience entails the existence of an actual infinity with God knowing an actual infinite number of future events and mathematical truths. My solution to this problem is that (1) God’s omniscience should be understood as *maximal knowledge*; (2) the existence of abstract objects (such as numbers and propositions) should be denied; and (3) God’s knowledge is non-propositional in nature.

**Keywords:** Kalām Cosmological Argument, Actual and Potential Infinity, Natural Theology, Omniscience

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# 1 INTRODUCTION

## 1.1 Problem Statement and Hypothesis

My overall claim in this paper is twofold: *Firstly, the activity of developing theistic arguments is tenable and worthwhile and, secondly, the “infinite God objection” fails to undermine the kalām cosmological argument.*

The existence of God is a central topic in the philosophy of religion. Indeed, the question of God’s existence has fascinated philosophers and theologians for centuries. However, is this fascination with the existence of God worthy of serious academic reflection? Is it sensible for theistic scholars (i.e. scholars who believe in the existence of a personal god or gods) to develop theistic arguments, namely, philosophical arguments in favour of the existence of God? For my part, I think this activity is sensible and, more specifically, in view of the fact that I am writing from a Christian perspective, I shall argue that it is extremely worthwhile for *Christian* scholars to advance theistic arguments.

There are two reasons why I have chosen to defend the activity of developing theistic arguments. Firstly, the proponents of theistic arguments often merely presuppose the sense in arguing in favour of the existence of God. I am amazed at how many scholars, who are actively engaged in offering theistic arguments, remain silent about the worth of this endeavour, with their silence on this issue creating the impression that the issue does not merit much thought. There have been numerous crucial objections raised to theistic arguments and, thus, it is no longer possible for any Christian wishing to argue in favour of the existence of God to ignore these objections.

Secondly, in order to try to prove that a certain theistic argument fails, it is sometimes argued that the very activity of advancing theistic proofs fails to produce sound arguments. Such an argument would, if successful, undermine any theistic argument in one fell swoop without the details of the argument even being taken into account. For example, the Christian philosopher, Roy Clouser (2009b:3), maintains that created laws (including the laws of logic) cannot “prove” the existence of a transcendent Creator and, therefore, any attempt to develop a theistic argument using logic would always be unsuccessful. If Clouser is correct, then there is, indeed, no point in offering theistic arguments as all philosophical arguments use the laws of logic. Thus, in view of the fact that I wish to defend a theistic argument, it would be beneficial for me to defend the endeavour of formulating arguments in favour of God’s existence.

However, even if it were shown that the activity of developing theistic arguments is both tenable and worthwhile, this, on its own, would not imply that there *are* any sound theistic arguments. In order to find out whether there are, indeed, any sound arguments in favour of God’s existence, it may be beneficial to start by investigating several traditional theistic arguments. In this paper I have chosen to analyse in detail one such argument, namely, the

kalām cosmological argument (hereafter KCA). The KCA has its roots in mediaeval Jewish and Islamic thought and it is currently enjoying a revival of interest from philosophers of religion. The KCA may be formulated as follows:

- (1) Everything that begins to exist has a cause of its existence.
- (2) The universe began to exist.
- (3) Therefore, there is a cause for the existence of the universe.<sup>1</sup>

The KCA is based on the impossibility of an infinite temporal regression of events. In view of the fact that modern cosmology did not evolve before the 20th century, mediaeval thinkers had to rely on philosophical arguments and not on either scientific facts or cosmological theories (such as the Big Bang theory) to support premise (2), namely, that the universe began to exist. Thus, a crucial argument in support of this premise (2) is the philosophical argument on the impossibility of the existence of an actual infinite. According to this argument, if the universe were eternal, there would have been an actual infinite series of past events, each caused by the event immediately prior to it. However, the existence of an actual infinite number of things (such as past events) is impossible and, thus, the series of past events must have had a beginning. Accordingly, the universe began to exist.

In this paper I focus on one of the most forceful objections raised against the argument on the impossibility of the existence of an actual infinite. I shall term this objection “the infinite God objection” (hereafter IGO) as, according to this objection, the Christian proponents of the KCA face the following dilemma – either an actual infinity cannot exist or God’s divine attributes cannot be infinite. I shall primarily address the problem of divine omniscience (the attribute of being all-knowing) raised by the IGO and I will argue that, although it is difficult to address the IGO objection, there is, nevertheless, a plausible response to it.

The study of the IGO forms part of a broader project that concerns the relationship between infinity and God’s divine attributes. However, this broader project is still in its early stages and, thus, not much work has been done on the IGO. Indeed, it proved difficult to find a comprehensive study on the IGO and, in order to study this objection, one needs to sift through several journal articles to find the various versions of the IGO that have been suggested. In addition, these versions of the IGO are often extremely terse and lacking in depth, while the various responses to the IGO are often extremely brief. Perhaps one of the finest discussions on the IGO is Graham Oppy’s *God and Infinity* (2011). Unfortunately, Oppy’s discussion is more of an overview of the concept of infinity within theological contexts than it is an extensive analysis of the IGO. Oppy notes that: “Even in the case of omniscience, there has been no

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<sup>1</sup>By way of the conceptual analysis of the argument’s conclusion, the proponents of the argument attempt to illustrate that the cause of the universe must possess various God-like properties, such as being beginningless, spaceless, immaterial, changeless, personal and unimaginably powerful.

*systematic* study of the kind that would be needed to address the kinds of questions [raised by the IGO]. There is a larger program of research here waiting to be carried out” (Oppy, 2011:244 [original emphasis]). It is clear, then, that a comprehensive analysis of the IGO still remains to be written, an analysis which would include an investigation of the IGO from the perspective of all the essential divine attributes, including eternity, omnipotence, omnipresence, omnibenevolence and so on. However, I believe that this study represents a step in that direction and, by addressing the IGO from the perspective of omniscience, I hope that this study will help to fill a gap in the contemporary debate on the IGO.

My research approach involved exploring the discussions surrounding the IGO in some of the leading academic journals, such as *Faith and Philosophy* and *Philosophia Christi*, and in books that have been published on the topic. The databases which I consulted included the North-West University’s Ferdinand Postma Library Catalogue as well as the university’s online one-search. I then used the information obtained from analysing these various sources to formulate my own ideas concerning the topic addressed in this paper. I will now provide a brief summary of each chapter of the paper.

Chapter 2: *Theistic Arguments*. In this chapter I briefly explore five historical events that nurtured the development of theistic arguments. I then examine the way in which theistic arguments relate to the philosophy of religion, natural theology and apologetics. Next, I respond to the four philosophical objections and two theological objections which are commonly raised against the development of theistic arguments. Finally, I conclude that theistic arguments are important because they initiate an interest in God, they shed light on theological difficulties, and they help us explore one of life’s most important questions, namely, *Does God exist?*

Chapter 3: *The Kalām Cosmological Argument*. This chapter serves to inform the reader about what the KCA is and what the most common objections to the KCA are. The chapter includes a brief history of the KCA; it presents a comprehensive description of the argument and responds to the seven common objections raised against the KCA. I conclude that the KCA is an important theistic argument that should not be ignored.

Chapter 4: *The Infinite God Objection*. In this chapter I expound on the IGO, explore various responses to the IGO, and present my response to the IGO. I conclude that a plausible response to the IGO may include the following four contentions. Firstly, when we state that God is infinite we mean that His nature is infinite in terms of *quality*, not in terms of *quantity*. Secondly, God’s omniscience is to be understood as *maximal knowledge*. Thirdly, the existence of abstract objects (such as numbers and propositions) should be denied and, finally, God’s knowledge is non-propositional in nature. I argue that such a response removes the force of the IGO.

Chapter 5: *Conclusion*. In this chapter I present a summary of my research and offer suggestions for further research of this paper’s central topic.

## 1.2 Abbreviations

CA	Cosmological Argument
IGO	Infinite God Objection
KCA	Kalām Cosmological Argument
OGIK	Objection from God's Infinite Knowledge
PSR	Principle of Sufficient Reason

## 2 THEISTIC ARGUMENTS

### 2.1 Introduction

In this chapter I defend the endeavour to develop philosophical arguments in favour of the existence of God – specifically the Christian God. For the sake of simplicity, I shall call such arguments “theistic arguments”.<sup>2</sup> Several theological and philosophical objections have been voiced against the activity of advancing theistic arguments. If successful, these objections undermine my defence of the KCA. For example, it is sometimes claimed that theistic arguments, if sound, do not prove the existence of God but merely prove the existence of a deficient “God” who possesses only a few of the properties traditionally ascribed to God. If this objection is successful, then there is no point in defending the KCA. Therefore, demonstrating the legitimacy of formulating theistic arguments reinforces my defence of the KCA.

The body of this chapter is divided into four sections. In the first section, section 2.2, I briefly explore five historical events that nurtured the development of theistic arguments, while in the second section, section 2.3, I examine the way in which theistic arguments relate to the philosophy of religion, natural theology and apologetics. In the next section, section 2.4, I respond to common objections that are raised against the development of theistic arguments and, finally, in the fourth section, section 2.5, I offer various reasons for advancing arguments in favour of the existence of God.

### 2.2 Historical Background

There is little doubt that natural theology has provoked the development of arguments in favour of God’s existence. Early Christian theologians, such as St Augustine (354–430), St Anselm (*c.* 1033–1109), and Thomas Aquinas (1225–74), were curious about the natural world, God’s relation to the world, and the relation between faith and reason. In a wide sense, “natural theology” refers to the investigations which evolved from this curiosity, although the modern understanding of the term is certainly more refined. Having its roots in seventeenth century theology, modern natural theology arose as a result of various circumstances that fuelled the endeavour to show that the natural world confirms the Christian faith (McGrath, 2001:242). The following five events that encouraged this endeavour by motivating Christians to attempt to justify the existence of God apart from divine revelation come immediately to mind.

Firstly, Nicolaus Copernicus (1473–1543) offered an unprecedented argument against the Ptolemaic view that the earth was the fixed centre of the universe. Copernicus maintained that

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<sup>2</sup>I use the term “theistic arguments” instead of “Christian arguments” because many of these arguments may be used by other theistic faiths, such as Islam and Judaism. However, since I am writing from a Christian perspective, I shall be concerned exclusively with defending the theistic arguments used within a Christian context. Thus, unless otherwise indicated, “God” refers to the Christian God and “theology” refers to Christian theology.

the earth really does revolve around the sun. This theory was further developed by Johannes Kepler (1571–1630), Galileo Galilei (1564–1642), and Sir Isaac Newton (1642–1727). This Copernican insight, which gradually became accepted by the scientific community, appeared to conflict with certain biblical passages, such as Psalms 104:5: “He set the earth on its foundations, so that it should never be moved.”<sup>3</sup> Furthermore, Copernicus’s theory caused many to question the Church’s teaching that humankind is the fixed centre of God’s creation for, if the earth is not the centre of the universe, then nor are the earth’s creatures.<sup>4</sup>

Secondly, Galileo and Newton succeeded in demonstrating that it would appear that the entire universe is governed by mathematical and physical laws. On the one hand, their work vindicated the belief that the world had been created and was actively maintained by God. It may, thus, be said that their work acted as a form of natural theology (Eddy & Knight, 2006:x–xi). On the other hand, their work was later interpreted as support for the non-theistic view that the universe is an impersonal, self-sustaining, mechanistic, and independent of God (Tarnas, 1993:280–281).

Thirdly, Charles Darwin’s (1809–82) theory of evolution by natural selection implied that even organic matter could be explained in purely natural terms and, indeed, the human mind is a “biological tool” that is merely the by-product of natural selection. Christians were then confronted with the view that “humans, animals, plants, organisms, rocks and mountains, planets and stars, galaxies, the entire universe . . . [can] be understood as the evolutionary outcome of entirely natural processes” (Tarnas, 1993:289). Thus, Darwinism challenged the narrative of the creation as found in Genesis.

Fourthly, the increase in biblical criticism cast doubt upon the reliability, authenticity, and integrity of Scripture with many beginning to recognise the Bible more as a collection of writings that had been composed by human beings and less as the inerrant Word of God (McGrath, 2001:244; Tarnas, 1993:304).

Finally, the demand for religious proof escalated with the progress of science. In his highly influential paper, *Ethics of Belief* (2008), William Kingdon Clifford (1845–79) argued that everyone is under an obligation to believe that for which they have sufficient evidence *only* and, thus, his familiar declaration that “it is wrong always, everywhere, and for anyone, to believe anything upon insufficient evidence” (Clifford, 2008:363). Clifford’s suggestion was that the responsibility to learn the truth ought to compel everyone, including Christians, to provide evidence for their beliefs. In fact, according to Clifford, it is a *sin* to hold a belief without evidence:

If a man, holding a belief which he was taught in childhood or persuaded of afterwards, keeps down and pushes away any doubts which arise about it in his mind, purposely avoids the reading of books and the company of men that call in question

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<sup>3</sup>Unless otherwise indicated, Scripture quotations are taken from the English Standard Version of the Bible.

<sup>4</sup>For a more comprehensive treatment of the effects of Copernicus’s theory, see Tarnas (1993:248–271).

or discuss it, and regards as impious those questions which cannot easily be asked without disturbing it – the life of that man is one long sin against mankind (Clifford, 2008:363).

Alister McGrath (2004:89–92) points out that Clifford wished to eliminate religion, especially Christianity, using his evidential approach. This is clear in Clifford’s warning when, quoting Coleridge’s proverb, he wrote, “He who begins by loving Christianity better than Truth, will proceed by loving his own sect or Church better than Christianity, and end in loving himself better than all” (Clifford, 2008:364).

In response to these events, Christians started to focus on using nature, such as the design of the world, in support of the truth claims pertaining to the Christian faith. Robert Boyle (1627–91), for example, began donating a substantial amount of money to funding lectures which refuted atheism (Eddy & Knight, 2006:x–xiii). Before long, Boyle’s project inspired many scholarly Christian works, including John Ray’s *The Wisdom of God Manifested in the Works of Creation* (1691), Thomas Burnet’s *Sacred Theory of the Earth* (1684), and William Paley’s *Natural Theology* (1802). As a result of works such as these, natural theology was stimulated and the enterprise of developing theistic arguments was kept alive.

## 2.3 Philosophy of Religion, Natural Theology and Apologetics

Theistic arguments are developed primarily within three main disciplines, namely, the philosophy of religion, natural theology and apologetics. This section will briefly explore these three disciplines and consider their varying approaches to theistic arguments.

### 2.3.1 The Philosophy of Religion

To better understand the philosophy of religion, it is helpful to start by defining the terms “philosophy” and “religion”. There is no universally accepted definition for the term “philosophy”. Nevertheless, philosophy is often described as a *second-order discipline* (Moreland & Craig, 2003:12–13). Biology, for example, is a *first-order discipline* that studies living organisms such as plants and animals. However, the philosophy of biology studies the discipline known as “biology” and asks questions such as “Is it ethical to perform experiments on living animals?” Philosophy is concerned with studying abstract concepts such as free will, and deep questions such as the meaning of life within a rational paradigm. It is possible to philosophically study the theoretical basis of any discipline or branch of knowledge such as science, biology, mathematics and religion. Thus, it is possible to define philosophy as a second-order discipline that critically and rationally examines first-order disciplines.

As is the case with philosophy, it is surprisingly difficult to define the term “religion”. The reason for this is because, as Roy A. Clouser (2005:9) points out, the term “religion” is used

to describe various things, including doctrines, beliefs, organisations and large-scale traditions such as Hinduism, Buddhism, Christianity and Islam. In order to address this problem, Andrew Eshleman (2008:4) argues that a definition of religion should (i) be broad enough to include what is generally recognised as a religion; (ii) be able to distinguish commonly recognised religions from what is not a religion; and (iii) allow for some uncertain cases. Eshleman goes on to present the following definition of religion:

By means of an interwoven set of symbols, narratives, doctrines, rituals, ethical prescriptions, and social institutions, a religion aims to provide an appropriate way of being related cognitively, emotionally, and behaviorally (both individually and collectively) to that which is conceived of as Ultimate Sacred Reality (Eshleman, 2008:4).

I shall follow Eshleman in defining a religion, in essence, as a set of guiding principles (such as Scripture) underlying the way in which members of the religion in question ought to relate to the ultimate sacred reality (whatever that ultimate sacred reality may be).

Accordingly, the philosophy of religion may be understood as the second-order discipline of religious studies. As such, it involves numerous tasks, including defining “religion”, exploring the coherence of different religions, analysing the concept and nature of God, developing and investigating various arguments for and against the existence of God and examining the effect of religion on both the individual and society. As regards theistic arguments, the philosophers of religion attempt to develop these arguments without any religious prejudices and, thus, these arguments depend on theologically neutral premises that do not presuppose the truth of uniquely theological claims, such as the claim that the Bible is the inerrant Word of God. Generally, the goal of the philosophy of religion is not to *prove* the existence of God, but to *investigate* whether or not there are sound arguments that support the existence of God. Accordingly, philosophers who study theistic arguments need not be theists themselves.

### 2.3.2 Natural Theology

There are various contemporary definitions of “natural theology” which help to reveal the essential features of this discipline. Although one writer may define natural theology in terms of the features neglected by another writer, their different definitions do not necessarily conflict. For example, if Jones defines “cat” as a four-legged animal and Smith defines “cat” as a carnivorous mammal with soft fur, then Jones’ definition does not contradict that of Smith. In fact, the two definitions together provide a more comprehensive definition of “cat.” Similarly, it may prove helpful to consider the various definitions of natural theology.

Natural theology is commonly said to be:

- “The attempt to provide proofs or arguments for the existence of God” (Plantinga, 1991:287).

- The endeavour to deduce the wisdom of God from the order and beauty of the universe (Eddy & Knight, 2006:ix).
- The branch of theology that attempts to justify belief in the existence of God without the help of divine revelation (Craig & Moreland, 2012:ix).
- The philosophical approach of studying the existence and nature of God apart from divine revelation (Taliaferro, 2012:1).
- The exercise of attempting to support religious beliefs – and not merely the existence of God – by presenting arguments that depend on theologically neutral premises (Alston, 1991:289; Brümmer, 2001:1).
- The rational exploration into the claim that theism offers the best explanation for the nature and existence of reality. Natural theology is distinct from *revealed theology*, the study of God based on authoritative Scripture, since revealed theology is not built up on the foundation of theistic metaphysics (Hebblethwaite, 2010:196).
- “The use of the wonders of creation to attract unbelievers, so that they are open to the gospel message” (Maatman, 1996:177).
- The field concerned with the link between the observable world and another transcendent realm (McGrath, 2011:12).

Although these definitions are not without controversy, I use them to formulate my definition of natural theology as follows:

Natural theology is the attempt to provide rational, philosophical arguments that (i) rely on theologically neutral premises, and (ii) support the existence and nature of God.

At first, this definition appears to be identical to the task within the philosophy of religion that studies theistic arguments. However, there are three subtle differences between these two disciplines. Firstly, the final goal of natural theology is to *support* the existence and nature of God and, thus, the term “natural *theology*”. On the other hand, the philosophy of religion merely *inquires* into the existence of God. Secondly, it has been theists, especially Muslim, Jewish and Christian thinkers, who have contributed the most to the field of natural theology, although theists certainly do not dominate the philosophy of religion. Thirdly, those engaged in natural theology need not be professional philosophers. Alister McGrath, for example, is a theologian, scientist and historian, who is actively engaged in natural theology. Although the theistic arguments developed within natural theology are philosophical in nature, this does not automatically disqualify non-philosophers from the discipline.

### 2.3.3 Apologetics

In a Christian context, apologetics is the branch of theology that tries to provide rational arguments in support of theological truth claims. Apologetics may be broadly categorised into two types, namely, *positive* apologetics and *negative* apologetics. The purpose of positive apologetics is to demonstrate that there are sound arguments supporting Christianity, while the purpose of negative apologetics is to demonstrate that there are no sound arguments refuting Christianity. Both these types may, in turn, be subdivided into two categories, namely, natural theology and Christian evidences. With respect to natural theology, positive apologetics attempts to offer arguments in support of the existence of God (theistic arguments), while negative apologetics tries to defend the nature of God against objections. With respect to Christian evidences, positive apologetics tries to demonstrate that Christian truth claims are true (for example, by appealing to fulfilled prophecy), while negative apologetics attempts to defend the Bible against biblical criticism and contemporary science.

It is, thus, clear that the philosophy of religion, natural theology and apologetics often overlap in actual practice. In developing theistic arguments, positive apologetics enters into natural theology, while natural theology often involves the philosophy of religion. Furthermore, most Christian apologists are professional philosophers and are, thus, active in all three disciplines. As a result, certain arguments, such as the ontological, cosmological, teleological and moral arguments form part of all three disciplines. I am personally involved in each discipline and, thus, I will address the central thesis of this paper from that standpoint. Nonetheless, I am not concerned with defending any particular discipline; rather, the following two sections focus on the validity of developing theistic arguments, regardless of discipline.

## 2.4 Objections to Advancing Theistic Arguments

Objections to the activity of advancing theistic arguments may be categorised into two groups, namely, theological objections and philosophical objections. The theological objections attempt to interdict, through theological considerations, any attempt to argue in favour of the existence of God, whereas the philosophical objections attack the sense of trying to prove God. I am primarily concerned with the philosophical objections. However, in view of the fact that theological objections concern Christian philosophers, I shall also examine two common theological objections.<sup>5</sup>

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<sup>5</sup>Space constraints prevent me from responding to numerous other objections and, thus, I have chosen to respond to the few objections which I find the most forceful.

### 2.4.1 Philosophical Objections

#### 2.4.1.1 Created Laws Cannot Demonstrate a Transcendent Creator

**Precision:** Roy Clouser advances the following objection, declaring,

Whatever can be proven using the laws of proof – whether mathematical or logical – is not the creator of the laws of proof by whom they were brought into existence. So without realizing it, the thinkers who tried to prove God’s existence . . . unintentionally demoted him to what is in fact a creaturely level of existence. And this is why I say that whatever can be proven would thereby not be God (Clouser, 2009b:3).<sup>6</sup>

Clouser, as I understand him, is claiming that arguments in favour of the existence of God reduce God to a created being, with these arguments assuming that God depends on the laws of logic, for God exists only if His existence is logical. However, because God transcends reality – He is the creator of all things – *created* laws of logic cannot be used to demonstrate God’s existence. Theistic arguments, therefore, end up “proving” a non-transcendent being that is certainly not God. In other words, it is not possible for created laws to demonstrate a transcendent Creator.

**Response:** There are two reasons, I believe, why Clouser’s objection is unsuccessful. Firstly, Clouser assumes that God designed the “laws of proof” in such a way that they cannot establish either His nature or His existence. But why think this? Surely an all-powerful and all-loving God can, and perhaps would even desire to, make His existence knowable through logic. In fact, in Romans 1:19–21, Paul teaches that God’s existence can be known through creation. Paul does not exclude logic from “creation”. Moreover, many theistic arguments, if successful, *do* establish God’s transcendence, necessary existence, moral perfection, incorporeality, ultimate wisdom and self-revelation in Christ. Therefore, it seems rather more plausible that God created the laws of logic in such a way that logical arguments do not demote God to the status of creature, but rather support the doctrine that God is the only non-dependent reality.

Secondly, Clouser’s objection is self-referentially incoherent. Clouser’s argument, in essence, is that we cannot use created laws to prove God’s existence, for God is not subject to these laws. He writes: “Since God is the creator of all the laws of creation there is no hope of our using any of them to construct an account of His uncreated being by doing rationalistic metaphysics or theology” (Clouser, 2005:231). According to Clouser’s argument, we cannot use the laws of logic to prove *any* part of God’s nature, for all of God’s nature, such as His goodness, is not

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<sup>6</sup>Clouser sympathises with Herman Dooyeweerd (1894–1977), for elsewhere Clouser explains, “Dooyeweerd also rejected every attempt to prove God’s existence, holding instead that ‘Whatever can be proven would thereby not be God.’ The reason is that since the being of God is the creative origin of everything including the laws of proof, it is not subject to those laws. Thus attempts to prove his existence inadvertently demote him to the status of a creature by subjecting him to the laws of creation rather than maintaining him as the divine origin of all laws” (Clouser, 2009a:5, note 4).

subject to created laws. Thus, Clouser’s argument may be written in the *modus ponens* form as follows:

1. If God created the laws of logic, then God’s nature cannot be demonstrated using these laws.
2. God created the laws of logic.
3. Therefore, God’s nature cannot be demonstrated using the laws of logic.<sup>7</sup>

But this argument is clearly self-refuting, for it attempts to use the laws of logic to demonstrate that God’s nature cannot be demonstrated using the laws of logic. Thus, since this argument is a logical argument it should, according to itself, be rejected!<sup>8</sup>

#### 2.4.1.2 Postmodernism Removes Any Need for Theistic Arguments

**Precision:** The objection here is that we are living in a postmodern ethos, which is relativistic regarding truth. Therefore, people today will pay no attention to the objective truth claims of arguments in favour of the existence of God. Stanley J. Grenz points out:

Postmodernism has tossed aside objective truth. ... This rejection ... not only leads to a skepticism that undercuts the concept of objective truth in general; it also undermines Christian claims that our doctrinal formulations state objective truth. ... All human interpretations – including the Christian worldview – are equally valid because all are equally invalid. ... At best, say the postmoderns, we can judge these interpretations only on the basis of pragmatic standards, on the basis of “what works” (Grenz, 1996:163–164).

Thus, the objection concludes that there is no need for theistic arguments in our postmodernist culture.

**Response:** Two points may be made here. Firstly, this relativistic postmodernism is self-refuting, for postmodernists have to assume that their claims concerning relativism are, themselves, objectively true.<sup>9</sup>

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<sup>7</sup>If Clouser wishes to argue that God’s existence *only* cannot be established through created laws, then he needs to support this with an argument that does not refer to the fact that any part of God’s nature cannot be established through created laws.

<sup>8</sup>Clouser’s objection reminds me of the common claim that: “We can know nothing about the transcendent God”. This, in itself, is a knowledge claim about the transcendent God.

<sup>9</sup>Paul Copan remarks that, “Relativism claims to speak universal truth about at least *one* thing – namely, that someone’s ‘truth’ can be someone else’s falsehood – and thus contradicts itself by claiming nothing is true or false. Why believe the relativist if he has no truth to utter? ... To be consistent, the relativist must say, ‘Nothing is objectively true – including my own position. So you’re free to accept my view or reject it’” (Copan, 2009:27 [original emphasis]).

Secondly, we do not live in a postmodern ethos. William Lane Craig (2008:18) notes: “People are not relativistic when it comes to matters of science, engineering, and technology; rather, they’re relativistic and pluralistic in matters of religion and ethics.” When a person boards an aircraft, for example, in all likelihood, they believe the objective truth that the aircraft will fly them to their destination safely. Few people, if any, believe that the claim that “airplanes are generally reliable” is true for those who believe it, but false for those who do not! It is clear, then, that our culture is extremely modernist and, thus, the need for theistic arguments remains.

### 2.4.1.3 Theistic Arguments are Unnecessary for Justifying Belief in God

**Precision:** The critic claims that belief in God does not require arguments and evidence to be justified and, therefore, it is pointless to formulate theistic arguments. The critic may allude to Alvin Plantinga’s “reformed objection” to natural theology. Plantinga (1983; 1991; 2000) argues that belief in God is a properly basic belief with respect to justification and warrant.<sup>10</sup> Belief in God is *justified* because the Christian is “within his epistemic rights, is not irresponsible, is violating no epistemic or other duties in holding that belief” (Plantinga, 2000:178), while belief in God is *warranted* because God has designed our cognitive faculties to “produce true beliefs about God” – beliefs that constitute knowledge (Plantinga, 2000:179). Thus, according to Plantinga, theistic arguments are unnecessary to justify belief in God.

The Christian critic may further support Plantinga’s philosophical model by appealing to Scripture. Hence, the Christian critic may argue that Scripture teaches, firstly, that the testimony of God’s Spirit is sufficient for persons to know that God exists (John 16:7–11), and, secondly, that Christians do not need arguments to reassure them of their faith because “the Spirit himself bears witness with our spirit that we are children of God” (Romans 8:16). Therefore, according to the critic, both Scripture and Plantinga’s model trivialise the role of theistic arguments.

The conclusion of this objection is that theistic arguments are unnecessary and futile and that they benefit no one. Thus, rather than arguing over the existence of God, philosophers ought to devote their time to working on more urgent issues.

**Response:** This objection is a *non sequitur*. The conclusion that “theistic arguments are futile” does not necessarily follow from the contention that arguments are unnecessary to justify one’s belief in the existence of God. The objection clearly confuses strong theistic evidentialism with the activity of formulating theistic arguments. According to theistic evidentialism, a person must have supporting evidence for his/her religious belief if it is to be justified. However, advocates of theistic arguments do not necessarily make such an assertion. We may affirm that

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<sup>10</sup>A *properly basic belief* is a belief that is not justified by nor is it based on other beliefs. For example, the belief *that I exist* is self-evident and properly basic.

the Holy Spirit communicates God’s truth to unbelievers and reassures believers while we may also agree with Plantinga that belief in God is properly basic. However, this does not mean that we should abandon theistic arguments altogether.

Furthermore, why assume that the only use of theistic arguments is to justify belief in God? These arguments may have other important functions (which we will explore below). Plantinga admits that “even if such [theistic] arguments are not needed for theistic belief to have warrant . . . it doesn’t follow that they cannot play the role of *increasing* warrant, and *significantly* increasing warrant” (Plantinga, 1991:311 [original emphasis]). Also, “it doesn’t follow that theistic belief can’t get warrant by way of argument from other beliefs; nor does it follow that natural theology and more informal theistic argument is of no worth in the believer’s intellectual and spiritual life” (Plantinga, 2000:179, note 16). Therefore, as Plantinga himself points out, the objection does not negate the activity of formulating theistic arguments.

#### 2.4.1.4 Theistic Arguments Cannot Prove all of God’s Divine Attributes

**Precision:** This objection states that theistic arguments, even if successful, do not demonstrate a god who possesses all the properties ascribed to the Christian God and, therefore, theistic arguments fail to prove God. This point is succinctly made by Richard Dawkins, who, commenting on Aquinas’ cosmological argument, protests:

Even if we allow the dubious luxury of arbitrarily conjuring up a terminator to an infinite regress and giving it a name, simply because we need one, there is absolutely no reason to endow that terminator with any of the properties normally ascribed to God: omnipotence, omniscience, goodness, creativity of design, to say nothing of such human attributes as listening to prayers, forgiving sins and reading innermost thoughts (Dawkins, 2006:77-78).

Dawkins’ criticism may be applied to virtually all the arguments for God’s existence. For example, if successful, the moral argument only succeeds in establishing a being in which goodness is grounded, the fine-tuning argument merely demonstrates a cosmic designer, while St Anselm’s (c. 1033–1109) ontological argument fails to evince the Christian God. Furthermore, these arguments cannot prove the central Christian teachings, such as “the covenant of grace” (Barth, 1962:50). Accordingly, all theistic arguments are inadequate.

**Response:** This objection commits the fallacy of composition. It assumes that, because each individual theistic argument cannot conclude to a being possessing the core properties ascribed to God, it follows that a group of such arguments *together* cannot conclude to such a being. This is clearly fallacious because merely a few successful arguments for God’s existence that are amalgamated are able to demonstrate the Christian God. For example, if the ontological argument, cosmological argument, moral argument and argument for Christ’s resurrection are

valid, together they may conclude to a being who is self-existent, spaceless, timeless (at least without creation), beginningless, immaterial, and personal; who has maximal power, knowledge and goodness; and who has revealed himself in Jesus of Nazareth. Such a being may, then, be said to be the Christian God.

## 2.4.2 Theological Objections

### 2.4.2.1 Theistic Arguments Divert One From God

**Precision:** This objection comes in two forms. The first form asserts that arguments and evidence may divert one's focus from God to the extent that one neglects God Himself. Those truly seeking God should not chase after arguments, but should rather turn to the God revealed in Scripture. Similarly, the study of theistic arguments may easily diminish the more important study of God through Scripture. It is best, therefore, to avoid the study of theistic arguments.

According to the second form, theistic arguments produce distorted views of God with religiously neutral premises always leading to conclusions that perceive God incorrectly. "Apart from and without Jesus Christ," declares Karl Barth (1886–1968), "we can say nothing at all about God and man" (Barth, 1962:50). For Barth, any view of God developed apart from revelation "is never the knowledge of God as Lord and God. It is never the truth. It is a complete fiction, which has not only little but no relation to God" (Barth, 1962:54). Similarly, Blaise Pascal (1623–62) states,

All those who claimed to know God and to prove him without Jesus Christ only had impotent proofs. . . . Without Scripture, without original sin, without the necessary mediator who was promised, and arrived, we cannot absolutely prove God, nor teach either correct doctrine nor correct moral values (Pascal, 1999:63).

Thus, it would appear that both Barth and Pascal imply that arguments in favour of God's existence that are based on theologically neutral premises cannot succeed for they might only demonstrate a "God" contrary to the God revealed in Scripture.

**Response:** The first form of the objection is, in fact, a warning and not an objection. Christians should heed this warning for there is a danger that one may allow the study of theistic arguments to divert one's attention from God. However, this warning may apply to many things. For example, a person may allow his/her work, studies and hobbies to divert him/her from God. Nevertheless, although Christians should bear this danger in mind this does not mean they should shun these activities. Thus, what emerges from the objection is that one should carry out the activity of formulating theistic arguments with caution but not avoid the activity.

The second form assumes that theistic arguments conflict with revealed theology. However, this assumption is not necessarily true. Although theistic arguments do not provide a complete theological description of God, these arguments may be used to *support* certain theological

claims about God, such as His self-existence, His maximal greatness and His perfect goodness. Furthermore, the “God” whom many theistic arguments attempt to demonstrate corresponds, to a remarkable degree, with the Christian view of God.

#### 2.4.2.2 Theistic Arguments are Unbiblical

**Precision:** Andrew Moore (2010:130–134) argues that Paul’s message in Romans 1:16ff. implies that Christians should avoid natural theology and, thus, theistic arguments. According to Moore, v. 19ff. indicates that knowledge of God revealed through nature “has not been subjectively appropriated in a way that could lead to life rather than to condemnation” (Moore, 2010:131). In other words, pursuing knowledge of God apart from revelation leads us *away* from salvation and not to it while it causes us to “exchange the truth about God for a lie and [worship] and [serve] the creature rather than the Creator” (v. 25). Thus, it would appear that theistic arguments provide unreliable knowledge about the Christian God. Moore concludes that “Paul provides no ground for us to suppose that Christians ought to do antecedent natural theology. Not only does he not endorse it, his claims in Romans 1:18ff. imply that Christians should avoid it” (Moore, 2010:134).

**Response:** Three points should be raised here: Firstly, Romans 1:18–25 rebukes sin, but not the activity of formulating theistic arguments. Paul states that “they are without excuse” because it is possible to perceive God’s divine nature and existence in creation. Who are the “they” to whom Paul is referring? Simply, those “who by their unrighteousness suppress the truth” (v. 18). Thus, according to Paul, it is *sin* (unrighteousness), and not *theistic arguments*, that cause people to shun the truths of God (vv. 1:19–20; 25).

Secondly, theistic arguments appear to harmonise with Romans 1. Paul is clear that, although many truths of God are revealed in Scripture only, some truths may be known through nature.<sup>11</sup> God infused the universe with evidence of Himself, evidence that we are expected to acknowledge. According to Brian A. Davies (1977:265), Romans 1 does not disqualify natural knowledge of God for it is God’s desire that such knowledge be available. Natural theology and theistic arguments help us articulate the knowledge that God has revealed through creation and, therefore, it is a gross misinterpretation to say that Paul is arguing against the activity of developing arguments in favour of God’s existence.

Thirdly, when considering Scriptural teachings regarding the relationship between faith, reason, and nature, it becomes evident that, together, these teachings support the activity of arguing for the existence of God. Firstly, Scripture encourages the use of reason and argumentation to defend Christianity. Paul, for example, reasoned with the Jews in an attempt to

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<sup>11</sup>The New Testament scholar, Douglas J. Moo, writes that “Rom. 1:19–21 teaches that true knowledge of God is available in nature and that people apart from God’s revelation in Christ come to know this truth about God” (Moo, 1996:123).

convince them about God (Acts 17:2–3; 19:8). Elsewhere, Paul declares that Christians ought to “destroy arguments and every lofty opinion raised against the knowledge of God, and take every thought captive to obey Christ” (2 Corinthians 10:5). In addition, Jude remarks that it is necessary for the Christian faith to be defended (Jude 3). Similarly, Peter commands all Christians “Always [be] prepared to make a defense to anyone who asks you for a reason for the hope that is in you” (1 Peter 3:15). Thus, Christians have a duty to defend their faith rationally.

Secondly, the Old Testament scriptures teach that nature points to God. The prophet Isaiah, for example, argues that pagan gods and idols are inadequate explanations for our marvellous world and that creation requires a far more powerful creator, which could only be Israel’s God (Isaiah 44–45). Psalm 104 focuses on creation, and not divine revelation, as evidence of God’s majestic works while Psalm 19 begins by marvelling at the way in which the universe demonstrates God’s glory – “The heavens declare the glory of God, and the sky above proclaims his handiwork. Day to day pours out speech, and night to night reveals knowledge” (vv. 1–2).

Thirdly, Scripture teaches that God’s nature and existence can be known through creation (Romans 1:18–21; 2:14–16; Acts 17:24–25, 29) and that natural revelation “witnesses” to God:

[God] made the heaven and the earth and the sea and all that is in them. In past generations he allowed all the nations to walk in their own ways. Yet he did not leave himself without witness, for he did good by giving you rains from heaven and fruitful seasons, satisfying your hearts with food and gladness (Acts 14:15–17).

Fourthly, the Apostles argue that Christ’s resurrection was evidence that he was the Messiah (Acts 2:22–32; 17:31; 1 Corinthians 15:1–9). In fact, Jesus Himself appeals to His works and miracles to prove His divine status (John 10:25). When Philip asks Jesus to reveal God the Father to them, Jesus responds, “Believe me that I am in the Father and the Father is in me, or else believe on account of the works themselves” (John 14:11). Thus, Scripture is clear: arguments may be used to try show how creation and Christ’s works and resurrection testify, in some way, to the nature and existence of God.<sup>12</sup>

## 2.5 The Importance of Theistic Arguments

We have seen how various objections to the activity of formulating theistic arguments fail. This does not, however, imply that this enterprise is important and, thus, three factors supporting the significance of theistic arguments will now be discussed.

### 2.5.1 Theistic Arguments Initiate Interest in God

From a Christian perspective, theistic arguments are important because they may kindle a non-theist’s interest in God, propelling the non-theist to explore the existence of God further.

<sup>12</sup>James Barr, who “dislikes” natural theology, admits after intensive study that “the Bible does imply something like natural theology and makes it impossible for us to avoid the issues that it involves” (Barr, 1994:103).

In fact, many attest to the role theistic arguments have played in their coming to Christ. For example, C.S. Lewis (1955), Lee Strobel (1998) and also the prominent philosopher J.P. Moreland (2009:133–138) all recall how the arguments for God’s existence were among the several factors that caused them to renounce atheism and embrace Christianity. Numerous similar stories have been shared, testifying to the importance of these arguments.<sup>13</sup>

### 2.5.2 Theistic Arguments Help Clarify Philosophical and Theological Difficulties

Theistic arguments often require us to explore unclear philosophical and theological issues. For example, the KCA leads us to consider the philosophy of time, God’s relationship to time, the philosophy of mathematics and God’s omniscience. These topics are all relevant to both philosophers and theologians with theistic arguments compelling philosophers not to ignore these important topics.

### 2.5.3 Theistic Arguments Address One of Life’s Most Important Questions

I am convinced that the question of God’s existence is one of the most important questions one may ask. What we believe about the existence of God has far-reaching effects on the way in which we live our lives. For example, a person who believes that God does not exist may live without any sense of obligation to serve any “god”. Such persons would not derive their moral obligations from Holy Scripture, but from elsewhere, perhaps from science, or they might have no moral obligations at all. On the other hand, a person who believes that God does exist may believe he/she has the opportunity to learn to know this unimaginably powerful God through a personal relationship and, thus, such a person may seek this relationship in his/her life. Such a person may, moreover, subscribe to the ethical conduct revealed in Scripture. More importantly, however, the existence of God affects our view of eternity, that is, our view of the afterlife, for example, whether or not heaven and hell exist. Accordingly, reflecting on God’s existence is of the utmost importance and theistic arguments may help theists and non-theists alike in their journey of contemplating the divine.

## 2.6 CONCLUSION

In this chapter I have defended the endeavour to formulate theistic arguments, namely, those arguments that attempt to establish the existence of God apart from divine revelation. The urgency of theistic arguments escalated between the sixteenth and eighteenth centuries as a result of certain scientific and philosophical developments that had threatened the Christian faith. Although many theologians and philosophers have been enthusiastic about theistic arguments, others have not shared this enthusiasm. However, as we have seen, some of the most forceful

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<sup>13</sup>For such personal statements, one simply has to read through the testimonials found at <http://www.reasonablefaith.org/testimonials>

objections to the activity of advancing arguments for God's existence are unsuccessful and this activity is still necessary today. Not only do theistic arguments initiate an interest in God, but they shed light on theological difficulties and help us explore one of life's most important questions, namely, *Does God exist?*

In view of the fact that theistic arguments should not be dismissed without investigation, the KCA should also not be dismissed out of hand for this argument is itself a theistic argument. I have, therefore, defended the first part of my overall claim in this paper, namely, *The activity of developing theistic arguments is tenable and worthwhile*. In the next chapter I examine the KCA in detail in preparation for a defence of the second part of my overall claim, namely, that the infinite God objection fails to undermine the KCA.

## 3 THE KALĀM COSMOLOGICAL ARGUMENT

### 3.1 Introduction

Richard Kearney (2011:xi) correctly perceives that “the God question is returning today with a new sense of urgency, . . . compelling us to ask what we mean when we speak of God.” In other words, we are currently witnessing a renaissance in the philosophy of religion<sup>14</sup> with contemporary philosophers fervently studying the nature and existence of God. One vibrant field of study within the philosophy of religion is that of the cosmological argument (hereafter CA) in favour of God’s existence. Although the CA originated with Plato (*c.* 429–347 BC) and Aristotle (384–322 BC),<sup>15</sup> it was rigorously developed by Islamic, Jewish and Christian intellectuals. Versions of the argument have been defended by such prominent thinkers as Plato, Aristotle, Philoponus, ibn Sīna, al-Ghazālī, ibn Rushd, Maimonides, Aquinas, Locke, and Leibniz and by contemporary scholars such as Stuart Hackett (1957), Bruce Reichenbach (1972), William Lane Craig (1979), David Oderberg (2002), Richard Swinburne (2004), Mark Nowacki (2007), and Alexander Pruss (2012).

The CA is more an argument type than a particular argument. Its general pattern begins with familiar facts about the world and it then uses the Principle of Sufficient Reason (hereafter PSR) which, very simply, demands that there be an explanation or cause of these facts – to establish a First Cause of or a Sufficient Reason for the cosmos. While not shown to possess every property ascribed to God, this First Cause is shown to possess certain divine properties. Therefore, as Richard Gale (2007:36) points out, a standard CA comprises the following three components: (1) one or more contingent existential fact(s), (2) a version of the PSR requiring an explanation of these facts, and (3) an explanatory argument for why a God-like being is the best explanation for these facts.

Two common forms of the CA include the argument from contingency and the argument from the impossibility of an infinite regress, known as the kalām cosmological argument (KCA). This chapter will focus on a thorough exploration of the KCA and, thus, it will prepare the way for my defence of the argument. Thus, the chapter contains a brief history of the KCA (section 3.2) and a comprehensive description of the argument (3.3) and then responds to common objections raised to the KCA (3.4).

<sup>14</sup>This renaissance is obvious, given the numerous companions to the philosophy of religion published in the last twenty years. See, for example, the companions by Davies (2000), Rowe (2007), Pojman and Rea (2008), and Taliaferro and Draper (2010).

<sup>15</sup>See Plato’s *Laws* (893–896) and Aristotle’s *Physics* (VIII, 4–6) and *Metaphysics* (XII, 1–6).

## 3.2 Historical Background

The KCA is the result of certain Greek, Islamic, Jewish, and Christian philosophical contributions to the development of the CA. This section will explore the contributions made by Aristotle, Philoponus, al-Ghazālī, and Craig.

### 3.2.1 Aristotle

Aristotle is well known for his argument for an “unmoved mover.” According to Aristotle, all things that are in motion, such as a rolling stone, are moved either by themselves or by something apart from themselves (*Physics*, VIII 4, 255b32–256a3). However, only a mind is able to move itself or cause motion while being itself unmoved (*Physics*, VIII 5, 256b13–256b27). Aristotle writes that “the stick moves the stone and is moved by the hand, which again is moved by the man; in the man, however, we have reached a mover that is not so in virtue of being moved by something else” (*Physics*, VIII 5, 256a7–256a10). Furthermore, Aristotle argues that “it is impossible that there should be an infinite series of movers, each of which is itself moved by something else, since in an infinite series there is no first term” (*Physics*, VIII 5, 256a18–256a20). Thus, there must be an unmoved mover that sets everything else in motion.

It would appear, however, that Aristotle’s distinction between an actual and potential infinite (*Physics*, III 6) has had a profound influence on the development of the KCA. According to Aristotle, an *actual* infinite is a completed collection of infinitely many distinct members. The number of members in such a collection is greater than any natural number 0, 1, 2, 3, . . . . Mathematicians today define an actual infinite series as a series that may be placed into an one-to-one correspondence with a part of itself (Huntington, 2003:6), i.e., each member in the series may be paired with one, and only one, member of a subclass of the series. This type of infinity differs from a *potential* infinite, which is a collection that is increasing toward infinity as a limit but never reaches it. For example, one more number may always be added to the series 1, 2, 3, . . . , but it is not possible to complete the process of adding more numbers. Similarly, the process of dividing a magnitude (e.g. 1, 0.5, 0.25, 0.125 . . . ) is potentially infinite only since it will never be exhausted. A potentially infinite collection, then, is best described as an indefinite collection.

With this distinction, Aristotle argues that an actually infinite magnitude is impossible (*Physics*, III 5). Although something may be infinitely divisible or susceptible to infinite addition, this type of infinity cannot ever be fully actualised. Therefore, a potentially infinite magnitude only exists.

### 3.2.2 Philoponus

John Philoponus (c. 490–570), the influential Christian philosopher, scientist and theologian, was intrigued by Aristotle’s unique concept of infinity. In his commentary on Aristotle’s *Physics*

(517), Philoponus refutes the notion of an eternal universe.<sup>16</sup> He develops his arguments further in *de Aeternitate Mundi contra Proclum* (529), in which he replies to Proclus' (c. 412–85) eighteen arguments for the eternity of the world. Philoponus' most influential argument makes use of the concept of infinity to show that the universe cannot be eternal. In other words, it *must* have had a beginning.<sup>17</sup>

In order to thoroughly grasp Philoponus' argument about the impossibility of an actual infinite, I will begin by quoting, at some length, an important section from his *de Aeternitate* (529).

So, since past time will be actually infinite, if the *kosmos* is uncreated, the individuals which have come into being in that infinite time must also be actually infinite in number. . . . But it is in no way possible for the infinite to exist in actuality, neither by existing all at once, nor by coming into being part at a time. . . . If it comes into being part at a time, one unit always existing after another, so that eventually an actual infinity of units will have come into being, then even if it does not exist all together at once . . . it will have come to be traversed. And that is impossible: traversing the infinite and, so to speak, counting it off unit by unit, even if the one who does the counting is everlasting. For, by nature the infinite cannot be traversed, or it would not be infinite. . . . So the number of earlier individuals is not infinite. If it were, the succession of the race would not have come down as far as each of us, since it is impossible to traverse the infinite.

Moreover, suppose the *kosmos* had no beginning, then the number of individuals down, say, to Socrates will have been infinite. But there will have been added to it the individuals who came into existence between Socrates and the present, so that there will be something greater than infinity, which is impossible.

Again, the number of men who have come into existence will be infinite, but the number of horses which have come into existence will also be infinite. You will double the infinity; if you add the number of dogs, you will triple it, and the number will be multiplied as each of the other species is added. This is one of the most impossible things. For it is not possible to be larger than infinity, not to say many times larger. Thus if these strange consequences must occur, and more besides, as we shall show elsewhere, if the *kosmos* is uncreated, then it cannot be uncreated or lack a beginning (Philoponus cited by Sorabji, 1983:214–215).

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<sup>16</sup>Philoponus' commentary on *Physics* has been lost and is known mainly through quotations in Simplicius' commentaries on Aristotle's *De Caelo* and *Physics*. See Simplicius *In Aristotelis de caelo commentaria* and Simplicius *In Aristotelis physicorum libros quattuor posteriores commentaria*.

<sup>17</sup>In view of the fact that modern cosmology was not developed before the 20th century, Philoponus (and other previous thinkers) had to rely on philosophical arguments, and not on scientific facts, to support the claim that the universe did begin to exist.

According to Philoponus, if the universe has no beginning, then there must be an actually infinite number of past events (such as years). However, there cannot be an actually infinite number of past events for an actual infinity is absurd and cannot be traversed. Firstly, it is absurd because the result of multiplying or adding to infinity will always be infinity (e.g. adding three to infinity equals infinity). Secondly, it cannot be traversed because adding one event after another would never result in an actually infinite number of events. Thus, Philoponus maintains that, if infinity cannot be traversed, the present moment of an eternal past would not be reached. However, the present moment has been reached and, thus, the universe must have had a beginning.

It is possible, as does Herbert A. Davidson (1969:362–363), to summarise Philoponus’ three arguments concerned with infinity as follows:

1. If the universe were eternal, then the creation of any object would be preceded by an infinite series of objects that would have been created from one another. However, an infinite cannot be traversed. Therefore, if the universe were eternal, none of the objects presently existing could ever have been created.
2. If the universe were eternal, new events would continually be added to an already infinite number of past events. However, it is not possible to add to an infinite.
3. The number of the revolutions of the planets are multiples of one another, thus an eternal universe implies that there would be infinite numbers of past motions in varying multiples. However, it is not possible to multiply infinite numbers.

### 3.2.3 al-Ghazālī

The Arabic term *kalām* literally means “speech” or “word” and is often used to represent the movement in medieval Islamic theology that attempted to clarify and defend the core doctrines of Islam rationally (Groff, 2007:206; Wolfson, 1976:1). A practitioner of *kalām* is known as a *mutakallim* (meaning “theologian”) and the plural form is *mutakallimūn*. The *mutakallimūn*, influenced by Philoponus’s works, produced several proofs for a created world. Sajjad H. Rizvi (2011:12) remarks that “Inspired by John Philoponus’s famous attack on Proclus (d. 485) and Aristotle’s defense of eternalism, [Islamic theologians] have asserted that not only was the concept of an eternal cosmos coeval with God absurd, it was also heretical.” Important defenders of these *kalām* proofs include al-Kindi (c. 801–c. 73), Saadia (882–942) and the notable jurist, theologian, philosopher, and mystic, al-Ghazālī (1058–1111).

In 1095 Ghazālī published his *Tahāfut al-falāsifa* (*The Incoherence of the Philosophers*), in which he argues at length that the universe had a beginning. In his *Iqtisād fī al-i’tiqād* Ghazālī provides the following syllogism for the logical context of his arguments in the *Incoherence*: “Every temporal thing has a cause; the world is temporal; therefore, the world has a cause” (al-Ghazālī cited by Davis, 2005:115). Ghazālī goes on to explain that by “world” he means

“every existent other than God most high,” and by “temporal thing” he means “that which was nonexistent and which then became existent” (al-Ghazālī cited by Davis, 2005:123–125). Thus, Ghazālī’s argument may be formulated as follows:

1. Everything that was nonexistent and which then began to exist has a cause.
2. The world was nonexistent and then began to exist.
3. Therefore, the world has a cause.

Ghazālī supports premise (2) by arguing, similar to Philoponus, that, if the world were eternal, there would be an actually infinite series of past events, each caused by the event immediately prior to it. However, an actual infinity is impossible and, thus, the series of temporal causes must have a beginning. Therefore, the world had a beginning.

Ghazālī uses certain thought experiments to demonstrate the impossibility of infinity. For example, Ghazālī (2000:18–19) asks us to suppose that Jupiter completes two and a half revolutions for every one revolution that Saturn completes. If both these planets had been revolving constantly from eternity, then both of them would have completed the same number of revolutions, which is absurd. Ghazālī raises a further difficulty by asking “Is the number of the rotations even or odd, both even and odd, or neither even nor odd?” (al-Ghazālī, 2000:18). According to Ghazālī, the supporter of the actual infinite is forced to affirm that the rotations are neither even nor odd and, again, this is absurd.

Ghazālī’s arguments have had a lasting impact on the philosophy of religion. Although the Golden Age of kalām ended shortly after the death of Ghazālī, the kalām cosmological arguments were circulated through the interaction between the Jewish, Christian and Arabic thinkers in Spain and these cosmological arguments were soon adopted and advanced by prominent Christian thinkers, such as St. Bonaventure (1221–74).

### 3.2.4 Craig

After being mostly overlooked for several centuries, the kalām cosmological argument, based on the impossibility of an infinite temporal regress of events, was revived in Stuart Hackett’s little-noted *The Resurrection of Theism* (1957). William Lane Craig, one of Hackett’s students, entitled this version of the argument the “kalām cosmological argument.” By formulating a modern defence of the KCA, Craig brought the KCA into prominence in his book *The Kalām Cosmological Argument* (1979). As Quentin Smith observes Craig’s defence of the KCA has gained remarkable attention in recent years:

A count of the articles in the philosophy journals shows that more articles have been published about Craig’s defense of the Kalam argument than have been published about any other philosopher’s contemporary formulation of an argument for God’s

existence. . . . The fact that theists and atheists alike “cannot leave Craig’s Kalam argument alone” suggests that it may be an argument of unusual philosophical interest or else has an attractive core of plausibility that keeps philosophers turning back to it and examining it once again (Smith, 2007:183).

In view of the fact that Craig is the foremost advocate of the KCA, I will focus exclusively on his formulation and defence of the argument (see next section).

### 3.3 Exposition

#### 3.3.1 Preliminary Definitions

Before discussing Craig’s defence of the KCA, it will be helpful to define several crucial terms and clarify the theory of time as implied by the argument.

The KCA presupposes the dynamic theory of time, also known as the A-theory of time.<sup>18</sup> In terms of the A-theory the past, present, and future are objectively distinct with things coming into being and going out of existence as time passes. Every event has a beginning and an end. Thus, it is not possible for temporally sequential events to exist simultaneously – before an event  $e$  can occur, the event immediately prior to  $e$  must occur. For example, the event representing a clock’s minute hand moving from the first numbered dial on the clock face to the second dial cannot exist simultaneously with the event representing the same hand moving from the second dial to the third dial.

The A-theory of time is in contrast to the B-theory (or static theory) of time, which affirms that time is a tenseless, four-dimensional, space-time block, and that the flow of time is merely a mind-dependent illusion. According to the B-theory nothing actually begins to exist for every event exists simultaneously in the space-time block. In view of the fact that the KCA assumes that things come into existence, it appears difficult to unify the KCA with the B-theory of time.<sup>19</sup>

The KCA uses the terms “cause”, “universe”, “begins to exist”, “event”, “temporal series of events”, “potential infinite” and “actual infinite” in the following sense:

- *Cause* refers to what Aristotle termed an *efficient cause* – the primary source of the caused entity – and it may be anything besides the caused entity.<sup>20</sup> For example, an artisan and

<sup>18</sup>John M.E. McTaggart (1908) distinguishes between two theories of time, which he arbitrarily terms the “A-series” and the “B-series.” The former theory affirms that there exists a *present moment* in the series of time, while the latter theory denies such a present moment. Similar non-descriptive names, such as “A-theory” and “B-theory,” have since been used to differentiate between these two theories. For a brief introduction to McTaggart’s views regarding time see McDaniel (2010).

<sup>19</sup>Although a defence of the A-theory of time is important for the KCA, such a defence is beyond the scope of this paper. However, on the basis of a case such as was presented by Craig (2000a; 2000b; 2001), I feel justified in accepting the validity of objective temporal becoming.

<sup>20</sup>See Aristotle’s *Physics* (II 3) and *Metaphysics* (V 2), in which he presents his four well known causes, namely, material cause, formal cause, efficient cause, and final cause.

his sculpting ability may be the efficient cause of a sculpture.

- *Universe* refers to all space-time, matter, and energy. This includes any idea of a multi-verse.
- *Begins to exist* may be defined as follows:  $x$  begins to exist if and only if  $x$  exists at some time  $t$  and there is no time  $t^*$  prior to  $t$  at which  $x$  exists and no state of affairs in the actual world in which  $x$  exists timelessly.
- An *event* is any change in the world. According to Allis and Koetsier, if we assume that at each instant of time the world may be described as a set  $S$  of statements, then an event, “when applied in a given world state, results in a change of state” (Allis & Koetsier, 1995:237). In other words, if an event  $e$  is applied in state  $S$ , then the world is no longer described as the statements  $S$ , but by the statements  $e(S)$ .
- Given the A-theory of time, the *temporal series of events* is the series of all past events sorted according to their temporal sequence of *less than*.
- The *potential infinite* denotes a boundless quantitative process, such as endless addition, endless division, and endless succession. For example, counting all the natural numbers (1, 2, 3, ...) resembles a potential infinite, for it is impossible to complete the process of counting through all the natural numbers. In other words, once a number has been counted another always follows. Thus, a potential infinite series is a series that increases endlessly towards infinity as a limit but never reaches it. Strictly speaking, the very nature of the potential infinite is that it is never complete and is always finite at any given point.
- The *actual infinite*, on the other hand, denotes a boundless, completed quantitative whole. An example of an actual infinite would be the completed collection comprising every possible natural number (1, 2, 3, ...). An actual infinite collection, then, is a completed totality of infinitely many distinct elements.

### 3.3.2 Synopsis of the Kalām Cosmological Argument

Following al-Ghazālī, Craig (1979:63) represents the KCA as the following syllogism:

1. Everything that begins to exist has a cause of its existence.
2. The universe began to exist.
3. Therefore, the universe has a cause of its existence.

Craig offers three supporting reasons for the first premise, namely, (a) it is a metaphysical principle that something cannot begin to exist uncaused, (b) it is inexplicable why only universes

would not need a cause, and (c) this premise is constantly confirmed in our experience (as well as in quantum physics – see, for example, the response to objection 5 below.)

Premise two is supported by four arguments, two of which are philosophical: (a) the argument from the impossibility of the existence of an actual infinite and (b) the argument from the impossibility of the formation of an actual infinite by successive addition; and two of which are scientific: (c) the argument from the expansion of the universe and (d) the argument from thermodynamics.

Finally, through a conceptual analysis of the argument's conclusion, Craig demonstrates that the cause of the universe must possess various God-like properties. Thus, the KCA may be outlined as follows:

1. Everything that begins to exist has a cause of its existence because:
  - (a) It is a metaphysical principle that something cannot begin to exist uncaused.
  - (b) It is inexplicable why only universes would not need a cause.
  - (c) We have experiential confirmation that something cannot begin to exist uncaused.
2. The universe began to exist because:
  - (a) The existence of an actual infinite is impossible.
    - i. An actual infinite cannot exist.
    - ii. An infinite temporal regress of events is an actual infinite.
    - iii. Therefore, an infinite temporal regress of events cannot exist.
  - (b) The formation of an actual infinite by successive addition is impossible.
    - i. A collection formed by successive addition cannot be an actual infinite.
    - ii. The temporal series of events is a collection formed by successive addition.
    - iii. Therefore, the temporal series of events cannot be an actual infinite.
  - (c) The expansion of the universe entails a finite universe.
  - (d) The thermodynamic properties of the universe entail a finite universe.
3. Therefore, the universe has a cause of its existence.
4. If the universe has a cause of its existence, that cause is God because:
  - (a) Conceptual analysis of the cause of the universe illustrates that this cause must possess the essential properties traditionally ascribed to God.
5. Therefore, God caused the universe.

6. Therefore, God exists.

I shall now explore each supporting argument in more depth.

### 3.3.3 First Premise: Everything That Begins to Exist Has a Cause of Its Existence

One may expect premise (2) to be the only controversial premise in the KCA. However, premise (1), although seemingly obvious, has also come under tremendous attack. For that reason, Craig supports the first premise for the following three reasons (Craig & Sinclair, 2012:182–190). Firstly, it is a metaphysical principle that something cannot come into being from nothing. In this context the term “nothing” is not used as is in the doctrine of creation *ex nihilo*, where nothing means “no material substance or principle apart from the fullness of God’s own being” (Worthing, 1996:75), but it simply means “not anything.” It seems, therefore, metaphysically absurd that something could come into existence uncaused out of absolutely nothing.

Secondly, if something could come into being from nothing, then it becomes inexplicable why just anything, such as microwaves and cows, do not merely pop into existence uncaused. What is special about a universe that it is able to come into existence from nothing? Craig remarks: “There cannot be anything about nothingness that favors universes, for nothingness does not have any properties” (Craig & Sinclair, 2012:186). Thus, it remains more plausible that every object that begins to exist, including a universe, requires a cause for its existence.

Thirdly, if premise (1) were false, we would constantly be observing objects spontaneously coming into being uncaused out of nothing. For example, rocks, horses, people and planets would be popping into existence all around us. However, premise (1) is constantly confirmed by our experience; we do not, and never have, observed things beginning to exist without a cause.

### 3.3.4 Second Premise: The Universe Began to Exist

#### 3.3.4.1 Argument from the Impossibility of an Actual Infinite

Craig formulates the first philosophical argument as follows:

- i An actual infinite cannot exist.
- ii An infinite temporal regress of events is an actual infinite.
- iii Therefore, an infinite temporal regress of events cannot exist.

This argument is a refined version of Philoponus’ argument against an eternal universe. According to Craig, if the universe did not begin to exist, there would be an actually infinite number of past events. However, because an actual infinite is impossible, the universe began to exist.

Craig (1979:67) notes that, as a result of the work of Cantor, the actual infinite is regarded as a legitimate concept in contemporary mathematics. Nevertheless, mathematical existence,

according to Craig, differs from existence in the real world. In the KCA the term “exist” means “exist in the mind-independent world.” Craig writes:

By “exist” we mean “exist in reality”, “have extra-mental existence”, “be instantiated in the real world”. . . . Cantor’s system and set theory are concerned exclusively with the mathematical world, whereas our argument concerns the real world. . . . What I shall argue is that, while the actual infinite may be a fruitful and consistent concept in the mathematical realm, it cannot be translated from the mathematical world into the real world (Craig, 1979:69).

Like al-Ghazālī, Craig (1979:82) maintains that the most effective manner in which to show that an actual infinite cannot exist in the real world is through thought experiments that illustrate the absurdities that would result if an actual infinite were to be instantiated in reality. I shall mention one such example. Craig (1979:82–83) asks us to suppose that there were a library containing an infinite number of distinct books. Every second book on the shelf is black and all the other books are red. Such a library, Craig asserts, implies that the number of red books is identical to the number of red books *plus* the number of black books. This is clearly preposterous. Craig asks us to suppose further that a number is printed on the spine of each book in the library so to create a one-to-one correspondence with the natural numbers (1, 2, 3, . . . ). However, Craig maintains that would imply that one could add another book to the library because every possible natural number is already printed on a book. This scenario is also absurd. Thus, after offering several such thought experiments, Craig concludes that an actual infinite cannot exist in reality.

According to Craig premise (ii) is obvious because “if there has been a sequence composed of an infinite number of events stretching back into the past, then the set of all events would be an actually infinite set” (Craig, 1979:95). Thus, an infinite temporal regress of events cannot exist and the universe began to exist.

### 3.3.4.2 Argument from the Impossibility of the Formation of an Actual Infinite by Successive Addition

The second philosophical argument that supports premise (2) may be formulated as follows:

- i A collection formed by successive addition cannot be an actual infinite.
- ii The temporal series of events is a collection formed by successive addition.
- iii Therefore, the temporal series of events cannot be an actual infinite.

This argument does not deny the existence of an actual infinity but, rather, it denies that it is possible to create an actual infinite collection by adding one member after another at a later

moment in time. Craig (1979:103–104) maintains that this seems obvious as, for any finite collection  $c$ ,  $c$  will remain finite once a new member has been added. However, the process of adding another member to a collection cannot be completed and this will hold true even if there is an infinite amount of time in which to perform the process. Craig illustrates this as follows:

Suppose we imagine a man running through empty space on a path of stone slabs, a path constructed such that when the man’s foot strikes the last slab, another appears immediately in front of him. It is clear that even if the man runs for eternity, he will never run across all the slabs. For every time his foot strikes the last slab, a new one appears in front of him, *ad infinitum* (Craig, 1979:104).

Thus, since the collection of past events is formed by *successively* adding one event after another in time, Craig concludes that the past must be finite.

### 3.3.4.3 Scientific Arguments in Favour of a Finite Universe

This paper is exclusively concerned with the philosophical arguments supporting the KCA and, for that reason, I will mention Craig’s scientific arguments, albeit very briefly.

According to Craig, apart from philosophical arguments, the second premise may be wholly defended on the basis of two remarkable scientific confirmations, namely, the expansion of the universe and the thermodynamic properties of the universe. These two scientific confirmations led to the development of the standard Big Bang model, also known as the Friedmann-Lemaître model. This model describes a universe (all matter, energy, space, and time) that came into existence a finite time ago at the initial cosmological singularity. At the singularity the universe is said to be in a state of infinite density. According to Andrew Liddle and Jon Loveday, “all the simple homogeneous cosmological models, described by the Friedmann equation, feature an instant of creation at infinite density” (Liddle & Loveday, 2009:28). Although several alternative cosmological models have been offered in an attempt to avoid the initial singularity, the standard Big Bang model is, as yet, the most accurate model of our universe. Liddle and Loveday remark:

The standard [Big Bang] cosmological model is a striking success, as a phenomenological description of cosmological data. . . . The model’s success in explaining high-precision observations has led a clear majority of the cosmological community to accept it as a good account of how the Universe works (Liddle & Loveday, 2009:8).

Thus, given the implications and wide acceptance of the Big Bang model, contemporary cosmology certainly demonstrates that premise (2) appears to be more true than false.

### 3.3.5 Conclusion: The Universe Has a Cause of Its Existence

Based on the conclusion that the universe has a cause, Craig (in Craig & Sinclair, 2012:191–194) performs a conceptual analysis to show that this ultra mundane cause of the universe

must possess the following theologically significant properties. Firstly, the cause must, itself, be *uncaused* because, as the philosophical arguments for premise (2) show, there can be no infinite regress of causes. Furthermore, Occam’s Razor instructs us to postulate causes only if necessary and, thus, we are justified in preferring one First Cause over a plurality of uncaused causes.<sup>21</sup>

Secondly, the cause must be *beginningless* because an uncaused entity does not begin to exist. Thirdly, the cause must be *changeless* because an infinite regress of changes is impossible while, fourthly, this changeless cause must be *immaterial* for any material object is subject to constant change on the molecular and atomic levels. Fifthly, this cause must be *timeless* without the universe because this First Cause is the cause of time itself coming into existence and sixthly, this cause must be *unimaginably powerful* because it brought all space-time, matter and energy into being.

Finally, this cause must be *personal* (i.e. be a person) for at least three reasons. (1) There are two types of causal explanation only, namely, *scientific explanations* concerning physical laws and *personal explanations* concerning agents and their volitions. However, the origin of the universe cannot be a scientific explanation since there were no scientific laws before the universe. Accordingly, the cause of the universe can be explained only in terms of a personal agent and this personal agent’s volition. (2) Two types of things only may be described as uncaused, beginningless, immaterial, timeless and spaceless, namely, an abstract object (such as a number) and an unembodied mind. However, abstract objects do not stand in any causal relations and, thus, cannot be the cause of anything. Therefore, this First Cause must be an unembodied mind. (3) Only “personal, free agency can account for the origin of a first temporal effect from a changeless cause” (Craig & Sinclair, 2012:193). A changeless and eternally existing object cannot cause a first event unless this object has the free will to do so and, thus, the cause of the universe must be a free, personal agent.

Based on these properties of the First Cause, Craig concludes:

An uncaused, personal Creator of the universe exists who, sans the universe, is beginningless, changeless, immaterial, timeless, spaceless, and enormously powerful. . . . This, as Thomas Aquinas was wont to remark, is what everybody means by “God.” (Craig & Sinclair, 2012:194).

### 3.4 Common Objections With Replies

There have been numerous objections raised to the KCA over the past thirty years although, as yet, no comprehensive catalogue listing all these objections has been published. Such a task would, however, be extremely difficult in view of the fact that most of the discussions surrounding the KCA are located in various academic journals. The nearest publication we have of such

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<sup>21</sup>Occam’s razor is accredited to William of Occam (c. 1285–1349) and is the principle that an explanation of a thing should not include more assumptions than are necessary.

a catalogue is the second chapter of Mark R. Nowacki's *The Kalam Cosmological Argument for God* (2007). Although Nowacki lists an impressive fifty-five (55) number of objections with replies, he stresses that his list is not exhaustive (Nowacki, 2007:104). Nevertheless, it appears superfluous to repeat these objections here and, thus, I shall list a handful only of the most common objections with replies to help expose the bare logical structure of the KCA.

**Objection 1:** If the past cannot be eternal, nor can the future. Thus, the future must be finite.

**Response:** Although past events do not exist at this point, they have existed and they have influenced what exists now. However, future events do not exist and nor have they existed. Therefore, the future only constitutes a potentially infinite number of events, that is, new subsequent events will constantly be added without end to the temporal series of events. Thus, in this potentially infinite sense, the future may be said to be eternal.

**Objection 2:** The act of creating the universe requires time. However, time is part of the universe. Therefore, God could not have created the universe (and time) for this action would require time.

**Response:** This objection assumes that God's creating time and the universe must be temporally prior to the first moment in time. However, God's creating of time may have been simultaneous or coincident with the first moment in time because there is no incoherence in God's timeless eternity being *causally*, but not *temporally*, prior to the universe. Thus, the objection disappears.

**Objection 3:** The KCA equivocates on the term "cause." Premise (1) uses the term "cause" to refer to that which transfigures already existing matter into another state. However, premise (2) uses the term "cause" to mean something that creates a material effect out of nothing. Thus, since the KCA commits the fallacy of equivocation, it is invalid.

**Response:** In both premise (1) and premise (2), the KCA uses the term "cause" to refer to an efficient cause – a cause that produces its effects. It is a secondary, nonessential question as to whether or not the cause produces its effects out of previously existing materials. The KCA, therefore, does not commit the fallacy of equivocation.

**Objection 4:** If everything has a cause of its existence, then what is the cause of the universe's cause? In other words, who created God?

**Response 1:** Premise (1) does not state that *everything* that exists has a cause, but that *whatever begins to exist* has a cause. Thus, that which is eternal and does not begin to exist has no cause. Therefore, since God is self-existent, He has no cause. This does not constitute a special pleading for God for atheists have long maintained that the universe is eternal and uncaused. The difference, however, between an uncaused God and an uncaused universe is that

the latter has now been shown to be untenable. Furthermore, there must be a First Cause because an infinite regress of causes is impossible. Thus, because the concept of an uncaused being is not incoherent, we are justified in affirming that an eternal, uncaused, personal Creator exists.

**Response 2:** If the immaterial, personal being who created the universe has a cause, it does not follow that this being does not exist. This is true even if we do not know what the cause of this being is for we do not need an explanation of a cause  $x$  to accept the reality of  $x$ . If a personal being created the universe, it is incumbent upon us to inquire whether this being has revealed him/herself to us so we might know him/her more fully.

**Objection 5:** Quantum physics undermines premise (1) as events and virtual particles on the sub-atomic level begin to exist without a cause.

**Response:** Firstly, it is not yet a scientifically established fact that subatomic events are indeterministic and uncaused.<sup>22</sup> Secondly, even if subatomic events are indeterministic, particles do not begin to exist uncaused. Virtual particles are caused by spontaneous fluctuations of the energy within the subatomic vacuum. This subatomic vacuum is sometimes referred to as “nothing,” but this is misleading because the vacuum is a sea of fluctuating energy. The Oxford physicist, Joseph Silk, writes,

The quantum theory asserts that a vacuum – even the most perfect vacuum devoid of any matter – is not really empty. Rather, the quantum vacuum is a sea of continuously appearing and disappearing particles. ... Energy is “borrowed” from the vacuum to create the particles and is repaid almost instantly. ... At any given instant, the vacuum is full of such virtual pairs (Silk, 2001:387).

Thus, quantum physics has not yet undermined premise (1).

**Objection 6:** According to the Big Bang theory, which is used to support premise (2), the universe began in a state of infinite density. However, the philosophical arguments supporting premise (2) deny the possibility of an actual infinity and, therefore, the scientific and philosophical arguments for premise (2) are inconsistent. As Victor J. Stenger remarks, “I hope you notice the inconsistency here. On the one hand, Craig claims the universe started as a singularity of *infinite* density, and then he turns around and says that nothing *infinite* can occur in reality” (Stenger, 2012:172 [original emphasis]).

**Response:** When referring to the cosmological singularity, astronomers and astrophysicists do not use the term “infinite density” as a quantitative description of the universe, but rather to emphasise that, as one extrapolates back in time, the volume of the universe approaches zero in the limit as the scale factor of the universe approaches zero. The singularity represents an

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<sup>22</sup>See Cushing (1994).

edge or boundary to space-time. Furthermore, the Big Bang theory cannot actually describe what happens at the singularity for the laws of physics break down at this boundary. Andrei Linde explains:

In its standard form, the big bang theory maintains that the universe was born about 15 billion years ago from a cosmological singularity – a state in which the temperature and density are infinitely high. Of course, one cannot really speak in physical terms about these quantities as being infinite. One usually assumes that the current laws of physics did not apply then (Linde, 1994:48).

Similarly, Silk (2005:59) remarks that “the universe began at time zero in a state of infinite density. . . . Of course the phrase ‘a state of infinite density’ is completely unacceptable as a physical description of the universe, infinities being abhorrent to physicists. . . . A singularity is even worse than an infinity in our equations. It signals a breakdown in the laws of physics”. Therefore, the term “infinite density” does not represent an actual infinity, and the objection remains groundless.

**Objection 7:** It is possible to form an infinite collection by successively adding to an already infinite collection. Therefore, if the temporal series of events is infinite, then an infinite past is constantly being formed with every successive event. Thus, the past may be infinite, and the argument from the perspective of the impossibility of forming an actual infinite by successive addition fails.

**Response:** This objection begs the question by presuming what it purports to prove, namely, that an infinite regress of events is possible. To argue that the past may be infinite because it has always been infinite is to argue in a circle. Thus, this objection begs the question “How could the present moment be reached if the past were infinite?” Craig declares,

The formation of an actually infinite collection by never beginning and ending at some point seems scarcely less difficult than the formation of such a collection by beginning at some point and never ending. If one cannot count *to* infinity, how can one count down *from* infinity? . . . Before the present event could occur, the event immediately prior to it would have to occur; and before that event could occur, the event immediately prior to it would have to occur; and so on *ad infinitum* (Craig & Sinclair, 2012:118 [original emphasis]).

Thus, Craig highlights the fact, that if the temporal series of events had no beginning, it would be impossible for any event to occur. However, this is absurd because the present moment has been reached. Therefore, the objection fails.

### 3.5 Conclusion

The KCA is an argument in favour of the existence of the theistic God. A detailed analysis of the KCA reveals that it was rigorously developed by Jewish, Islamic, and Christian intellectuals; it is based on the impossibility of an infinite temporal regress of events; and it uses both philosophical and scientific arguments to support the finitude of the universe. As indicated above, the numerous objections (with responses) to the KCA uncover the logical structure and robustness of the argument and show, if nothing else, that this ancient argument “has an attractive core of plausibility” (Smith, 2007:183) and should not be ignored.

In view of the fact that the second part of my overall claim in this paper concerns the KCA, this chapter has served to inform the reader of what the KCA is and what the most common objections to the KCA are. The infinite God objection concerns the philosophical arguments incorporating the notion of infinity and, therefore, this chapter has emphasised these arguments while largely ignoring the scientific arguments for a finite universe. In the next chapter, I expound on, and respond to, the infinite God objection.

## 4 THE INFINITE GOD OBJECTION

### 4.1 Introduction

One of the most forceful objections to the kalām cosmological argument (KCA), I believe, is the Infinite God Objection (IGO). This objection, in essence, attempts to show that the philosophical arguments against the existence of the actual infinite propounded by the KCA are problematic. In this chapter I seek to demonstrate that the IGO remains unsuccessful. I do not, however, attempt to defend the notion that an actual infinity is impossible. On the contrary I assume that this notion is correct and argue that proponents of the KCA may confidently hold on to this notion in light of the IGO. In what follows, I first clarify the IGO (section 4.2) and then present my response to this objection (section 4.3).

### 4.2 The Infinite God Objection Explained

“The Infinite God Objection” is the term I use to refer to the objection that insists that the arguments against the actual infinite conflict with the Christian orthodox conception of God. More specifically, this objection claims that the Christian proponents of the KCA face the following dilemma: either an actual infinity cannot exist, or God’s nature or divine attributes cannot be infinite. I shall address two versions of this objection, both of which may be categorised according to their focus, namely, God’s nature and God’s omniscience.

#### 4.2.1 The Objection from God’s Infinite Nature

This objection maintains that the impossibility of an actual infinity causes difficulties as regards the general nature of God. Traditionally, theists have held that God is unlimited and infinite. It is said, for example, that God has infinite love, infinite goodness and infinite power. However, if the actual infinite cannot exist, then God cannot be infinite. On the other hand, if God is infinite, then the actual infinite does exist. Thus, arguments against the actual infinite imply that, as Graham Oppy remarks, “When we come to consider an orthodoxly conceived monotheistic god and its attributes, we cannot then say either that an orthodoxly conceived monotheistic god is, or that an orthodoxly conceived monotheistic god’s attributes are actually infinite” (Oppy, 2006:139).

#### 4.2.2 The Objection from God’s Infinite Knowledge

According to the objection from God’s infinite knowledge (hereafter OGIK), omniscience entails the existence of an actual infinity. Omniscience is generally defined as “knowledge of all true propositions” (Wierenga, 2012). In other words,  $S$  is omniscient if, for every proposition  $p$ , if  $p$  is true then  $S$  knows  $p$ . Therefore, since there are an actual infinite number of propositions,

God – if He is omniscient – knows all these propositions. Thus, either an actual infinity exists in God’s knowledge, or God is not omniscient. We may formulate this argument in more detail as follows:

- (1) If God is omniscient, He knows an actually infinite number of propositions.
- (2) If God knows an actually infinite number of propositions, an actual infinity exists.
- (3) Therefore, if God is omniscient, then an actual infinity exists.
- (4) Therefore, if an actual infinity cannot exist, then God is not omniscient.
- (5) Therefore, Christian proponents of the KCA must choose one of three possibilities: (A) God is omniscient and an actual infinity exists, (B) God is not omniscient and an actual infinity cannot exist, or (C) God is not omniscient and an actual infinity exists.

Premise (1) is supported by the argument that both (a) God’s foreknowledge of future events and (b) God’s knowledge of mathematical truths ensure that God’s knowledge encompasses an actually infinite number of propositions. Concerning the former, the critic highlights that Christian theology traditionally holds that the future is endless while the final and *eternal* destination of believers in the life hereafter will be on the new earth. This doctrine is supported by three biblical teachings, namely, (i) that God will resurrect the bodies of believers to physical life (Daniel 12:2, Luke 13:28–29, Matthew 5:29; 10:28, John 5:28–29, Philippians 3:21, 1 Corinthians 15, Romans 8:11), (ii) that God will create a new physical earth (Isaiah 65:17, 2 Peter 3:13, Revelation 21:1), and (iii) that the new earth is an eternal destination (Revelations 22:1–5). The theologians, Mark Driscoll and Gerry Breshears, remark,

According to the Bible, our eternal home will be on the new earth, a time-space place, where we will live forever. The heavenly city of Jerusalem will come down out of heaven and God will dwell with his people. We will always live as human persons, with our spirits combined with resurrected physical bodies suited for this perfect place (Driscoll & Breshears, 2010:423).

Thus, since a physical body and physical earth imply the presence of time, and the new earth is an eternal destination, the future is endless and, thus, it constitutes a potentially infinite number of future events. In addition, if God is omniscient, then He has knowledge of every past, present, and future event. Furthermore, God’s mode of knowledge is not successive and God would know a potentially infinite number of propositions all at once (such as knowing all the natural numbers at once). In other words, what we would come to know in a potentially infinite way, God would know in an actually infinite way since His knowledge would comprise a completed totality of infinitely many distinct propositions. Therefore, because future events may be expressed as propositions, such as the statement: “Jones will eat eggs and toast for

breakfast on July 12, 2035,” an omniscient God would know an actually infinite number of propositions. John Byl contends:

Let us suppose for the sake of the argument that Craig’s proof against the actual infinite were valid. It would seem that such a ban would have some awkward theological consequences. . . . If the future is indeed endless, then to an omniscient God it exists as a definite actual infinity, rather than as an indefinite potential infinity . . . [implying that] God has an infinite stock of memories or thoughts. . . . [However,] if Craig’s argument against an actual infinity is valid it implies that God’s knowledge encompasses only a finite number of future events. This leads to the conclusion that either the future is finite, and there is a last event, or God’s knowledge of the future is incomplete (Byl, 1996:78–79).

According to Byl, prohibiting the actual infinite, even if for the sake of trying to prove God, backfires on the Christian philosopher by posing a threat to God’s omniscience.

Concerning (b), it is argued that God – if He is omniscient – knows every mathematical truth, of which there are an actual infinite (Morrison, 2002:156–160). For example, God knows that

$$1 + 1 = 2$$

$$1 + 2 = 3$$

$$1 + 3 = 4$$

...

and so on *ad infinitum*. As Wes Morrison declares, “since the number of mathematical truths . . . is clearly infinite, it follows – does it not? – that an *actual* infinity is present in God’s knowledge” (Morrison, 2002:157 [original emphasis]).

Premise (2) merely claims that knowledge encompassing an actually infinite number of propositions entails that an actual infinity exists, since such knowledge implies that an actually infinite number of propositions exist. Premises (3) through to (5) logically follow from the previous premises. Thus, the OGIK, in essence, tries to show that the Christian proponents of the KCA cannot deny the existence of the actual infinite while affirming that God is omniscient.

## 4.3 Response to the Infinite God Objection

### 4.3.1 Response to the Objection from God’s Infinite Nature

The first objection, which claims that God’s nature is threatened by the KCA, commits the fallacy of equivocation. It uses the term “infinite” in the mathematical sense when referring to God. However, when theologians say that God is infinite they mean God is a maximally great

being and that He is omnibenevolent, omnipotent and omniscient, and so on. By declaring that God is infinite, theologians do not mean to attribute a kind of numerical value to the nature of God. Indeed, it would be odd to say, for example, that God has ten units of love, or two hundred units of power, or that God's goodness comprises an actually infinite number of "goodnesses." Wolfgang Aichtner writes "Ever since the concept of infinity was introduced in theology as a property of God, both from the apophatic tradition and from the received Aristotelian tradition, theologians have refused to think about the infinity of God in terms of quantity, such as it is obviously done in mathematics. If theologians think about the infinity of God, they do so in stressing that it has to be understood in a qualitative manner" (Aichtner, 2011:42). Clearly, the objection from God's infinite nature alters the traditional *qualitative* sense of "infinite" to the *quantitative* sense when describing God. The objection from God's infinite nature, therefore, has no real force.

### 4.3.2 Response to the Objection from God's Infinite Knowledge

The OGIK proves far more difficult to address than the previous objection. This second objection subtly raises several complex questions, such as: What is knowledge? What does it mean for God to know something? Do propositions even exist? Can God's knowledge be non-propositional? In order to help formulate a possible response to this second objection and the questions that it raises, I first critically analyse three different responses to the OGIK. I then formulate my own response to the OGIK by utilising and combining the strengths of these three responses.

#### 4.3.2.1 First Response: Omniscience Does Not Entail Actually Infinite Knowledge

In response to the OGIK, the proponents of the KCA may claim that to be unable to know what cannot be known is no violation of omniscience. However, since an actually infinite number of objects cannot exist, then an actually infinite number of propositions cannot also exist or be known. Thus, it is no violation of omniscience that God fails to have actually infinite knowledge.

It may be stressed, furthermore, that numbers, mathematical truths and future events each amount to a potential infinite only and, therefore, omniscience should be understood as potentially infinite knowledge. In other words, the number of things (such as numbers or propositions) that God knows increases endlessly towards infinity as a limit but never reaches it. For example, just as the series of (possible) future events has no end, God's foreknowledge has no end. In other words, God's knowledge of the future is endless, boundless and limitless.

This response seems similar to al-Ghazālī's response to the OGIK (or an objection similar to the OGIK) in his *Iqtisād*:

It might be said by someone that things within the power of God most high are infinite according to you as well, likewise the objects of his knowledge. . . . [But] our

saying that “the cognizable objects are infinite for God” contains a hidden meaning that is completely the opposite of the one that initially occurs to the mind upon hearing the phrase for the first time. The first thing that occurs to the mind is that the existence is affirmed of various things called cognizables that are infinite, which is absurd. Rather, the things that are spoken of here are existents and they are finite. But the demonstration of this point would require prolonged explanations (al-Ghazālī cited by Davis, 2005:139–140).

Unfortunately, Ghazālī does not expound further on his response. Nevertheless, as I understand it, it would appear that Ghazālī is claiming that there are only a finite (or potentially infinite) number of “existents” which are existing objects that “either [occupy] space or [do] not occupy space” (al-Ghazālī cited by Davis, 2005:123). Since God’s knowledge encompasses all existents, God’s knowledge encompasses a finite (or potentially infinite) number of existents only, such as future events.

This first response to the OGIK correctly points out that, if the actual infinite cannot exist, it is not a violation of omniscience to know a potentially infinite number of things only. However, this response fails to show how God’s *non-successive* knowledge is potentially infinite and not actually infinite. Since God is timeless prior to creation, God’s knowledge is traditionally said to be non-successive in that God knows all things simultaneously.<sup>23</sup> However, if all the members of a potentially infinite series, such as the series of all future events, can be taken together as a completed totality, then this series is really an actually infinite series. Therefore, if God knows, for example, all future events as a completed totality, then He knows an actually infinite number of future events. Thus, this first response does not completely avoid the force of the OGIK.

#### 4.3.2.2 Second Response: The Physical Infinite only Cannot Exist

A second response to the OGIK is that the arguments against the existence of the actual infinite concern the physical infinite only with the “physical infinite” being distinguished from the “metaphysical infinite”. The former concerns an actually infinite number of concrete objects: objects that are persons or are spatially or temporally extended (or spatiotemporally extended). Examples of a concrete object include a person, mind, substance, place, time and an event. On the other hand, the metaphysical infinite concerns an actually infinite number of abstract objects: objects that are not concrete objects. Abstract objects are generally said to be those objects that are not persons and are non-spatial, non-temporal, non-physical and causally inert. Many philosophers believe, for example, that numbers (such as the number 7), universals (such as properties; e.g. the property of *being green*), and propositions (i.e. the meanings of sentences) are abstract objects. Therefore, it may be argued that only a physical infinite is impossible and

<sup>23</sup>For example, in his *City of God* (XII, 17), St. Augustine claims that God’s knowledge is without succession of thought.

it is irrelevant whether or not a metaphysical infinite can exist in one's mind. However, that God knows an actually infinite number of propositions does not imply the possibility of a physical infinite, such as an actually infinite number of past events. Thus, since the OGIK mistakenly equates the metaphysical infinite with the physical infinite, the OGIK poses no difficulty for the KCA.

This appears to be a common response given by Platonists who support the KCA. Platonism refers to the view that such things as abstract objects exist. Thus, according to Platonism, since there are an actually infinite number of mathematical truths, equations, and numbers, it appears plausible to believe that there exist an actually infinite number of abstract objects. Indeed, it is not at all clear how, according to Platonism, the number of abstract objects may be finite and not infinite. Thus, to preserve their Platonistic conviction, many Platonist proponents of the KCA reject the physical infinite only, and not the metaphysical infinite.

For example, J.P. Moreland (2003) endorses both Platonism and the KCA. According to Moreland, although there exists an actually infinite number of abstract objects, an actual infinite number of concrete objects cannot exist in the real world. Thus, Moreland claims that the KCA should not use the statement "An actually infinite number of things cannot exist." He suggests that this statement should rather be phrased as follows: "An actual infinite number of finite, contingent entities that (1) can be added to or subtracted from a set and (2) are spatially (or spatio-temporally or temporally) extended cannot exist" (Moreland, 2003:380). Moreland explains:

An abstract object cannot be added to or subtracted from anything, so they are not proper candidates for members of sets included in thought-experiments employed against the existence of actual infinite collections. Further, abstract objects are neither spatially (or temporally) located or extended, so there is no need to find room for them next to each other or at some other location. And [this reformulated statement] allows one to accept Craig's claim that the denial that a whole is greater than any of its proper parts generates 'all sorts of absurdities . . . when one tries to translate that theory to reality' (Moreland, 2003:380).

For Moreland, then, reformulating the statement in this way has the benefit of allowing God's knowledge to be infinite, while denying the existence of an actually infinite number of past temporal events.

However, is this response to the OGIK tenable? I do not think it is. According to this response, the arguments against the actual infinite pertain to the physical infinite only, and not to the metaphysical infinite. In other words, absurdities (such as those illustrated in Ghazālī's infinite celestial revolutions thought experiment, or Craig's infinite library thought experiment) would result if an actual infinity were instantiated in the real world although no such absurdities result within the metaphysical realm of abstract objects. The problem here, I believe, is that it

seems difficult to justify why the metaphysical realm is exempt from such absurdities. What, exactly, makes abstract objects improper “candidates for members of sets included in thought-experiments employed against the existence of actual infinite collections?” It is unhelpful to respond that this is the case because abstract objects cannot be added to or subtracted from anything, since abstract objects *can* be added to and subtracted from many things. If knowledge, for example, is propositional, then new propositions can be added to my knowledge; or, since sets are abstract objects, other abstract objects (numbers, properties) can be added to or subtracted from sets (such as the set containing my personal attributes).

Furthermore, it seems reasonable to use abstract objects as members of sets in the thought experiments employed against the existence of actual infinite collections. Consider the following thought experiment. Suppose person  $P_1$  knows that  $1 + 1 = 2$ ,  $1 + 2 = 3$ ,  $1 + 3 = 4$ , and so on *ad infinitum*. Assuming that knowledge is propositional,  $P_1$ , then, knows an actually infinite number of propositions (assuming, as well, that mathematical equations are expressed as propositions). Suppose, furthermore, that another person,  $P_2$ , knows only every second mathematical equation that  $P_1$  knows, that is,  $P_2$  knows that  $1 + 2 = 3$ ,  $1 + 4 = 5$ ,  $1 + 6 = 7$ , and so on *ad infinitum*.  $P_2$ 's knowledge, then, encompasses an actually infinite number of propositions as well. Therefore,  $P_1$  and  $P_2$  know the same amount of propositions. However,  $P_1$  knows an infinite number of propositions that  $P_2$  does not know. This results in an absurdity, namely,  $P_1$  knows the same number of propositions that  $P_2$  knows; yet  $P_1$  knows infinitely many more propositions than  $P_2$ !

The situation could become more peculiar. For suppose that  $P_1$ , somehow, becomes omniscient and, therefore, acquires knowledge of all true propositions (according to the very broad definition of omniscience).  $P_1$  now possesses knowledge of an actually infinite number of propositions, which is the same number of propositions that  $P_1$  knew before  $P_1$  became omniscient. However, does this not mean that  $P_1$  was always omniscient? Furthermore, the number of things that  $P_1$  now knows remains equal to the number of things  $P_2$  knows: an actually infinite. So, a non-omniscient person can know the same amount of propositions (abstract objects) that an omniscient person knows!

It is, perhaps, possible to show that abstract objects cannot be used in thought experiments (such as the one described above) that try to show the absurdity of the actual infinite. Indeed, this topic requires further research. Nevertheless, as far as I am able to tell, such thought experiments successfully demonstrate the absurdities that would result if either the physical infinite or metaphysical infinite were to exist. If this is so, then the Platonist faces a problem, namely, the existence of an actually infinite number of abstract objects, such as propositions, seems difficult to affirm. As I see it, the Platonist, who wishes to maintain that God is omniscient and that the philosophical arguments supporting the KCA are sound, may choose one of at least four options:

- (C1) Remain a Platonist and assert that the existence of a physical infinite is impossible, that a metaphysical infinite is possible, and that this will eventually be shown to be true.
- (C2) Remain a Platonist and attempt to show that abstract objects cannot be used in thought experiments (such as the one described above) employed against the existence of a metaphysical infinite; or attempt to show that these thought experiments fail.
- (C3) Remain a Platonist and claim that a finite number of abstract objects only exist.
- (C4) Reject both Platonism and the view that there exist such things as abstract objects.

The first option, C1, is undesirable because, given the thought experiments employed against the metaphysical infinite, the Platonist must, at least, show why these thought experiments fail. By not offering any supporting arguments for the possibility of a metaphysical infinite, it remains more plausible that the existence of the metaphysical infinite is just as impossible as the physical infinite. Moreover, as noted above, C2 may be a valid option if the Platonist could show that the metaphysical realm of abstract objects is impervious to the logical absurdities associated with the actual infinity. However, it is unclear how the Platonist could do this.<sup>24</sup> Moreover, C3 remains untenable since, if abstract objects exist, all the natural numbers would amount to an actual infinite. Therefore, it would appear that C4 is the best option for the proponents of the KCA. Of course, C4 is an unorthodox and contentious position. Nevertheless, apart from the thought experiments employed against the metaphysical infinite, the Christian proponents of the KCA have the following two good theological reasons for favouring C4.

Firstly, a common objection to Platonism is that certain abstract objects, if they exist, exist necessarily. For example, if numbers exist and are as real as the physical objects we experience, then they exist necessarily and they cannot fail to exist. However, since these objects cannot fail to exist, God cannot avoid creating them, even if He so wishes. Platonism, thus, conflicts with the Christian doctrine that God creates everything freely and according to His will. In response to this problem, theists have traditionally claimed that, although some abstract objects exist necessarily, they are still created by God in that they depend on God for their existence.<sup>25</sup> God is not temporally prior to the existence of these objects but, rather, He is causally prior to their existence. However, this response ignores the real issue, namely, if abstract objects exist, then there are infinitely many objects that are independent of God's will. The simplest solution to this issue, I believe, is to deny the existence of abstract objects.

<sup>24</sup>As Morrision (2002:156) highlights, "It is hard to see why mathematicians should be any less concerned about genuine contradictions than anyone else. The rules that govern the 'mathematical realm' are surely not that much more relaxed than those that govern reality!"

<sup>25</sup>For example, according to Clouser (2005:201), an abstract object "is wholly dependent on God for its existence such that had not God brought it about it would not exist. . . . [This is] indifferent to whether or not it is brought about timelessly, for all time, or had a beginning in time . . . because something could be everlasting in time but still be everlastingly dependent on God's sustaining its existence."

Secondly, if abstract objects exist, then God would need to possess certain abstract properties *prior* to His act of creating them. Michael Bergmann and Jeffrey Brower (2006) persuasively argue that “Platonism is inconsistent with the central thesis of traditional theism,” namely, “the thesis that God is an absolutely independent being who exists entirely from himself (*a se*), whereas everything else is somehow dependent on him” (Bergmann & Brower, 2006:358). According to Bergmann and Brower, in order to create the property of *being able to create a property*, God must already exemplify the property of *being able to create a property*. Similarly, in order to create the property of *being powerful*, God must first possess the property of *being powerful*; to create *wisdom*, God must already be wise; to create the *number 1*, there must be at least one God.<sup>26</sup> However, this implies that God’s act of creating certain properties is logically prior to these properties, while these properties are logically prior to God’s act of creating them.<sup>27</sup> This conclusion is obviously incoherent and, therefore, the theist is justified in rejecting Platonism.

It is beyond the scope of this paper to present a fullblown philosophical argument against Platonism.<sup>28</sup> Nevertheless, in view of the philosophical difficulties presented by an actually infinite number of propositions, the theological difficulties presented by the necessity of abstract objects and uncreatable divine properties, and the various seemingly plausible alternatives to Platonism (such as nominalism, fictionalism, or figuralism), it seems reasonable for proponents of the KCA to deny Platonism and to adopt some form of anti-realism. An anti-realist, for example, may claim that abstract objects do not exist and that abstract objects are merely useful constructs that help us discuss and understand reality. How we talk about reality does not commit us ontologically to abstract objects; for example, the sentence “3 is prime” does not commit us to the existence of the number 3. In addition, in view of the fact that abstract objects do not exist, there cannot be any numbers or propositions existing within God’s mind or knowledge, let alone an infinite number of them.<sup>29</sup> Therefore, although the second response to the OGIK is ineffective, a closer investigation of this second response is illuminating for it reveals that C4 is a valid option for the Christian proponents of the KCA.

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<sup>26</sup>According to Platonism, this is true since universals (such as properties) exist apart from their instances. So, for example, the property of *being green* exists even if no green objects (i.e. objects that have the property of *being green*) exist in reality.

<sup>27</sup>We may understand logical priority as follows. If an object *a* is logically prior to an object *b*, then *a* does not depend on *b* for its existence, yet *b* depends on *a* for its existence. For example, a thinker is logically prior to a thought because a thought depends on its thinker, while the thinker’s existence does not depend on that thought.

<sup>28</sup>The philosophical arguments for and against Platonism both have some weight (see, for example, Balaguer 2009; 2013). Thus, theological objections to Platonism add support to those theists who favour some form of anti-Platonism or anti-realism.

<sup>29</sup>Indeed, if numbers do not exist, then Cantor’s transfinite numbers are nothing but man-made ideas and, thus, Edward Nelson (2011:80) would be correct when he light-heartedly remarks: “The notion of the actual infinity of all numbers is a product of human imagination; the story is simply made up. The tale of *w* even has the structure of the traditional fairy tale: ‘Once upon a time there was a number called 0. It had a successor, which in turn had a successor, and all the successors had successors happily ever after.’”

### 4.3.2.3 Third Response: God's Knowledge is Non-Propositional

A third response to the OGIK is that God's knowledge is non-propositional in nature and, since the OGIK presupposes that God's knowledge is propositional in nature, the OGIK remains unsuccessful. But how valid is this response? In order to answer this question, we need first to explore the concepts of propositional and non-propositional knowledge.

Knowledge is often defined as a state of mental contact with reality.<sup>30</sup> In other words, knowledge is a type of relationship between a conscious agent and a section of reality. Three types of knowledge are often distinguished, namely, knowledge by acquaintance, competence knowledge, and propositional knowledge (Pojman, 2003:1–2). Each type may be characterised as follows.

1. Knowledge by acquaintance (or *know-x*) is knowledge of an object  $x$ , where  $x$  is directly present to one's consciousness. For example, the statement "Jones knows my brother Michael" illustrates knowledge by acquaintance. Jones is acquainted with, and directly aware of, Michael. We know many objects in this way, including our thoughts, feelings, beliefs, friends and (according to some) basic mathematical and logical principles (our intuition tells us, for example, that  $3 + 3 = 6$ , or that *modus ponens* is a valid rule of logic).

2. Competence knowledge (or *know-how*) is the ability or skill to perform some action. The statement "Jones knows how to ride a bicycle" expresses know-how. This type of knowledge does not require one to be consciously aware of the action one is performing. For example, one can know how to remain balanced while riding a bicycle without being aware that one is constantly distributing one's weight so as to remain steady.

3. Propositional knowledge (or *know-that*) is indirect knowledge. Here a person knows that  $p$ , where  $p$  is a proposition. A proposition may be defined, very simply, as the content of a sentence (or statement) and, thus, various sentences may express the same proposition. For example, the two sentences "grass is green" and "gras is groen" express the same proposition. Furthermore, since a proposition is either true or false, when someone claims to know  $p$ , he/she is claiming that  $p$  is true. For example, when I utter the statement "I know that Thomas Aquinas was an influential philosopher and theologian," I am affirming that I believe the proposition expressed by this statement to be true.

Before investigating if and how these three types of knowledge relate to God, the following word of caution seems appropriate. If we equate the character of God's knowledge to the character of our (i.e. we as finite persons) knowledge, we run the risk of restricting or misrepresenting the nature of God's knowledge. In his *City of God* (XII, 17), St. Augustine of Hippo (354–430) correctly remarks:

For that which specially leads these men astray to refer their own circles to the

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<sup>30</sup>Linda Zagzebski (1999:92), for example, defines knowledge as "a highly valued state in which a person is in cognitive contact with reality."

straight path of truth, is, that they measure by their own human, changeable, and narrow intellect the divine mind, which is absolutely unchangeable, infinitely capacious, and without succession of thought, counting all things without number. So that saying of the apostle comes true of them, for, “comparing themselves with themselves, they do not understand.” For because they do, in virtue of a new purpose, whatever new thing has occurred to them to be done (their minds being changeable), they conclude it is so with God; and thus compare, not God, – for they cannot conceive God, but think of one like themselves when they think of Him, – not God, but themselves, and not with Him, but with themselves.<sup>31</sup>

As Augustine notes, if we are misled into thinking that God’s way of knowing must be identical to our way of knowing, we may end up *not* describing the nature of God’s knowledge at all, but simply the nature of our own knowledge! This would not be very constructive in discussing omniscience. Nevertheless, this is not to say that the three types of knowledge are unhelpful in understanding the nature of God’s knowledge but simply that we should proceed with caution when comparing the nature of God’s knowledge to the nature of human knowledge.

So, then, what do the three types of knowledge tell us about the nature of God’s infinite knowledge? Firstly, it seems obvious that God has knowledge by acquaintance since many things, such as you and I (Psalm 139:1–6), what is happening in the universe right now (Job 28:24) and the rules of logic, are directly present in God’s consciousness. This type of knowledge is non-propositional in that one need not be able to express this knowledge in propositional form in order to possess it.

Secondly, because God knows how to do certain things, such as create a universe, God has competence knowledge. As in the case of knowledge by acquaintance, competence knowledge is non-propositional and, thus, God need not think to Himself, “I know how to create a universe”, in order to know how to create a universe.

Thirdly, we may say that omniscience is generally assumed to be propositional knowledge:  $S$  is omniscient if, for every proposition  $p$ , if  $p$  is true then  $S$  knows  $p$ . Although this standard definition of omniscience as knowledge of every true proposition is often said to be problematic, the definitions of omniscience that try to escape the problems inherent in this standard definition retain the assumption that omniscience is propositional knowledge. For example, one problem that Joshua Hoffman and Gary S. Rosenkrantz (2002:112) experience with the standard definition of omniscience is the problem of indexicals, according to which a person (be they omniscient or not) cannot know a *perspectival* proposition that can be expressed by another person. If Jones, for example, truthfully states, “I am thinking,” then only Jones is able to grasp this proposition, and no omniscient being can believe and know this proposition.

<sup>31</sup>Augustine’s *City of God* is available online from <http://www.ccel.org/ccel/schaff/npnf102> and this quotation is available from <http://www.ccel.org/ccel/schaff/npnf102.iv.XII.17.html> [Accessed September 23, 2013].

Hoffman and Rosenkrantz go on to redefine the standard definition of omniscience in terms of a new definition that maintains that it is possible for omniscience to be defined in terms of propositional knowledge.<sup>32</sup> The majority of alternative definitions for omniscience suggested by contemporary philosophers follow suit. But why is omniscience commonly associated with propositional knowledge? A quote from Linda Zagzebski sheds some light on this question:

Propositional knowledge has been much more exhaustively discussed than knowledge by acquaintance for at least two reasons. For one thing, the proposition is the form in which knowledge is communicated, so propositional knowledge can be transferred from one person to another, whereas knowledge by acquaintance cannot be, at least not in any straightforward way. A related reason is the common assumption that reality has a propositional structure or, at least, that the proposition is the principal form in which reality becomes understandable to the human mind (Zagzebski, 1999:92).

As Zagzebski points out, we use propositions to communicate information to each other and to understand knowledge and reality (i.e. the state of things as they exist). However, I believe that this fact should not commit us to thinking that knowledge of all reality *must* have a propositional structure. For, as mentioned above, there are good reasons for rejecting both Platonism and the existence of abstract objects, such as propositions. However, if propositions do not exist, it seems plausible that God's knowledge does not necessarily have a propositional structure. Propositions, then, are merely useful constructs for a better understanding of both reality and the nature of God's knowledge. Moreover, since God already possesses certain non-propositional knowledge (namely, knowledge by acquaintance and competence knowledge) it seems possible to define the nature of all God's knowledge in non-propositional terms.

However, if God's knowledge is non-propositional (as it is traditionally said to be), how should we understand His knowledge? Of course, we are unable to fully grasp the nature of God's knowledge. Nevertheless, God's non-propositional knowledge may be similar to how Aquinas envisaged it. In his *Summa Contra Gentiles*, 1.51–53, Aquinas argues that it is “by one object-representation – God's substance – and by one understood conception – God's Word – God can understand many things” (Aquinas, 2008:242). For Aquinas, God's knowledge is simple; there is no diversity in God's knowledge, nor is there any distinction between God's knowledge and its object. In other words, God has one simple intuition of all reality. Moreover, although reality is diverse and complex, God's knowledge is not akin to this diversity which is

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<sup>32</sup>Hoffman and Rosenkrantz's new definition of omniscience is as follows: “*S* is omniscient at time *t* = df. (i) for any proposition *p*, if *p* is a necessary truth, or if *p* is a contingent truth that is not about the future relative to *t*, and either *p* can be grasped by different individuals, or *p* can be grasped by *S* alone, then at *t*, *S* know *p*, and (ii) for any proposition *p*, if *p* is a contingent truth about the future relative to *t* whose truth is causally inevitable at *t*, and either *p* can be grasped by different individuals, or *p* can be grasped by *S* alone, then at *t*, *S* knows *p*” (Hoffman & Rosenkrantz, 2002:124).

found in creation, for God does not analyse distinct facts about reality and then organise these facts into some sort of knowledge system.

As an analogy, we may think of God's non-propositional knowledge as being similar to the way in which we experience either knowledge by acquaintance or competence knowledge. For example, divine knowledge may be similar to our initial knowledge of how to ride a bicycle, where we have not yet analysed all the various actions we perform while riding a bicycle. Such analogies are, of course, problematic because it is disputed whether or not human beings have any form of knowledge that is completely non-propositional in structure. Nevertheless, although we, as finite beings, need to break up sections of perceived reality into bits of propositions in order to make logical sense out of them and so that we can communicate and understand reality, God has no such limitations. As William Alston states,

God can surely grasp any concrete whole fully, not just partial aspects thereof. And God has no need to extend His knowledge, inferentially or otherwise, since it is necessarily complete anyway. Hence there would be no point in God's carving up His intuition of reality into separate propositions. We have to represent divine knowledge as the knowledge of this or that particular fact; but this is only one of the ways in which we are forced to think of God's nature and doings in terms of our own imperfect approximations thereto (Alston, 1986:291).

According to Alston, then, we, as human beings, are forced to think of God's knowledge in terms of propositional knowledge for this is how we make sense of things. However, defining God's knowledge in terms of propositional knowledge does not imply that God's knowledge is propositional. Indeed, it seems plausible that God grasps reality as a whole or as one entity, while we, as human beings, conceptually subdivide reality into a potentially infinite number of sections. In this regard, God's knowledge of all reality is similar to a ruler. A ruler is not a composition of an actually infinite number of points, but is rather one object that may be subdivided endlessly into a potentially infinite number of subdivisions. Similarly, one may continue to divide God's knowledge of all reality into different propositional bits endlessly, but one will never make an actually infinite number of divisions. Thus, we are correct in saying that God knows *that the earth is round* for God does know that. However, this representation simply states, in a propositional manner, what God knows in a non-propositional manner. We may, therefore, retain our current definitions of omniscience without affirming that they entail knowledge of an actually infinite number of propositions or objects.

I believe that such a conception of God's knowledge successfully falsifies premise (1) of the OGIK and, thus, removes the force of the OGIK. However, this third response to the OGIK does not address the problem raised by Platonism, namely, if abstract objects exist, then an actually infinite number of them exist either inside or outside of God's mind. Nevertheless, I am now in a position to offer a direct response to the OGIK.

#### 4.3.2.4 An Attempt at a Cumulative and Conclusive Response

After examining three of the various responses to the OGIK, it is possible to suggest the following cumulative response to the OGIK. Firstly, omniscience should be understood as *maximal knowledge*. To say that God has maximal knowledge is to say that no other being's knowledge could surpass God's knowledge. In other words, God possesses the most perfect knowledge that is attainable. Thus, if no being is able to possess knowledge of an actually infinite number of things, then it is no violation of God's omniscience if He fails to possess such knowledge. Secondly, abstracts objects, such as numbers, propositions, and mathematical equations, do not really exist. Therefore, there are no propositions or numbers that exist either within God's mind or apart from God, let alone an actually infinite number of them. Thirdly, God's knowledge is non-propositional in nature and, thus, it is incorrect to claim that omniscience implies that God knows an actually infinite number of propositions.

The critic might retort that this solution to the OGIK fails because, regardless of God's mode of knowledge, there is at least one completed and actually infinite set of truths, namely, *all future truth-values*. Thus, even if God's mode of knowledge is non-propositional, God's complete foreknowledge of the future will encompass all future truth-values and, thus, God's non-propositional knowledge may be divided into – not a potentially infinite number of propositions – but an actually infinite number of propositions. In other words, God's non-propositional knowledge of the future may be divided into a one-to-one correspondence between events and natural numbers with each future event corresponding to one and only one natural number. Therefore, since all future events amount to an actual infinite and God's foreknowledge has the potential to be divided into an actually infinite number of parts, God's omniscience implies the possibility of the actual infinity.

This objection, however, makes two unjustified assumptions – firstly, that the future comprises an actually infinite number of events and, secondly, that God's knowledge cannot encompass a potential infinity without necessitating an actual infinity. With respect to the former, the phrase “all future truth-values” may be understood as meaning either (I) a completed and actually infinite set of truth-values or (II) an endless and potentially infinite set of truth-values. However, the proponents of the KCA argue that an actual infinity cannot exist and, thus, this phrase should be understood as meaning (II). If the arguments against the actual infinity are sound, then the series of future events denotes an endless succession that never reaches infinity and, therefore, there is no actually infinite set of events or future truth-values for God to know.

The latter assumption is that if God's non-successive knowledge encompasses a potentially infinite series of future truth-values, then, in fact, God's knowledge encompasses an *actually* infinite series of future truth-values. In other words, God's non-propositional knowledge of the potentially infinite series of future events somehow “transforms” the series into an actually infinite series, so to speak. As I understand it, it appears that this assumption is based on

an additional assumption, namely, that God cannot *simultaneously* know every event in the potentially infinite series of future events unless this series can be comprehended as a completed totality or an actual infinity. This additional assumption might be true if God's knowledge is propositional in nature with the series of future events having a one-to-one correspondence with the propositions of God's knowledge. If the set of propositions of God's knowledge were a completed totality, then the series of future events would be a completed totality also and, thus, be an actual infinity. On the other hand, if God's knowledge is non-propositional in nature, then there is no set of items in God's knowledge and, therefore, God's knowledge is not a completed whole possessing various knowledge items. God's simple knowledge, then, may be divided endlessly into a potentially infinite number of propositions each of which correspond to a future event. Therefore, God's non-propositional knowledge does not limit God's knowledge as a static and completed collection of various knowledge items that has reached infinity as a limit but, rather, it exalts the extent of God's knowledge as dynamic, endless and limitless. Indeed, just as the potential series of future events is boundless and endless, so too is God's knowledge. Thus, God can simultaneously know every future event without necessitating an actual infinity.

Therefore, I believe that my cumulative response removes the force of the OGIK and also helps us respond to questions raised by the OGIK. For example, if one were to ask, "How many future events does God know about?" we may respond, "Potentially infinitely many, since the future and God's knowledge of the future may be divided into a potentially infinite number of parts only". Again, a similar response may be given if one were to ask, "How many numbers or mathematical equations is God aware of?" Thus, unlike the assumption of the OGIK, omniscience does not imply the existence of an actual infinity.

#### 4.4 Conclusion

As we have seen, the IGO comes in two forms. According to the first, the arguments against the existence of the actual infinite employed by the KCA cause difficulties as regards God's nature. If an actual infinity cannot exist, then God cannot be infinite. On the other hand, if God is infinite, then an actual infinity can exist, and the KCA becomes problematic. However, I have argued that this first form of the IGO equivocates in respect of the term "infinite". In view of the fact that the KCA offers arguments against the notion of a *quantitative* infinity, while God's nature is generally understood in terms of a *qualitative* infinity, God's infinity is not the same thing as the mathematical infinity.

According to the second form of the IGO, omniscience entails the existence of an actual infinity because an omniscient being would know an actually infinite number of propositions, such as all the propositions expressing all future events or all mathematical truths. Thus, according to this objection, either God is omniscient and an actual infinity exists, or God is

not omniscient and an actual infinity cannot exist. However, I have attempted to show that a plausible solution to this dilemma is, essentially, to (a) deny the existence of abstract objects and (b) affirm that God's knowledge is non-propositional in nature. Therefore, I have defended the second part of my overall claim in this paper: *The infinite God objection fails to undermine the kalām cosmological argument.* <sup>33</sup>

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<sup>33</sup>Of less importance, it may be pointed out that the KCA remains valid even if the IGO is successful. All that follows from the IGO is that the proponents of the KCA must abandon the first philosophical argument (namely, the argument from the impossibility of the existence of an actual infinite) and support the second premise of the KCA (i.e. the premise that claims the universe began to exist). However, the other arguments in support of the second premise, namely, (a) the argument from the impossibility of the formation of an actual infinite by successive addition, (b) the argument from the expansion of the universe, and (c) the argument from thermodynamics, remain unscathed and provide a powerful case for the finitude of the universe.

## 5 CONCLUSION – THE KALĀM COSMOLOGICAL ARGUMENT AND THE INFINITE GOD OBJECTION

### 5.1 Summary of Research

In this paper I have defended two contentions: (1) the activity of developing theistic arguments, be it through the philosophy of religion, natural theology, or apologetics, is a tenable and worthwhile activity; and (2) the infinite God objection (IGO) fails to undermine the kalām cosmological argument (KCA). Concerning the former, it is possible to define a theistic argument as a philosophical argument that tries to establish the existence of the theistic God apart from divine revelation (such as Scripture). More specifically, in view of the fact that this paper is written from a Christian perspective, I have used the term “theistic arguments” to refer to those arguments that attempt to demonstrate the existence of the *Christian* God.

During the sixteenth and eighteenth centuries many Christian thinkers became enthusiastic about formulating theistic arguments. This enthusiasm was partly the result of certain scientific and philosophical developments that were threatening the Christian faith. These developments included (i) Copernicus’s theory that the earth revolves around sun; (ii) Galileo and Newton’s theory that the universe is governed by physical laws; (iii) Darwin’s theory of natural selection; (iv) the rise in biblical criticism; and (v) the rise of evidentialism. As a result, theistic arguments today are common in the philosophy of religion, natural theology, and apologetics. However, many thinkers (especially Christian thinkers) have fervently criticised the activity of developing theistic arguments.

I have attempted to show that six of the most forceful objections to developing theistic arguments remain unsuccessful. The first four objections are philosophical, while the last two are theological. The weaknesses of these objections are as follows. The first objection claims that created laws (such as the laws of logic) cannot “prove” a transcendent Creator who would have created these laws. However, this objection amounts to saying that no logical argument can be *about* a transcendent Creator. Thus, the objection is self-refuting for this objection itself is a logical argument *about* a transcendent Creator. According to the second objection, our postmodern ethos removes the need for theistic arguments. This objection fails, however, because postmodernism is self-refuting and because we do not, in fact, live in a postmodern ethos. The third objection claims that theistic arguments are unnecessary if a person is to be justified in believing in God and, therefore, such arguments are futile. However, this objection is a *non sequitur* because its conclusion does not follow from its premises. The fourth objection, which argues that no theistic argument can conclude to a being that possesses all the essential attributes of God, fails to appreciate cumulative case arguments and, thus, is unsuccessful.

The first theological objection claims that theistic arguments divert us from the God revealed in Scripture. However, this claim is not necessarily true and, indeed, many theistic arguments

may be used to support certain theological claims about God, such as His self-existence, His maximal greatness and His perfect goodness. The second objection argues that theistic arguments are unbiblical. However, I have shown that, on the contrary, Scripture actually supports the notion of developing theistic arguments.

Furthermore, I have argued that theistic arguments are important because they initiate an interest in God, they shed light on theological difficulties, for example, how to understand divine eternity and omniscience, and they help us explore the question of God's existence, which I believe is one of life's most important questions. My conclusion, therefore, is that the activity of developing theistic arguments is tenable, worthwhile and important. In fact, as a result of my research, I would venture to say that Christian philosophers ought to be engaged in the activity of developing theistic arguments.

Concerning my second contention, namely, that the IGO fails to undermine the KCA, I have presented a thorough analysis of both the KCA and the IGO. The KCA is an ancient theistic argument based on the impossibility of an infinite temporal regress of events. According to the KCA, if the universe were eternal, there would be an actually infinite series of past events, each caused by the event immediately prior to it. However, the existence of an actually infinite number of things (such as past events) is impossible and, therefore, the series of past events must have a beginning. Therefore, the universe began to exist. But whatever begins to exist has a cause. Therefore, the universe has a cause.

In order to understand the KCA and IGO, it is important to understand the distinction between the potential infinite and actual infinite. The *potential infinite* denotes a boundless quantitative process, such as endless addition, endless division and endless succession. Thus, a potential infinite series is a series that increases endlessly towards infinity as a limit but never reaches it. On the other hand, the *actual infinite* denotes a boundless, completed quantitative whole. In other words, it refers to a completed totality of infinitely many distinct elements.

The IGO, in essence, attempts to show that the philosophical arguments against the existence of the actual infinite propounded by the KCA are problematic. The objection claims that the Christian proponents of the KCA face the following dilemma: either an actual infinity cannot exist, or God's divine attributes cannot be infinite. I have primarily addressed the problem of divine omniscience raised by the IGO. The problem is that if God is omniscient, then it would appear that He knows an actually infinite number of propositions. For example, if God has complete foreknowledge of the future, then would God not know an actually infinite number of future events as, according to Christianity, the future is endless? Or, since there are clearly an actually number of mathematical truths and equations, for example,  $2 + 2 = 4$ , does God not know all these truths?

There are three typical responses to the IGO. The first response is that it is impossible to know an actually infinite number of things. Thus, it is no violation of omniscience if God fails to know an actually infinite number of propositions. However, this response fails to deal with

the central claim of the IGO, namely, that God's *non-successive* knowledge must be actually infinite.

The second response to the IGO is that a metaphysical infinite is possible while a physical infinite is impossible. The former concerns an actually infinite number of abstract objects (non-spatial, non-temporal, non-physical and causally inert objects such as numbers, universals, properties and propositions). The latter concerns an actually infinite number of concrete objects (objects that are not persons and are spatially or temporally extended, or spatiotemporally extended). Thus, it is claimed that the impossibility of an actually infinite series of past events does not imply that God cannot know an actually infinite number of propositions. The weakness of this response, however, is that it seems difficult to justify why the metaphysical realm is exempt from the thought experiments that illustrate the absurdities that result from the notion of an actual infinity.

The third response is that God's knowledge is non-propositional in nature. We, as human beings, are forced to think of God's knowledge in terms of propositional knowledge for this is how we make sense of things. However, defining God's knowledge in terms of propositional knowledge does not imply that God's knowledge is propositional. In addition, since there is no incoherence in the notion of non-propositional knowledge, it seems reasonable to understand God's knowledge in this way. This response, I believe, is valid. However, the response fails to address the ontological status of abstract objects. If abstract objects exist, then there is clearly an actually infinite number of them.

Combining the strengths of these three responses, I have shown that the following may be a plausible response to the IGO. Firstly, in view of the fact that the KCA argues against the notion of a *quantitative* infinity, while God's nature is generally understood in terms of a *qualitative* infinity, God's infinity is not the same as the mathematical infinity. Secondly, omniscience should be understood as *maximal knowledge*, that is, no other being's knowledge could surpass God's knowledge. Thus, if no being is able to possess knowledge of an actually infinite number of things, then it is no violation of God's omniscience if He fails to possess such knowledge. Thirdly, abstracts objects do not exist and, thus, God's knowledge cannot be composed of propositions, nor do an actually infinite number of abstract objects exist either within God's mind or apart from God. Fourthly, God's knowledge is non-propositional in nature, and so it is incorrect to claim that omniscience implies that God knows an actually infinite number of propositions.

I believe that this combined response to the IGO succeeds in showing that the IGO fails to undermine the KCA and, thus, the KCA remains a strong theistic argument that should not be ignored.

## 5.2 Concluding Remarks and Suggestions for Further Research

A comprehensive analysis of the relationship between God, theistic arguments and infinity still remains to be written. Such a study could investigate, for example, the implications that the impossibility of the actual infinite would have for the divine attributes, including eternity, omnipotence, omnipresence and omnibenevolence. Questions such as “Can God perform an actually infinite number of tasks?” or “Can God love an actually infinite number of persons?” should be explored. Such a study may, furthermore, attempt to determine how the considerations about infinity relate to other theistic arguments such as the ontological argument or other versions of the cosmological argument. Thus, there remains much work to be done by philosophers of religion on the topic of *God, theistic arguments and infinity*. As Oppy remarks, “Although the examination of infinity in theological contexts is doubtless not itself an *infinite* task, it is abundantly clear . . . that there is *plenty* of work to be done” (Oppy, 2011:253 [original emphasis]).

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